

The Impact of Metacognition and Grit on Resilience in Working Professionals

Shruti Rekhi^{1*}

ABSTRACT

The aim of this paper is to investigate the impact of metacognition and grit on resilience in working professionals. While the existing literature has examined the individual contributions of metacognition, grit, and resilience to professional success and well-being, limited research has explored the predictive patterns of metacognition and grit on resilience. The study used a sample of 153 working professionals and adopted a correlational research design followed by multiple regression analyses. The findings reveal a significant positive relationship between metacognition, grit, and resilience, with grit emerging as a robust predictor of resilience. A small sample size and reliance on self-report measures are some potential limitations of the study. The implications of this study could be used to enhance resilience in the organizational setting.

Keywords: *Metacognition, Grit, Resilience, Working Professionals, Multiple Regression Analysis, Moderation Analysis*

In recent years, organizational stress management has gained a fair amount of attention amongst employers and employees alike. Consequently, the adoption of resilience building strategies as coping mechanisms for employee stress have also become immensely popular. To date, no study, as far as the available literature indicates, has investigated how metacognition and grit predict resilience in employees. The present research aims to explore the predictive role of grit and metacognition in the levels of metacognition among working professionals.

Throughout the years, resilience has been seen both as a unique personality trait as well as a cluster of multiple personality traits. Typically, resilience is seen as the ability to “bounce back” from the phase of stress. Modern workers face increasing stressors making workplace crises more frequent and severe (Williams et al., 2017). Being able to recover from these challenges is essential. Research shows that resilient individuals experience various benefits, such as improved well-being, better mental health, greater life satisfaction, and increased confidence (Liu et al., 2017; Mayordomo et al., 2016). Metacognition, often defined as “thinking about thinking,” involves an awareness of one’s cognitive processes. Metacognition can be seen as a skillset that utilizes cognitive resources to manage both internal and external environments, encompassing material and social contexts (Ackerman

¹Student, Amity Institute of Psychology and Allied Sciences, Amity University, Noida, UP, India

*Corresponding Author

Received: May 1, 2024; Revision Received: May 21, 2024; Accepted: May 24, 2024

and Thompson, 2017). Grit refers to an individual's inclination to persist in tackling challenges and sustain effort and interest despite encountering failure, adversity, or periods of stagnation. Employers recognize the practical relevance of grit in the hiring process, considering it more than just a theoretical concept (Butz et al., 2019).

THEORETICAL FRAMEWORK

A developmental model of resilience focusing on the mind, heart, soul, and body signifies that resilience is a comprehensive construct. According to the model, mental toughness, physical endurance, emotional balance, and purpose are all important resilience components. The same is applied in organizations to build effective resilience strategies (McEwen, K., 2011).

The term "metacognition" was introduced by John Flavell (1976) in his influential work "Metacognitive Aspects of Problem Solving". He also acknowledged metacognition as having three interconnected functional components: metacognitive monitoring, metacognitive regulation or control, and metacognitive knowledge. Jacobs and Paris (1987) defined different types of metacognitive awareness as declarative, procedural, and conditional knowledge (Jacobs and Paris, 1987). Declarative knowledge encompasses knowledge "about" various topics, procedural knowledge involves knowing "how" to carry out tasks, while conditional knowledge relates to understanding the "why" and "when" aspects of cognition.

Grit comprises two key aspects: perseverance and consistency of effort (Duckworth and Quinn, 2009). Perseverance entails working hard and persisting in endeavors despite setbacks or difficult circumstances, while consistency of interest involves maintaining stable long-term goals. Although some research has explored these facets separately (Disabato et al., 2018), most empirical studies treat grit as a single construct, as we do here.

REVIEW OF LITERATURE

The relationship between grit and resilience has gained attention, suggesting that individuals with grit employ adaptive metacognitive processes to effectively regulate their thoughts and emotions, contributing to their overall resilience (Duckworth & Peterson, 2007; Beer & Moneta, 2012). The current body of research on metacognition, grit, and resilience offers a complex exploration of their interconnections.

