

***The Mediating Role of Emotional Stability Between Critical Thinking Disposition and Self-Knowledge Among Management Students***

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The Asian Conference on Education 2022  
Official Conference Proceedings

**Abstract**

This study aims to examine the mediating role of emotional stability between critical thinking disposition (Critical openness & Reflective Skepticism) and self-knowledge of the students in a private management institution, in India. A questionnaire survey method was employed to collect data from 384 students enrolled in the management course. SPSS and AMOS software was used to perform data analysis, and the hypotheses were tested using confirmatory factor analysis and structured equation modeling. The results revealed a significant indirect effect of the impact of critical openness (0.108,  $p=0.001$ ), reflective skepticism (0.063,  $p=0.001$ ) on self-knowledge was positive and significant. Furthermore, (a) the direct effect of critical openness on self-knowledge in presence of the mediator was also found significant (0.122,  $p=0.000$ ). Hence, emotional stability partially mediated the relationship between critical openness and self-knowledge. (b) The direct effect of reflective skepticism in presence of the mediator was found insignificant (-0.006,  $p=0.855$ ). Hence, emotional stability fully mediated the relationship between reflective skepticism and self-knowledge. The study highlights the missing link between academia and industry in the management educational context. Hence, it has practical implications for management students in really pursuing critical thinking disposition, emotional stability, and self-knowledge to get the industry to connect.

Keywords: Critical Openness, Reflective Skepticism, Emotional Stability, Self-Knowledge

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## Introduction

In the recent decade, potential employers expect business graduates to possess critical thinking skills for making appropriate decisions in the business. (Kumar, 2020) finds that the gap exists in employability skills among management students. As graduating students are concentrating more to obtain high academic grades during their graduation time, as a result of this attitude the students have less skill and tolerance and they are not able to sustain their job. To fill the gap between college and corporate, incorporating more challenging major subjects in the curriculum needs to be made, which enhances the critical thinking and soft skills of students. For this purpose, higher education program needs to include critical thinking in the curriculum (Bandyopadhyay & Szostek, 2018). Critical thinking is not only a skill needed for making appropriate business decisions but also one of the life skills. As per the Quality Mandate of the University Grant Commission (UGC) 2019, Life skills play an important role in increasing the employability as well as self-esteem of the students. It is always said that life skills are the core skills each individual must acquire and inculcate internally as well as externally for the betterment of self and others. Hence, most business management programs consider these skills as an important student learning goal. These multidimensional perspectives on students' academics contribute to their perceptions of preparedness for the transition from university to work. The learning experiences such as career-related experience and employability skills help graduates in the transition to work (García-Aracil et al., 2021).

“Critical thinking is based on two assumptions: first, that the quality of our thinking affects the quality of our lives, and second, that everyone can learn how to continually improve the quality of his or her thinking” (Paul 1993:23). Management students having a moderate level of skills can go to the next level while demonstrating their positive attitude and behaviors along with thinking skills (Selvam & Rozario, 2016). By giving creative thinking training to the students, their critical thinking can also be promoted (Khoorchani et al., 2019). The critical thinking elements such as inference, analysis, interpretation, and evaluation help students to provide solutions and solve problems based on the phenomenon or problem they choose (Scientists, 2019) Students' critical thinking patterns were oriented to analytic thinking skills thus, the students analyze the phenomena around them by exposing evidence and reason to provide solutions according to the information and knowledge they get.

In today's scenario, an individual needs multi-tasking skills to sustain and gain employment rather than being good at one skill (Ganesan & Ganesan, n.d.). Hence to sustain in this competitive world, we need to train the students to manage their emotions (Ajhar & Wahed, n.d.) Based on that, the mental health of the students also gets improved. As parents and teachers, everyone pay more attention to how students behave than how they are feeling; many of their emotions get overlooked. An emotionally stable student will maintain their focus on things no matter how difficult or challenging it is (George & Mampilly, 2012). Particularly, emotionally stable students have effective team behaviors and interpersonal skills. Also, emotional competence is a significant predictor of career judgments and emotional stability is a predictor of career concerns in young adolescents (Bubić & Ivanišević, 2016). Through evaluative judgments, students were able to judge the work themselves and others (Panadero et al., 2019) thus developing knowledge about their assessment capability. Self-awareness provides one with greater Self-knowledge and it is perceived to be the output of Self-awareness and the foundation for self-improvement. (Carden et al., 2022) defines Self-awareness as:

Self-awareness consists of a range of components, which can be developed through focus, evaluation, and feedback, and provides an individual with an awareness of their internal state (emotions, cognitions, physiological responses), that drives their behaviors (beliefs, values, and motivations) and an awareness of how this impacts and influences others.

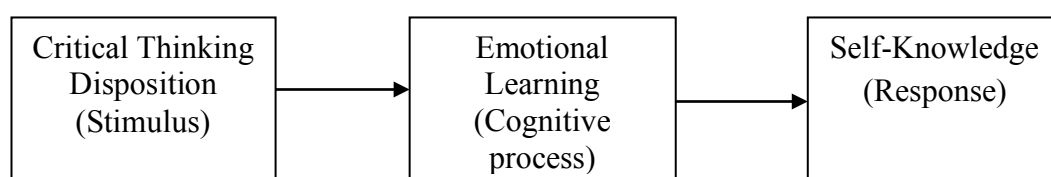
Pandemic situations made employers need to increase to meet the industry standards. Employers expect MBA graduates' ability to think critically and it becomes more important than ever before. Many researchers attempt to study the effects of self-related dimensions such as self-concept, self-efficacy, self-esteem, self-regulation, and many more. Only a few attempts were made to analyze the self-knowledge of the students'. It is unclear from the previous research whether personality trait emotional stability plays a mediating role in the relationship between disposition toward critical thinking and self-knowledge in MBA students. The main aim of this study is to examine these associations in management students.

The objectives of the study are,

- To investigate the influence of critical thinking disposition (critical openness and reflective skepticism) on students' self-knowledge.
- To study the impact of emotional stability on students' self-knowledge.
- To test the mediating role of emotional stability between critical thinking disposition (critical openness and reflective skepticism) and students' self-knowledge.

## Background Theory

The prevailing psychological theory in the 1930s was behaviorism which occurred externally as a result of a subject's interaction with external events and actions. According to Psychologist Jean Piaget, who first developed the cognitive psychology theories at the time, focused on mental processes that occurred internally, rather than behaviorism. He also viewed that human subjects not only react to the things around them (Stimuli → Response) but also process and store information related to those things (Cognitive process). In this context, the basis for the interpretation of learning involves cognitive processes and activities such as processing information, mental representations, guesses, and expectations (Çeliköz et al., 2016). Jean Piaget in his book "Understand is to Invent", states that understanding results from discovery, and an individual will be got stuck in repetition without understanding. Thus, Cognitive Learning theory explains why a student needs to understand their thinking process, and knowledge in making the right decisions through critical thinking elements such as inference, interpretation, analysis, and evaluation, but also learns how to balance their emotions which has a greater impact on cognitive functions. We use this theory to frame the conceptual model which links the Stimulus (critical thinking dispositions such as critical openness and reflective skepticism) to Response (self-knowledge) along with the cognition process mediation of emotional stability.



## Literature Review

### Critical Thinking Disposition and Self-Knowledge

(Fasko, 2003, p.8) defines critical thinking as “the propensity and skills to engage in activity and ‘mental activity’ with reflective skepticism focused on deciding what to believe or do.” (Sosu, 2013) identified that the disposition toward critical thinking has two dimensions – critical openness and reflective skepticism. A person’s critical openness involves generating new ideas, evaluating ideas, and being prepared to modify one’s views in light of the evidence. A person’s willingness to learn from experience and to question the evidence is referred to as reflective skepticism. (Sosu, 2013) also finds critical thinking includes both skill and dispositional dimensions. A person’s willingness to apply acquired skills in solving a problem or decision to be made is referred to as disposition dimensional (Facione, 1990). Whereas the skill dimension is the ability of a person to understand problems and develop reasoned solutions. The skill dimension consists of the abilities such as analysis, interpretation, and conclusion (Chan, 2019).

