

## CHAPTER 3

### SCIENTIFIC LITERATURE REVIEW

#### 3.1. REVIEW OF SCIENTIFIC LITERATURE ON DIMENSIONS OF EMERGING ADULTHOOD

According to a study, developing characteristics of EA include exploring one's identity, trying new things, and feeling in-between (Galanaki & Leontopoulou, 2017). Another study found that the Dutch experience of becoming an adult differs from that of Americans in some ways (Hill et al., 2015). According to a study, interpersonal factors have a greater impact on encouraging identity discovery during EA (Skulborstad & Hermann, 2016). According to a different study, the features of emerging adulthood and adulthood criteria are only tangentially related, and persons who regard adulthood as a whole are also less likely to perceive their own emerging adulthood (Tagliabue et al., 2016).

Recent approaches to combining the Markers of Adulthood provide four moderately reliable factors (Faas et al., 2020). The IDEA can be used to identify unique profiles based on reported adjustment problems and characteristics of EA by using a "person-centred approach" (Lanctot & Poulin, 2018). The psychological conditions that define EA should be the focus of measurement at this time (Baggio et al., 2017). Different national groups and individuals have different perspectives on becoming an adult (Crocetti et al., 2015). Three elements were discovered and termed as "identity exploration/feeling in-between," "experimentation/possibilities/self-focused," and "negativity/instability" in the study (Leontopoulou et al., 2016).

**TABLE 3.1*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON DIMENSIONS OF EMERGING ADULTHOOD***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
1	Galanaki & Leontopoulou, 2017.	<ul style="list-style-type: none"><li>• 784 university students</li></ul>	Survey design	<ul style="list-style-type: none"><li>• Perceived Adult Status</li><li>• Conceptions of the Transition to Adulthood</li><li>• Inventory of the Dimensions of Emerging Adulthood</li><li>• