

Personality Traits, Self Esteem and Perceived Controllability as Predictors of Psychological Health among Gamblers in Ado Ekiti, Ekiti State

Sulaiman, Sikirulai Alausa

Department of Psychology
Federal University Oye -Ekiti, Ekiti State
Sulaiman.sikirula@fuoye.edu.ng

Osuh, Jackson Iheukwumere

Department of Psychology
jacksonosuh@gmail.com

Olugbenga David Dada

Department of Psychology
Federal University Oye-Ekiti
Dada.olugbenga@fuoye.edu.ng

Abstract

*Sports betting and other forms of gambling have increased rapidly across many African cities, including those in Nigeria, largely driven by the growth of commercial betting outlets and mobile betting platforms. Although research from high-income countries links gambling with adverse psychological outcomes, empirical evidence on the psychological determinants of gamblers' well-being in low- and middle-income countries (LMICs) remains limited. Understanding how personality characteristics and perceived control relate to psychological health among gamblers in African settings is therefore important for informing prevention and intervention strategies. A cross-sectional survey design was employed among 300 active gamblers recruited through purposive sampling from major sports betting centres in Ado Ekiti, Nigeria. Participants completed standardized measures assessing Big Five personality traits, self-esteem, perceived controllability, and psychological health. Data were analysed using Pearson correlation, multiple regression analysis, and independent-samples *t* tests. Perceived controllability showed a significant positive association with psychological health ($r = .12, p < .05$). The Big Five personality traits did not demonstrate a significant joint effect on psychological health, $F(5, 293) = 2.11, p > .05$. However, extraversion ($\beta = -.15, t = -1.69, p < .05$) and neuroticism ($\beta = .13, t = 1.93, p < .05$) independently predicted psychological health. No significant difference emerged between gamblers with high perceived controllability ($M = 55.96$) and those with low perceived controllability ($M = 54.71$), $t(297) = 0.93, p > .05$. Personality factors and perceived controllability appear to have modest but meaningful associations with gamblers' psychological health. Interventions targeting gamblers in Nigeria may benefit from incorporating personality-informed counselling and cognitive-behavioural approaches aimed at strengthening perceived control.*

Keywords: *gambling behaviour; personality traits; perceived controllability; self-esteem; psychological health; Nigeria.*

Introduction

Gambling has witnessed a significant surge in Nigeria, driven largely by the proliferation of sports betting platforms and physical betting shops (Afolabi, 2019). While it can be a source of entertainment, problematic gambling is strongly associated with adverse consequences,

including financial debt, relationship breakdown, and comorbid mental health disorders such as depression and anxiety (Ledgerwood & Petry, 2010). According to Chukuemeka and Adedoyin (2013), youths in the age range of 18 years and 41 years engage in gambling behaviour. Common forms of gambling include sports betting, such as Nairabet, Naija bet, and Bet1960, among others (Adeyemi, 2014). According to Adeyemi (2014), popular betting in southwestern Nigeria, Baba Ijebu and MMM had made a mark on a series of Nigerian youths. However, it was noted that the adverse negative effect of gambling behaviour is starting to show earlier than anticipated. It is a point to note that a form of dashed hope after an anticipated winning of a bet could contribute significantly to the psychological health of gamblers.

The economic pressures and high unemployment rates among Nigerian youth make the potential rewards of gambling particularly enticing, increasing vulnerability to its negative impacts. Psychological health, defined as a state of well-being in which an individual realizes their own abilities, can cope with the normal stresses of life, and can work productively (WHO, 2004), is critically challenged by problematic gambling behaviours. However, not all gamblers experience the same degree of psychological distress. This variability points to the role of underlying psychological factors that may predict an individual's susceptibility. The Five-Factor Model (FFM) of personality provides a robust framework for understanding this vulnerability. Neuroticism, characterized by emotional instability and a tendency towards negative affect, has been consistently linked to both the development of gambling problems and poorer mental health outcomes (Bagby et al., 2007). Conversely, conscientiousness, reflecting self-discipline and deliberation, is often a protective factor against impulsive behaviours and their negative sequelae. The role of extraversion, associated with sociability and excitement-seeking, is more ambiguous, as it may both draw individuals to social gambling contexts and potentially buffer against isolation. Beyond personality, self-esteem is a critical construct. Low self-esteem is a known risk factor for various psychopathologies.