The current literature has identified a direct relationship between grit and resilience in varied contexts. For instance, efforts have been made to examine the role of grit as a resilience factor in mitigating school burnout and associated psychosocial problems among adolescents. Results confirmed positive associations between varied contexts like school burnout, loneliness, and depressive symptoms and grit as a resilience factor. (Tang, 2021). Another study (Musso et al., 2019) aimed to investigate the relationship between grit and resilience in emergency medical service (EMS) personnel. With a sample size of 84 EMS personnel, results revealed a significant relationship between grit and resilience, highlighting the predictive role of grit in the resilience of high-stress professions like emergency medical services. Yet another study aimed to examine the relationship between grit and resilient personality traits (Caza et al., 2020). Despite the study's significant findings indicating a modest positive association between grit and resilience, it revealed that grit was not directly related to other resilient personality traits like hardiness. Interestingly, grit's frequent associations with resilience have led some researchers to even use grit interchangeably with resilience (Duckworth, 2017; Price, 2019). Nonetheless, no studies have been conducted to

The Impact of Metacognition and Grit on Resilience in Working Professionals

study if grit can predict resilience in working professionals. The present research aims to address the same.

A secondary research aimed to provide an integrative review of metacognitive constructs and their implications for stress and resilience (Suominen, 2020). The research revealed that sound metacognition may function as a resilience mechanism, curbing the detrimental effects of stress. Another study aimed to explore how adaptive metacognitive self-regulation contributes to resilience, specifically among high-profile executives using semi-structured interviews (Beer & Moneta, 2012). Results of the study revealed that participants predominantly employed adaptive metacognitive modes of information processing, as outlined in Wells and Matthews' model. This indicates their capacity to effectively regulate their thoughts and emotions, thereby preventing potentially maladaptive metacognitive processing.

There is also some existing literature that has studied metacognition and grit as each other's predictors in various contexts. For instance, a 2022 study aimed to explore the antecedents and consequences of grit among working adults from a transpersonal psychology perspective (Agrawal et al., 2022). The hypothesis for this study was that transpersonal capital (metacognition and optimism) predicts grit which, in turn, predicts job satisfaction and job performance. Results supported the hypothesized relationships, with grit positively correlated with metacognition ($r = 0.662$, $p < 0.01$), optimism, job satisfaction, and performance. On the contrary, another study investigated the predictive role of grit on metacognition among Turkish university students. (Arslan et al., 2013). With a sample of 352 university students, the results indicated a positive association between grit and metacognition, with specific facets of grit predicting metacognition positively.

METHOD

Aim

To investigate the impact of metacognition and grit on resilience in working professionals.

Objectives

- To assess the relationship between metacognition, grit, and resilience in working professionals.
- To investigate the predictive relationship between metacognition and resilience in working professionals.
- To investigate the predictive relationship between grit and resilience in working professionals.

Hypothesis

- There is a significant relationship between metacognition, grit, and resilience in working professionals.
- Metacognition is a significant predictor of resilience in working professionals.
- Grit is a significant predictor of resilience in working professionals.

Sample Technique

For the present study, convenience sampling was used to collect data from 153 working professionals. This study focuses on working professionals as the sample population due to a notable gap in the existing literature regarding insufficient research on resilience, metacognition, and grit specifically in employees.

Inclusion Criteria

- Participants who provide voluntary consent to participate.
- Working professionals.

Exclusion Criteria

- Non-working professionals or individuals not currently employed.
- Individuals who do not consent to the use of their anonymized responses for research purposes.