In a rapidly changing business world, critical thinking plays a significant role in all disciplines. The study (Nakatani & Wynekoop, 2020) states that the exercises designed to replace the instructor with student self-reflection help to improve students' critical thinking skills. Hence the instructors do not need to provide customized feedback to each student. (Prakoso et al., 2021) found a positive relationship between creativity and critical thinking disposition. These two factors also positively influenced the academic performance of the students. Several recent studies have examined this relationship in the educational context. From the study, researchers conclude that the higher a person’s creativity, the higher their critical thinking skills.

(Lailiyah & Wediyantoro, 2021) identified three factors, namely confidence in critical thinking, valuing critical thinking, and misconception by exploring students’ attitudes and beliefs toward critical thinking skills. The study shows that students have positive attitudes toward confidence in critical thinking and valuing critical thinking and there was no student misconception of critical thinking. Though the students show a positive perception of attitude and belief, they tend to lack confidence. The perceptions, interpretations, and judgments of a person can be influenced by their self-knowledge. Regardless of the importance of students’ attitudes toward confidence in critical thinking, valuing critical thinking, (Arisoy & Aybek, 2021) identified a positive influence of critical thinking education on students’ perceptions. (Adnan et al., 2021) further finds that college students’ cognitive and critical thinking ability seems effectively improved through the inquiry-based-learning model in the higher education course. This allows students to gain an analytical thinking level and respond to a certain inquiry through deep thinking and go beyond mere description. Hence the following hypotheses are proposed:

H1: Critical openness of critical thinking disposition will positively and significantly enhance the self-knowledge of students.

H2: Reflective skepticism of critical thinking disposition will positively and significantly enhance the self-knowledge of students.

## **Critical Thinking Disposition, Emotional Stability, and Self-Knowledge**

According to (Fajari & Chumdari, 2021), students' critical thinking skills were low due to several factors which were originating mainly from the students and teachers themselves. (Álvarez-Huerta et al., 2022) emphasizes that the greater the students' critical thinking disposition, the stronger their creative self-concept. It also indicates students tend to be more open to new ideas. (Lin & Jain, 2018) Being reflective practitioners, student teachers can develop their sense of self-knowledge through peer and mentor assessment practice.

One of the Big Five personality traits emotions plays an important role in several aspects of a student's life such as anxiety, panic or fear, distress, and any other positive and negative emotions. According to their study, (Bernoster et al., n.d.) Identified a result of positive and negative affect from the experiences of someone through their positive or negative feelings and emotions. The study further examined that there exists a positive association between positive affect and entrepreneurial orientation whereas negative affect is negatively associated with entrepreneurial orientation. A study among undergraduate students (Joy, 2020) identified personality traits as a predictor of critical thinking ability in university students. Among the personality traits, openness has the highest prediction of critical thinking. And emotional instability (neuroticism) has the lowest prediction of critical thinking among the students. The study by (Test et al., 2017) states that there is no significant difference in the emotional stability of students concerning their type of school and their gender as well. Other literature (Ajhar & Wahed, n.d.) Also reveals that there is no significant difference between the levels of emotional stability of boys and girls. (Ajhar & Wahed, n.d.). In the research, (Clem et al., 2021) examined there is a strong association between two factors - self-concept of ability and achievement emotions of students. The teacher-student relationship plays a crucial role in these two factors. A better teacher-student relationship in the classroom would help to involve students during the teaching and learning process, through the openness personality trait than emotional instability.

According to the study, (Tahmasb et al., 2008) concludes that there exists a positive relation between Big Five factors and Self-reported Integrated Self-knowledge (ISK). Students' adaptive factors and inner psychological experience were determined by Big Five factors such as Emotional Stability and Openness to experience. These two factors prove to be the most noteworthy and consistent Big Five predictors of ISK from the study. The student's critical thinking and self-regulation have a positive relation to social-emotional learning, and self-regulation has both direct and indirect effects on students' social-emotional learning (Aslan, 2018). Hence these three factors – critical thinking disposition, emotional stability, and self-knowledge as a whole constitutes produce consummate MBA professionals. From the literature, the following hypotheses are proposed:

H3: There is a significant relationship between critical openness and emotional stability.