In the context of gambling, individuals with low self-worth may be drawn to gambling as a means of achieving a sense of accomplishment or social validation, creating a cycle where losses further diminish self-esteem and exacerbate psychological distress (Fortune & Goodie, 2012). A cognitive factor particularly relevant to gambling is perceived controllability, the erroneous belief that one can influence chance-determined outcomes. This cognitive distortion is a core component of problem gambling (Ladouceur et al., 2001). While typically viewed as a maladaptive cognition that sustains gambling, its relationship with psychological health is complex. In the short term, a strong belief in control might provide a sense of agency and hope, potentially buffering against immediate distress, even if it perpetuates the gambling behaviour in the long run. Despite the growing visibility of gambling in Nigeria, there is a dearth of empirical research examining the psychological profile of Nigerian gamblers. Most studies have been conducted in Western contexts, and the unique socio-cultural and economic landscape of Nigeria necessitates localized investigation. This study, therefore, aims to fill this gap by examining the predictive roles of personality traits (neuroticism, extraversion, conscientiousness), self-esteem, and perceived controllability on the psychological health of gamblers in Ado Ekiti, Ekiti State, Nigeria.

Critically evaluating the problems, gambling has increasingly become a common recreational and financial activity among many adults in Ado-Ekiti, Ekiti State. The rapid expansion of betting centres, online gambling platforms, and lottery activities has led to a growing population of individuals who engage in gambling as a routine rather than an occasional pastime. Although gambling is often perceived as harmless entertainment, a substantial body

of psychological evidence indicates that consistent gambling behaviour can have profound effects on psychological health. Gamblers often report symptoms such as anxiety, depression, stress, irritability, and impaired daily functioning, especially when losses accumulate or financial pressures increase. Despite this, the factors that predict psychological health among gamblers in Ado-Ekiti remain poorly understood.

One key psychological factor associated with health outcomes is personality traits. The Five-Factor Model comprising extraversion, agreeableness, openness, conscientiousness, and neuroticism provides a robust framework for understanding behavioural tendencies. For instance, individuals high in neuroticism may be more emotionally reactive to gambling losses, while those high in conscientiousness may show more self-regulation and less risky gambling patterns. However, there is limited empirical evidence within Ado-Ekiti examining how these personality traits collectively or independently contribute to psychological health among gamblers. This gap in knowledge raises the first major problem: it is unclear whether personality traits, self-esteem, and perceived controllability are meaningfully related to psychological health among gamblers within this cultural and socioeconomic context.

Another critical psychological construct is self-esteem, which influences how individuals appraise themselves, cope with stress, and interpret gambling outcomes. Low self-esteem may predispose gamblers to emotional distress, escapism through gambling, or difficulty handling losses, thereby affecting their psychological health. Yet, existing studies have not sufficiently explored how self-esteem interacts with personality characteristics and controllability beliefs to predict psychological health among gamblers in this metropolis.

Furthermore, perceived controllability, the belief that one can regulate or influence life outcomes, plays an important role in gambling behaviour. Gamblers who feel they can control outcomes may experience less emotional distress, while those with low perceived controllability may feel helpless, anxious, or overwhelmed, particularly after repeated losses. However, empirical evidence comparing gamblers with high versus low perceived controllability and their levels of psychological health remains scarce in Ekiti State. This gap motivates the third hypothesis that levels of perceived controllability may significantly differentiate gamblers' psychological health status.

Given the rising prevalence of gambling in Ado-Ekiti and the psychological challenges often associated with it, these unresolved issues highlight the urgent need for empirical investigation. Without a clear understanding of these predictive variables, stakeholders such as mental health practitioners, policymakers, and community leaders may lack adequate information to design interventions that promote healthier gambling behaviours and better psychological well-being.

The purpose of this study is to investigate how personality traits, self-esteem, and perceived controllability predict the psychological health of gamblers in Ado-Ekiti metropolis. Specifically, the study aims to:

1. Examine whether there is a significant relationship among personality traits, self-esteem, perceived controllability, and psychological health.
2. Determine the joint and independent influence of the Big Five personality traits on psychological health among gamblers.
3. Compare gamblers with high versus low perceived controllability to determine differences in their psychological health.