Description of the tools

The 12-item Short Grit Scale developed and validated by Duckworth & Quinn (2009) was used to assess the variable of grit in working professionals. The scale evaluates the consistency of interest and perseverance of effort with 6 items assigned to each component. The scale has an administration time of five minutes and is applicable to assess on ages 10 and above. Respondents utilize a 5-point Likert scale, ranging from "not at all like me" to "very much like me," to assess items. The scale exhibits robust internal consistency with a high Cronbach's alpha coefficient of 0.85.

To assess the metacognition of employees, a shortened version of the 52-item Metacognitive Awareness Inventory (MAI) (Schraw, G. & Dennison, R.S., 1994) was used. González et al. (2022) compared different versions of the MAI Shortened Version with 19 items to the original MAI. The only shortened version that achieved a good fit was the one that distinguished between knowledge and regulation of cognition. The two scales, Knowledge of Cognition and Regulation of Cognition, were strongly correlated (latent correlation = .83). They also showed good convergent validity ($r = .52-.71$), discriminant validity (HTMT = .82), high criterion validity related to academic achievement, high test-retest reliability (Knowledge of Cognition: $r = .754$, $p < .001$; Regulation of Cognition: $r = .820$, $p < .001$), and high internal reliability (Knowledge of Cognition: $\alpha = .817$; Regulation of Cognition: $\alpha = .817$).

The Brief Resilience Scale (BRS) developed by Smith et al. (2008) was used to assess the resilience levels of the subjects. It is a 6-item scale with responses varying from 1 (strongly disagree) to 5 (strongly agree) on a 5 point likert scale. 3 items in the scale are positively worded (1,3, and 5), while the other 3 are negatively worded (2,4, and 6). The psychometric properties of BRS were confirmed by assessing it on 4 samples (128 undergraduate students; 64 undergraduate students; 112 cardiac rehabilitation patients; 50 women with fibromyalgia or healthy controls). The scale displays good internal consistency (.80 - .91), and test retest reliability (.62 - .69). Finally, it was also found to be positively correlated with optimism and purpose in life, and negatively correlated with pessimism and alexithymia.

Statistical Analysis

Correlation amongst the three study variables, metacognition, grit, and resilience, was calculated. Further, to examine the quantitative data for understanding the predictive role of metacognition and grit in resilience, multiple regression analysis was used.

RESULTS

To test the formulated hypothesis, correlation and multiple regression analysis was conducted on the collected data.

The Impact of Metacognition and Grit on Resilience in Working Professionals

Table 1 shows the descriptive statistics and correlations between grit, metacognition, and resilience. There was a positive statistically significant correlation between the two predictive variables ($r = .76$), and each with the criterion variable ($r = .62$, $r = .49$). Thus, the first hypothesis is retained.

Table 1: Descriptive Statistics And Correlations Between Study Variables

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3
Grit	153	3.35	.77	—		
Metacognition	153	15.1	5.1	.76*	—	
Resilience	153	3.01	.81	.62*	.49*	—

* $p < .01$

Table 2 demonstrates the regression coefficients for predicting resilience in working professionals. The metacognition of working professionals was not a significant predictor of their resilience levels, $\beta = .044$, $t(152) = .444$, $p = .658$. This means that the resilience levels of a working professional is barely changed by his metacognition levels. Therefore, the second hypothesis is rejected.

The predictor variable of grit was a strong predictor of resilience in working professionals, $\beta = .585$, $t(152) = 5.928$, $p < 0.001$. This means the resilience levels of a working professional increases by nearly 6 units for a unit increase in his grit levels. Therefore, the third hypothesis is retained.

Table 2: Regression Coefficients for Predicting Resilience In Working Professionals

Variable	B	SE	t	95% CI		p
				LL	UL	
Grit	.62	.10	5.93	.41	.82	.000
Metacognition	.01	.02	.44	-.02	.04	.658

Note. N = 153; CI = confidence interval; LL = lower limit; UL = upper limit.