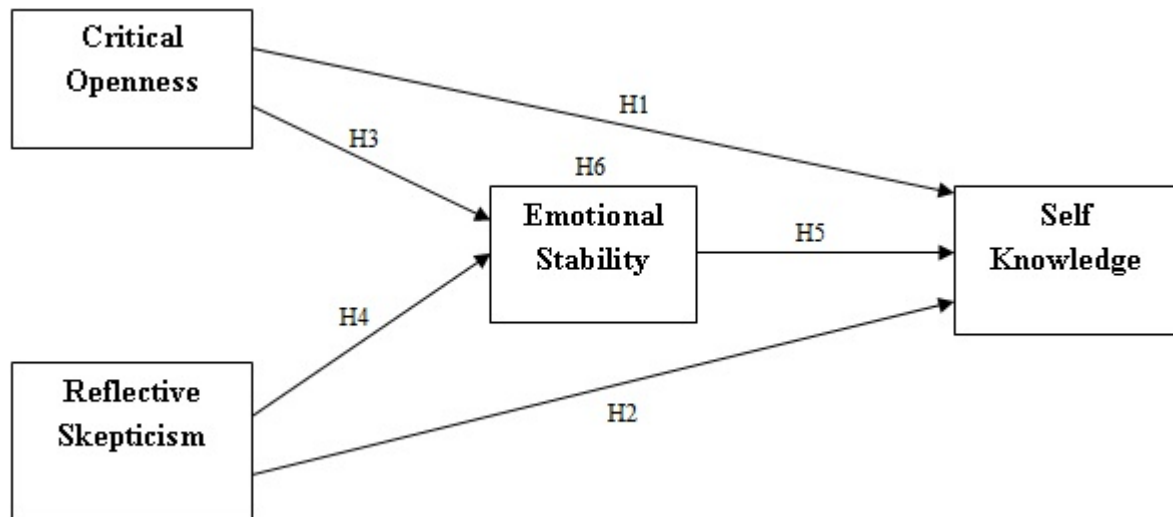
H4: There is a significant relationship between reflective skepticism and emotional stability.

H5: There is a significant relationship between emotional stability and self-knowledge.

H6: Emotional stability can have a mediating effect on the relationship between critical thinking disposition (critical openness and reflective skepticism) and a student's self-knowledge.

## Proposed Research Model

The primary aim of the proposed model was to examine whether the Big Five personality trait - emotional stability plays a mediating role in the relationship between the critical thinking disposition (critical openness, reflective skepticism) and students' self-knowledge. The study expected to find that students who have a stronger critical thinking disposition, also enhance their self-knowledge along with the impact of emotional stability. And in some cases, students enhance their self-knowledge if they practice controlling their emotions along with a critical thinking disposition.



## Methods

Participants in the study were 384 students who were enrolled in the management course affiliated with Bharathiar University in the Coimbatore region. Out of 384 students, 200 were male students and 184 were female students. The data was collected among the final year MBA students and their ages ranged from 21 to 23 years. Students were selected through a simple random sampling method and data collection was made through the questionnaire. The final-year students who are nearing their placement activities and ready for the transition from college to work were the main focus of this study.

## Measures Used

**1. Critical thinking disposition:** This measurement adopted a critical thinking disposition scale from (Bravo et al., 2020) (Sosu, 2013), which comprises 11 items. Here 7 items were for critical openness (e.g. I usually try to think about the bigger picture during a discussion) and 4 items for reflective skepticism (e.g. I often re-evaluate my experiences so that I can learn from them). Each item is rated on a 5-point Likert scale (1 = totally disagree; 5 = totally agree).

**2. Emotional Stability:** This measurement adopted an emotional stability scale from (Li & Ahlstrom, 2016), which comprises 10 items (e.g. Can you recover from unhappiness quickly and not be influenced by it?). Each item is rated on a 6-point Likert scale (1 = totally disagree; 6 = totally agree).

**3. Self-Knowledge:** This measurement adopted an integrative self-knowledge scale from (Ghorbani et al., 2008), which comprises 12 items (e.g. By thinking deeply about myself, I

can discover what I really want in life and how I might get it). Each item is rated on a 5-point Likert scale (1 = largely untrue; 5 = largely true).