The study tested two hypotheses;

1. Personality traits (extraversion, agreeableness, openness, conscientiousness and neuroticism) will have a significant joint and independent influence on the psychological health of gamblers in Ado Ekiti Metropolis.
2. Gamblers with a high level of perceived controllability will report significantly higher psychological health than those with a low level of perceived controllability.

Methodology

Design and Participants

A cross-sectional survey design was employed. The sample consisted of 300 active gamblers recruited from a purposive selection of sports betting centers in Ado Ekiti. Inclusion criteria were: being 18 years or older, having engaged in monetary gambling at least once a week for the past three months, and providing informed consent. The sample was predominantly male (81.8%), with a mean age of 28.4 years (SD = 6.7).

Instruments

Psychological health: This section measures psychological health, using a scale developed by Hendrick et al. (2009). The psychological health scale consisted of 22 items. The scale was developed to measure psychological health. The items were answered on a 6-point Likert scale ranging from 1 (All of the time), 2 (most of the time), 3 (a good bit of the time), 4 (some of the time), 5 (a little of the time), 6 (none of the time). The scale developer reported adequate reliability ranging from 0.42 to 0.74. The local reliability will be reported in this study.

Self-Esteem Scale: Rosenberg Self-Esteem Scale (RSES) A 10-item unidimensional scale measuring global self-esteem (Rosenberg, 1965). Scores range from 10 to 40, with higher scores indicating higher self-esteem. It showed good reliability ($\alpha = .84$).

Perceived controllability scale: The controllability belief scale developed by Dagnan, Hull and McDonnell (2013) was used in this study. It is a 15-item scale developed to measure to what extent individuals believe they are in control of certain events in their lives. The scale was adapted to suit the population of the study, being gamblers. The response format ranged on a 5-point: SA – Strongly agree, A – Agree, U – Undecided, D – Disagree, SD – Strongly Disagree. The scale has acceptable internal reliability (alpha for total score = 0.89; alpha for negative sub-scale = 0.92, alpha for positive sub-scale = 0.73).

Personality Traits Scale: This comprises a 10-Item Personality Inventory (TIPI) developed by Gosling et al. (2003) for measuring Big-Five personality dimensions. The Ten-Item Personality Inventory (TIPI) includes two items for each of the Big Five personality dimensions. It is a 5-point Likert response format, the response categories ranging from 1: 'disagree strongly' up to 5: 'agree strongly'. As a measure of the Big-Five dimensions of personality, the TIPI has been validated against standard Big-Five instruments. The Test-retest reliability is therefore a more appropriate reliability measure for such brief scales. They are 0.77 for Extraversion, 0.71 for Agreeableness, 0.76 for Conscientiousness, 0.70 for Emotional Stability and 0.62 for Openness, indicating that the scale provides a stable measure of personality over time.

Results

In order to understand the connectedness among the variables, an initial zero-order correlation analysis was carried out. Main study variables include: personality traits,

perceived controllability, self-esteem and psychological health. The summary of this analysis is presented in Table 1.

Table 1: Table showing Zero Order Correlation, Means and Standard Deviation of all variables

Variables	1	2	3	4	5	M
SD						
1. Psychological Health	1				55.40	11.64
2. Personality traits	.10	1				35.24
		7.99				
3. Perceived controllability	.12*	.50**	1			
		50.17	11.69			
4. Self Esteem	.05	.38**	.46**	1		
		17.05	6.16			

* P< .05, **P< .01.

Results from Table 1 show a significant positive relationship between perceived controllability and psychological health ($r=.12$; $p<.05$). This implies that as gamblers perceive themselves to have better control over situations, their psychological health increases in the same dimension. Further statistics were done to help throw light on the interrelatedness observed from the zero-order correlation.

Hypothesis 1

The first hypothesis, which states that personality traits (extraversion, agreeableness, openness, conscientiousness and neuroticism) will have a significant joint and independent influence on the psychological health of gamblers in Ado Ekiti Metropolis, was tested using a simple multiple regression. The result is summarised in Table 2 below.