DISCUSSION

The findings indicated several significant relationships and predictive patterns, aligning with existing literature in the field. The study utilized correlation multiple regression analysis to fulfill its aim. Consistent with Hypothesis 1, the results demonstrated a significant positive relationship between metacognition, grit, and resilience among working professionals. This finding corroborates prior research suggesting the same (Duckworth & Peterson, 2007; Beer, N., & Moneta, G. B., 2012).

Contrary to Hypothesis 2, the regression analysis revealed that metacognition was not a significant predictor of resilience among working professionals. This finding contrasts with some previous studies suggesting a direct link between metacognitive abilities and resilience (Agrawal et al., 2022; Suominen, 2020; Matthews et al., 2019; Beer et al., 2012). Variations in demographic factors such as age, work experience, and employment sector could influence the strength of this relationship. In addition, the measures used to assess metacognition and resilience in your study may have differed from those used in previous research, leading to variations in the observed relationships.

In line with Hypothesis 3, grit emerged as a robust predictor of resilience in working professionals. This result aligns with existing literature emphasizing the crucial role of grit

The Impact of Metacognition and Grit on Resilience in Working Professionals

in fostering resilience across various contexts ranging from school going adolescents to EMS personnel (Tang, 2021; Musso et al. 2019; Caza, et al.,2021). The resilience-promoting aspect of grit is particularly relevant in the context of the workplace, where employees are often confronted with demanding tasks, interpersonal conflicts, and organizational changes.

Implications

Understanding the roles of grit and metacognition in fostering resilience can inform the development of targeted interventions and training programs for enhancing resilience among working professionals. Employers and organizational leaders can leverage insights from this study to implement resilience-building strategies that focus on nurturing grit and fostering metacognitive skills among employees. Recognizing the significance of grit in predicting resilience highlights the need for HR practices that assess and cultivate grit as part of talent management and employee development initiatives.

Limitations

The reliance on self-report measures may introduce response biases and affect the accuracy of the findings. The relatively small sample size of 153 working professionals may limit the generalizability of the results to broader populations. Future research should aim to address the research limitations by employing objective measures and larger sample sizes to enhance the validity and reliability of the findings.

It is recommended to conduct further research to explore the specific mechanisms through which metacognition influences resilience in the workplace, potentially through qualitative studies or experimental designs. It is also recommended to consider longitudinal studies to examine the long-term effects of grit and metacognition on resilience and professional outcomes among working professionals.

CONCLUSION

The purpose of the current study was to understand how metacognition and grit have an impact in predicting the levels of resilience in working professionals. Data from 153 working professionals in diverse backgrounds was analyzed and interpreted. While grit emerged as a robust predictor, the direct influence of metacognition on resilience was inconclusive. Nonetheless, limitations such as reliance on self-report measures and a modest sample size underscore the need for caution in interpreting the results. Future research should aim for larger, more diverse samples and consider objective measures to strengthen the validity and generalizability of findings. Despite these constraints, our study contributes to understanding the psychological underpinnings of resilience in the workplace, laying the groundwork for further exploration and practical application in organizational contexts.

REFERENCES

- Ackerman R, Thompson V (2017). Meta-Reasoning: Shedding meta-cognitive light on reasoning research. L. Ball & V. Thompson (Eds.), *The Routledge International Handbook of Thinking & Reasoning* (pp.1-15). Psychology Press.
- Agrawal, D., Chukkali, S., & Singh, S. (2022). Antecedents and consequences of grit among working adults: a transpersonal psychology perspective. *Frontiers in Psychology*, 13, 896231.
- Arslan, S., Akin, A., & Çitemel, N. (2013). The predictive role of grit on metacognition in Turkish university students. *Studia Psychologica*, 55(4), 311.
- Beer, N., & Moneta, G. B. (2012). Adaptive metacognitive self-regulation and functional resilience-related assets in the midst of challenging tasks: A qualitative analysis.