## Results and Discussions

### (1) Findings from Descriptive Statistics and Correlation Analysis

Table I: Mean, Standard Deviation, Cronbach Alpha coefficient, and correlation coefficient

Variables	Mean	Std. Deviation	Cronbach alpha coefficient	1	2	3	4
1. Critical Openness	20.30	5.111	0.913	1			
2. Reflective skepticism	11.09	3.169	0.816	0.357***	1		
3. Emotional Stability	28.17	4.225	0.943	0.335**	0.274**	1	
4. Self Knowledge	46.23	6.525	0.925	0.367**	0.230**	0.584**	1
*** $p < 0.001$ ; ** $p < 0.01$							

Table I results, suggest that Cronbach's alpha coefficients calculated for critical thinking disposition (critical openness, reflective skepticism), emotional stability, and self-knowledge were found to range from 0.816 to 0.943. Due to the reliability factor, questions Q8, Q9, and Q10 of emotional stability have been removed. The results also indicate that the sample under study has a favorable perception of critical thinking disposition, emotional stability, and self-knowledge among MBA students. Also, the correlation coefficients for the variables under study, critical thinking disposition (critical openness, reflective skepticism), emotional stability, and self-knowledge were found to be positive and significant at a 0.001 and 0.01 level of significance.

(2) Findings from Confirmative Factor Analysis (CFA)

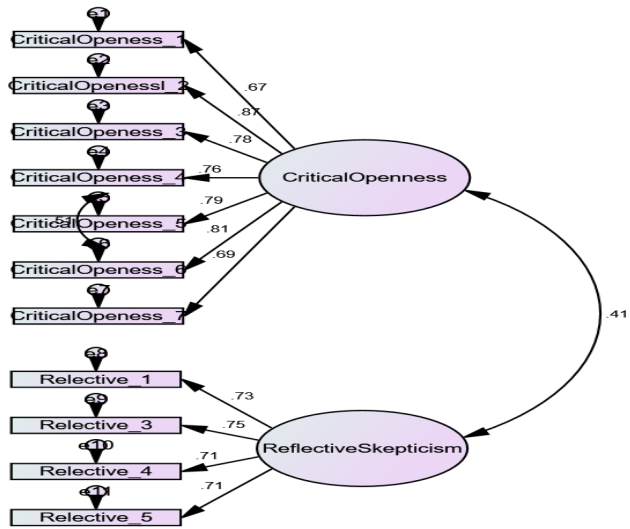


Figure 1: CFA for Critical Thinking Disposition (Critical Openness and Reflective Skepticism)

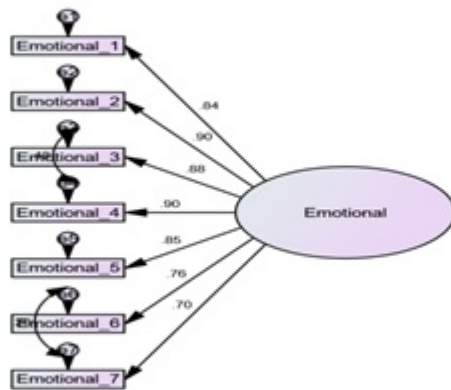


Figure 2: CFA for Emotional Stability



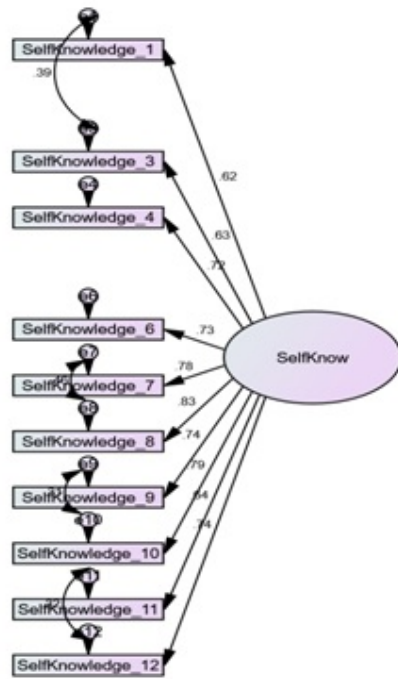


Figure 3: CFA for Self-Knowledge

Table II: CFA - Goodness of fit

Model	$\chi^2 / df$	GFI	AGFI	NFI	CFI	TLI	RMSEA
<b>Critical Thinking Disposition</b>	1.887	0.966	0.946	0.966	0.984	0.978	0.048
<b>Emotional Stability</b>	5.603	0.953	0.891	0.973	0.977	0.961	0.110
<b>Self Knowledge</b>	3.870	0.940	0.893	0.950	0.962	0.945	0.087