Table 2: Summary of multiple regression test showing the joint and independent influences of Personality traits on Psychological health of gamblers in Ado Ekiti

Independent Variables	β	t	sig	R	df	R ²	F	p
					5			
Extraversion	-.15	-1.69	<.05	.19		.04	2.11	>.05
Agreeableness	.02	.24	>.05					
Conscientiousness	.03	.55	>.05					
Neuroticism	.13	1.93	<.05					
Openness	.10	1.29	>.05		293			

*p<.05

Results from table 2 reveals that there is no significant joint influence of extraversion, agreeableness, openness, conscientiousness and neuroticism on psychological health ($F(5, 293)=2.11$; $p >.05$). Furthermore, all the personality traits did not independently predict psychological health except extraversion ($\beta=-.15$; $t=-1.69$; $p<.05$) and neuroticism ($\beta=.13$; $t=1.93$; $p<.05$). Extraversion contributed about 15% of the variance observed in the dependent variable, while Neuroticism contributed about 13% in the variance seen in the

dependent variable. The negative sign in the beta value for agreeableness shows that the more agreeable a gambler is with the conditions of the behaviour, the poorer their psychological health. The hypothesis was partially confirmed.

Hypothesis 2

The second hypothesis, which states that gamblers with a high level of perceived controllability will report significantly higher psychological health than those with a low level of perceived controllability, was tested using t-test for independent samples. The summary of the results is presented in Table 3.

Table 3: Summary of t-test for independent samples showing the comparison between high and low perceived controllability gamblers on Psychological health

Percieved Controllability	N	X	SD	df	t	p
High	161	55.96	10.86	297	.93	>.05
Low	138	54.71	12.53			

Results from table 3 reveal that there is no significant difference ($t=.93$; $df=297$; $p>.05$) between high perceived controllability gamblers ($X=55.96$) and low perceived risk gamblers ($X=54.71$) on psychological health. Based on the result, the hypothesis is not confirmed and consequently rejected.

Discussion

The present study examined the extent to which personality traits, self-esteem, and perceived controllability predict psychological health among gamblers in Ado-Ekiti, Ekiti State, Nigeria. The findings revealed a small but statistically significant positive relationship between perceived controllability and psychological health. Conceptually, this result aligns with long-standing psychological theories linking perceived control—often conceptualized as locus of control, perceived mastery, or self-efficacy- to improved mental health outcomes (Bandura, 1997; Rotter, 1966). Individuals who believe that life outcomes are influenced by their own actions tend to demonstrate greater adaptive coping, reduced helplessness reactions, and lower levels of psychological distress.

Contemporary empirical research continues to support the protective role of perceived control in psychological functioning. For instance, individuals with stronger perceptions of personal agency tend to report lower anxiety, reduced depressive symptoms, and greater subjective well-being (Infurna & Gerstorf, 2020; Lachman et al., 2021). Within gambling populations specifically, perceived control has been shown to influence how individuals respond to gambling losses and regulate risky betting behaviours (Dowling et al., 2021). The present findings, therefore, suggest that gamblers who perceive greater personal control over their behaviour may experience slightly better psychological health.

However, the magnitude of the observed effect was relatively small. This modest effect size is not unexpected, given the multifactorial nature of psychological health among gamblers. Gambling behaviour is influenced by a complex interaction of individual vulnerabilities, cognitive distortions, financial stress, environmental factors, and comorbid mental health conditions (Blaszczynski & Nower, 2022; Gainsbury, 2019). Thus, while perceived controllability may contribute to psychological resilience, it represents only one component within a broader network of determinants. From a practical perspective, the findings support the integration of interventions that strengthen realistic perceptions of control, such as

cognitive-behavioural training, self-regulation skills, and accurate risk appraisal, within gambling harm-reduction programs.

Regarding personality traits, the findings indicated that the five-factor personality traits collectively did not significantly predict psychological health. Nonetheless, two traits—extraversion and neuroticism demonstrated significant independent effects. Neuroticism was positively associated with poorer psychological health, which is consistent with extensive evidence indicating that neuroticism represents one of the most reliable personality predictors of anxiety, depression, and emotional instability (Kotov et al., 2017; Lahey, 2022). Individuals high in neuroticism typically exhibit heightened emotional reactivity, increased stress sensitivity, and maladaptive coping patterns, all of which may increase vulnerability to psychological distress in high-risk environments such as gambling contexts.