The Impact of Metacognition and Grit on Resilience in Working Professionals

- Butz, N. T., Stratton, R., Trzebiatowski, M. E., and Hillery, T. P. (2019). Inside the hiring process: how managers assess employability based on grit, the big five, and other factors. *International Journal of Business Environment*, 10, 306–328.
- Caza, A., Caza, B. B., & Baloochi, M. E. (2020). Resilient personality: is grit a source of resilience. *Research handbook on organizational resilience*, 25-38.
- Disabato, D.J., Goodman, F.R. and Kashdan, T.B. (2018). Is grit relevant to well-being and strengths? Evidence across the globe for separating perseverance of effort and consistency of interest. *Journal of Personality*, 87(2).
- Duckworth, A.L. (2017). *Grit: Why passion and resilience are the secrets to success*. Harmondsworth: Penguin.
- Duckworth, A. L., and Quinn, P. D. (2009). Development and validation of the Short Grit Scale (GRIT– S). *Journal of personality assessment*, 91(2), 166-174.
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: perseverance and passion for long-term goals. *Journal of personality and social psychology*, 92(6), 1087.
- Flavell, J. H. (1976). Metacognitive aspects of problem solving. *The Nature of Intelligence*. NY: Academic New York.
- González Cabañes, E., García Fernández, T., Álvarez García, D., Fernández Alba, M. E., & Rodríguez Pérez, C. (2022). Validation of the shortened version of the metacognitive awareness inventory in Spanish university students. *Psicothema* 34(3) 454-462.
- Jacobs, J., & Paris, S. (1987). Children's metacognition about reading. Issues in definition, measurement, and instruction. *Educational Psychologist*, 22, 255-278. doi:10.1207/s15326985ep2203&4_4
- Liu Q, Jiang M, Li S, Yang Y. Social support, resilience, and self-esteem protect against common mental health problems in early adolescence: A nonrecursive analysis from a two-year longitudinal study. *Medicine (Baltimore)*. 2021 Jan 29;100(4):e24334. doi: 10.1097/MD.00000000000024334. PMID: 33530225; PMCID: PMC7850671.
- Mayordomo-Rodríguez, Teresa & Viguer, Paz & Sales-Galán, Alicia & Satorres, Encarnación & Melendez, Juan. (2016). Resilience and Coping as Predictors of Well-Being in Adults. *The Journal of Psychology*. 150. 809-821. 10.1080/00223980.2016.1203276.
- McEwen, K. (2011). *Building resilience at work*. Australian academic press.
- Musso, M., Tatum, D., Hamer, D., Hammarlund, R., Son, L., & McMahon, P. (2019). The relationship between grit and resilience in emergency medical service personnel. *Ochsner Journal*, 19(3), 199-203.
- Price, J.P.B. (2019). Testing construct redundancy: Resilience, grit, hardiness, and mental toughness (MSc). Saint Mary's University, Halifax, NS.
- Schraw, G. & Dennison, R.S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19, 460-475.
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15, 194-200.
- Suominen, P. (2020). An Integrative Conceptualization of Metacognitive Constructs: Implications Toward Stress and Resilience. Available at SSRN 3721233.
- Tang, X., Upadaya, K., & Salmela-Aro, K. (2021). School burnout and psychosocial problems among adolescents: Grit as a resilience factor. *Journal of Adolescence*, 86, 77–89. <https://doi.org/10.1016/j.adolescence.2020.12.002>
- Williams, Trenton & Gruber, Daniel & Sutcliffe, Kathleen & Shepherd, Dean & Zhao, Eric Yanfei. (2017). *Organizational Response to Adversity: Fusing Crisis Management*

The Impact of Metacognition and Grit on Resilience in Working Professionals

and Resilience Research Streams. *The Academy of Management Annals*. 11. 10.5465/annals.2015.0134.

Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Rekhi, S. (2024). The Impact of Metacognition and Grit on Resilience in Working Professionals. *International Journal of Indian Psychology*, 12(2), 359-366. DIP:18.01.448.20241202, DOI:10.25215/1202.448