Table II result depicts the CFA test for critical thinking disposition (critical openness, reflective skepticism), emotional stability, and self-knowledge. The CFA for emotional stability are:  $\chi^2 / df = 5.603$ , GFI = 0.953, AGFI = 0.891, NFI = 0.973, CFI = 0.977, TLI = 0.961 and RMSEA = 0.110. Finally, the CFA for self-knowledge are:  $\chi^2 / df = 3.870$ , GFI = 0.940, AGFI = 0.893, NFI = 0.950, CFI = 0.962, TLI = 0.945 and RMSEA = 0.087. Questions Q2 and Q5 of self-knowledge have been removed due to poor loading from CFA. These indices confirm the hypotheses and sample fit. These values satisfy the reference values of the  $\chi^2 / df$  which range between 2 to 3, GFI, AGFI, NFI, CFI, TLI which lies between 0 to 1, and RMSEA value, which should be  $\leq 0.10$ . The overall fit indices of our measurement model are generally good, which indicates a good model fit. The model fitness output helps the researchers to proceed further with the path coefficients.

### (3) Findings from Structured Equation Modelling (SEM) and Hypothesis Testing

#### (3.1) To check for the mediation process

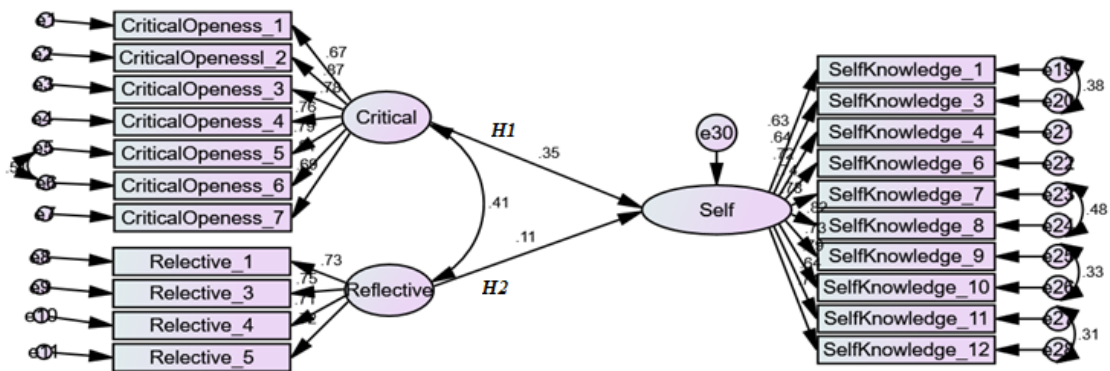


Figure 4: SEM for the direct effects of critical thinking disposition on self-knowledge

Table III: Hypotheses Tests (H1, H2, H3, H4 and H5)

Hypotheses	Effects	Standardized Regression Weights	P	Result
H1	CO – SK	0.345	***	Accepted
H2	RS – SK	0.11	*	Accepted
H3	CO – ES	0.285	***	Accepted
H4	RS – ES	0.199	**	Accepted
H5	ES – SK	0.572	***	Accepted

**Note:** CO – Critical Openness; RS – Reflective Skepticism; ES – Emotional Stability; SK – Self-Knowledge  
P < 0.001 (\*\*\*), P < 0.01 (\*\*), P < 0.10 (\*)