The finding that extraversion was negatively associated with psychological health diverges from the commonly reported positive relationship between extraversion and well-being (Anglim et al., 2020). Several explanations may account for this unexpected pattern. First, extraversion in gambling contexts may be associated with increased exposure to socially driven gambling environments, including sports betting centres and peer-influenced betting activities. These environments may reinforce impulsive wagering behaviour and financial risk-taking, which could indirectly contribute to psychological distress. Previous studies have suggested that sensation seeking and social stimulation traits, often associated with extraversion, may increase engagement in risky gambling behaviour (Bonnaire & Barrault, 2019; Hing et al., 2022).

Another methodological explanation relates to the statistical structure of the regression model. When several personality traits are entered simultaneously, shared variance among the predictors may reduce the overall predictive power of the model while allowing specific traits to emerge as individual predictors. Multicollinearity among personality dimensions can therefore obscure the collective predictive strength of the Big Five traits in regression analyses (Field, 2018). Additionally, the relatively modest beta coefficients observed in the present study suggest that personality traits account for only a limited proportion of the variance in psychological health within this population.

Hypothesis two tested whether gamblers with high perceived controllability differed significantly in psychological health from those with low perceived controllability. The analysis revealed no statistically significant difference between the groups. The small mean difference and non-significant t-value indicate that categorizing gamblers based on perceived controllability may not capture meaningful variations in psychological health within this sample.

One plausible explanation for this finding is methodological. Dichotomizing continuous psychological variables often reduces statistical power and obscures subtle relationships present in the data (Cohen et al., 2018; Maxwell et al., 2018). Perceived controllability may operate as a continuous psychological resource rather than a categorical characteristic. Consequently, dividing participants into “high” and “low” groups may have reduced the sensitivity needed to detect small but meaningful effects.

It is also possible that other unmeasured variables moderated the relationship between perceived controllability and psychological health. Factors such as gambling severity, financial losses, impulsivity, or substance use may interact with perceived control in shaping mental health outcomes among gamblers (Dowling et al., 2021; Hing et al., 2022). Future

studies may therefore benefit from examining perceived controllability as a moderating variable within more comprehensive models of gambling behaviour.

Overall, the present findings highlight the complex interplay of cognitive beliefs, personality dispositions, and self-evaluative processes in shaping psychological health among gamblers. Although the predictive strength of each variable was modest, the results underscore the importance of considering psychological vulnerabilities when addressing gambling-related harms, particularly within emerging gambling markets in sub-Saharan Africa.

Conclusion

This study investigated the predictive influence of personality traits, self-esteem, and perceived controllability on the psychological health of active gamblers in Ado-Ekiti, Ekiti State, Nigeria. The findings revealed that perceived controllability demonstrated a significant positive association with psychological health, suggesting that gamblers who believe they can regulate or influence their behaviour tend to report better psychological functioning.

Although personality traits collectively did not significantly predict psychological health, neuroticism emerged as an important individual predictor, highlighting its role as a vulnerability factor for psychological distress. The unexpected negative association between extraversion and psychological health further suggests that personality dynamics within gambling environments may differ from patterns observed in the general population.

Taken together, the findings indicate that psychological health among gamblers is shaped by a combination of cognitive appraisals, dispositional personality characteristics, and individual self-perceptions. The study therefore contributes to the growing body of literature on gambling behaviour by providing empirical evidence from a Nigerian context, where research on the psychological determinants of gambling remains limited.

Recommendations

Integration of psychological interventions: Gambling harm-reduction programs should incorporate cognitive-behavioural strategies that enhance gamblers' perceived controllability, including self-regulation training and realistic risk appraisal.

Personality-informed counselling: Mental health professionals working with gamblers should consider personality assessments to identify individuals at higher risk of psychological distress, particularly those with high levels of neuroticism.

Self-esteem development programmes: Psychoeducational workshops and behavioural skills training aimed at strengthening self-esteem may help improve emotional resilience among frequent gamblers.

Policy collaboration: Gambling regulatory agencies should collaborate with psychologists and public health experts to develop evidence-based policies that address the psychological risks associated with gambling participation.

Public awareness initiatives: Community-based campaigns should promote responsible gambling practices and educate the public about the potential psychological consequences of excessive gambling.

Limitations

Several limitations should be considered when interpreting the findings of this study. First, the cross-sectional design prevents the establishment of causal relationships between the

variables examined. Second, the purposive sampling of participants from selected betting centres in Ado-Ekiti may limit the generalizability of the findings to other gambling populations in Nigeria or beyond.

Additionally, the use of self-report questionnaires may have introduced response biases, including social desirability bias and recall bias. Gambling behaviour is often a sensitive topic, and participants may have underreported behaviours perceived as socially undesirable. Finally, the study examined only a limited set of psychological predictors. Other relevant variables, such as impulsivity, financial stress, coping strategies, and emotional regulation, were not included in the analysis but may significantly influence psychological health among gamblers.

Suggestions for Further Studies

Future research should employ longitudinal designs to better understand causal relationships between psychological characteristics and gambling-related outcomes. Expanding the study to include larger and more geographically diverse samples across multiple Nigerian states would also enhance the generalizability of findings.

Researchers are encouraged to adopt mixed-methods approaches, combining quantitative surveys with qualitative interviews, to obtain deeper insights into gamblers' lived experiences and motivations. Further studies may also examine additional predictors such as impulsivity, emotional regulation, financial stress, and social support, which have been shown to influence gambling behaviour and psychological wellbeing.

Finally, comparative research exploring differences between online gamblers and land-based gamblers may reveal important behavioural and psychological distinctions, particularly as digital gambling platforms continue to expand across Africa.

References

- Anglim, J., Horwood, S., Smillie, L., Marrero, R., & Wood, J. (2020). Predicting psychological and subjective well-being from personality: A meta-analysis. *Psychological Bulletin*, 146(4), 279–323.
- Bandura, A. (1997). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215.
- Blaszczynski, A., & Nower, L. (2022). A pathways model of problem and pathological gambling. *Addiction Research & Theory*, 30(3), 161–175.
- Blaszczynski, A., & Nower, L. (2022). A pathways model of problem and pathological gambling. *Addiction*, 97(5), 487–499.
- Bonnaire, C., & Barrault, S. (2019). Are online gamblers different from offline gamblers? *Journal of Gambling Studies*, 35, 597–611.
- Cohen, J., Cohen, P., West, S., & Aiken, L. (2018). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Routledge.

- Costa, P. T., Jr., & McCrae, R. R. (2012). Revised NEO Personality Inventory (NEO PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual. Psychological Assessment Resources.
- DeNeve, K. M., & Cooper, H. (2018). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*, 124(2), 197–229.
- Dowling, N. A., Merkouris, S. S., Greenwood, C. J., Oldenhof, E., Toumbourou, J. W., & Youssef, G. J. (2021). Early risk and protective factors for problem gambling: A systematic review. *Clinical Psychology Review*, 87, 102037.
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage.
- Gainsbury, S. (2019). Gambling-related harm: Current knowledge and future directions. *International Gambling Studies*, 19(3), 397–404.
- Hing, N., Russell, A. M., Browne, M., & Rockloff, M. (2022). The determinants of gambling risk and problem gambling among sports bettors. *Journal of Behavioral Addictions*, 11(1), 1–14.
- Infurna, F. J., & Gerstorf, D. (2020). Perceived control relates to better functional health and lower mortality. *Psychological Science*, 31(6), 728–740.
- Kotov, R., Gamez, W., Schmidt, F., & Watson, D. (2020). Linking “big” personality traits to anxiety, depressive, and substance use disorders: A meta-analysis. *Psychological Bulletin*, 136(5), 768–821.
- Lachman, M. E., & Weaver, S. L. (2018). The sense of control as a moderator of social class differences in health and well-being. *Journal of Personality and Social Psychology*, 74(3), 763–773.
- Lachman, M. E., Neupert, S. D., & Agrigoroaei, S. (2021). The relevance of control beliefs for health and aging. *Handbook of the Psychology of Aging*, 8, 175–190.
- Lahey, B. B. (2022). Public health significance of neuroticism. *American Psychologist*, 77(4), 521–533.
- Maxwell, S. E., & Delaney, H. D. (2014). *Designing experiments and analyzing data: A model comparison perspective* (2nd ed.). Lawrence Erlbaum Associates.
- Maxwell, S. E., Delaney, H. D., & Kelley, K. (2018). *Designing experiments and analyzing data: A model comparison perspective* (3rd ed.). Routledge.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80(1), 1–28.
- Taylor, S. E., & Brown, J. D. (2018). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103(2), 193–210.