Table III result depicts the standardized direct effect of critical openness and reflective skepticism on self-knowledge ( $\beta = 0.345$ ,  $p = 0.001$ ;  $\beta = 0.11$ ,  $p = 0.10$ ), is positive and significant. Thus hypotheses H1 and H2 are both significant and accepted. Thus the critical thinking disposition (critical openness and reflective skepticism) has a direct impact on self-knowledge. So we can proceed with the mediation model. Table III also contains the values of standardized path coefficients of critical openness and reflective skepticism on emotional stability and also emotional stability values on self-knowledge. Hypothesis H3, critical

openness is positively related to emotional stability ( $\beta = 0.285, p = 0.001$ ). Hypothesis H4, reflective skepticism is positively related to emotional stability ( $\beta = 0.199, p = 0.01$ ). These findings find support in other similar studies (Wicaksana et al., 2020) that critical thinking activities not only have an impact on students' self-knowledge, further it also helps in enhancing other skill dimensional activities such as analysis, evaluation, and conclusion, which helps students to understand problems and develop reasoned solutions (Chan, 2019). Also concurrently it increases the student's well-being (Mertens et al., 2017). And, Hypothesis H5, emotional stability is positively related to self-knowledge ( $\beta = 0.572, p = 0.001$ ). This finding support results from other studies (Mohammad Amin Wani, 2016)(Kumaravelu, 2018)(Khurshid & Khurshid, 2018), wherein emotional stability plays a significant role in enhancing student's self-knowledge as well as helps in their overall academic performances(Wicaksana et al., 2020)(*European Journal of Educational Research*, 2021).

### (3.2) Test for Mediation

By using the bootstrapping procedure, the mediating effect of emotional stability explaining the relationships between critical thinking dispositions (critical openness and reflective skepticism) and self-knowledge were tested. The researchers conducted the bootstrapping method (Preacher & Hayes, 2008) using mediation with 5000 random samples using a 95% level of confidence. Table IV shows the result of the direct effect and indirect effects of mediation.

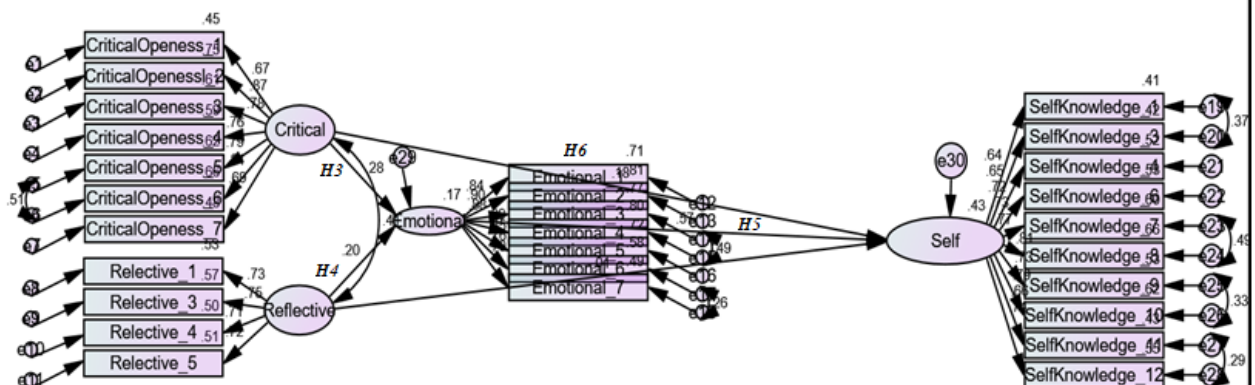


Figure 5: SEM for the impact of critical thinking disposition on self-knowledge through mediating role of emotional stability

### (3.2.1) Examining the indirect effect of critical thinking dispositions through emotional stability to the construct self-knowledge

As a first step, whether the mediation is present or not was checked. The indirect effect of critical openness to self-knowledge through emotional stability is found to be 0.108 and the indirect effect of reflective skepticism to self-knowledge through emotional stability is found to be 0.063. The indirect effect is known, but we still, need to know if the indirect effect is significant and if it falls within the 95% confidence interval generated by bootstrap. Through the results from Bias corrected percentile method link the lower bound (LB) and upper bound (UP) indirect effects were found to be LB = 0.071; UB = 0.157 for critical openness and LB = 0.036 and UB = 0.105 for reflective skepticism. Since there is no zero between the lower bound and upper bound confidence interval; it shows clearly that the indirect effect is significant. And also the value 0.001 and 0.000 at the intersection of critical thinking dispositions and self-knowledge shows two-tailed significance and both values were less than 0.05. Hence, concluded that emotional stability mediates between critical thinking dispositions and self-knowledge in which hypothesis H6 is accepted.

### (3.2.2) Assessing the type of mediation

Table IV: Assessing the type of mediation

Relationship	Direct Effect	Indirect Effect	Confidence Interval		P - value	Conclusion
			Lower Bound	Upper Bound		
Critical openness → Emotional stability → Self-knowledge	0.122 (0.000)	0.108	0.071	0.157	0.001	Partial mediation
Reflective skepticism → Emotional stability → Self-knowledge	-0.006 (0.855)	0.063	0.036	0.105	0.001	Full mediation

From table IV, it was identified that the direct effect of critical openness on self-knowledge in the presence of the mediator was found to be significant (0.122, P = 0.000). Hence, emotional stability partially mediated the relationship between critical openness and self-knowledge. Students are therefore amplifying existing knowledge by exposing them to disposition elements such as new ideas generation and lookout, evaluation of arguments, inference, deduction, and experiences. By practicing the cognitive process of balancing mental activities such as positive and negative emotions during their learning and decision-making process, students further increase their self-knowledge effectively and come out with a logical and feasible solution to the given problem.

At the same time, the direct effect of reflective skepticism in the presence of the mediator was found to be insignificant (-0.006, P = 0.855) which implies that emotional stability fully mediated the relationship between reflective skepticism and self-knowledge. In this context, students enhance their self-knowledge through the disposition elements such as analyzing and re-evaluating from their past experiences, checking the creditability of information sources, and thinking in a wider inference of decisions before taking appropriate and improved actions. This context demands more mental-related activities like balancing negative emotions like unhappiness, anxiety, upset, fear, and distress during the learning and decision-

making process. Thus, students need to obtain emotional stability in addition to reflective skepticism element to enhance their knowledge.

### **Implications**

The findings from the study indicate that, while the importance of critical thinking disposition is acknowledged in the existing literature, theoretical explanations are limited in justifying the positive and significant mediating role of emotional stability in enhancing students' self-knowledge. We found that one of the Big Five Personality Traits emotional stability mediates the relationship between critical thinking disposition and students' self-knowledge. In other words, we can say that students who were more disposed toward critical openness through new idea generation, idea evaluation, and preparedness were also good enough at controlling emotions and in turn, enhancing their self-knowledge effectively. The other group of students who were disposed toward reflective skepticism, while willing to learn from experience and to question the evidence, seems quite unstable in controlling their emotions, (Clem et al., 2021), and in turn, they also can enhance their self-knowledge effectively if they master their emotions and maintains emotional stability. This relationship pattern has significant implications for MBA students, as it indicates the need to practice emotions as mastering one's emotions is vital in both work and life. The theoretical context of the study suggests that students to better prepare for the transition from to corporate world, ensuring that the relationships between all three variables examined in this research are used at the required level for attaining more self-related aspects and life skills (Siva & Eagavalli, n.d.).

### **Conclusion**

From the results of the present study, it is confirmed that critical thinking disposition (critical openness, reflective skepticism), as hypothesized, positively and significantly influenced management students' self-knowledge. The results also indicate that emotional stability, in particular, plays a partial mediation effect in the relationship between critical openness and self-knowledge. And, full mediation effect in the relationship between reflective skepticism and self-knowledge. Further, it highlights the importance of critical thinking disposition among MBA students, so that they can use their skills for making better, right, and instant decisions in the rapidly changing business environment by overcoming hindrances.

### **Limitations and Suggestions for further research**

This research also has its limitations that need to be addressed in further studies. The first limitation of this study is that students were from one management (MBA) college affiliated with Bharathiar University, focused on the Coimbatore region alone; therefore it is not clear to what extent we can generalize our findings. The second limitation is that though the proposed relationship helps in the student's enhancement process, there is a possibility of a reciprocal of the proposed model. The third limitation is that among the Big Five Personality traits, emotional stability alone is considered under this model and it does not add emotional instability (neuroticism). Thus, it excludes the remaining personality traits. Further research on critical thinking disposition in the educational context can include other personality traits (George & Mampilly, 2012), self-related dimensions, and students from various colleges, universities, disciplines, and geographical areas. Also, it can include a gender-based model to measure students' versatility.

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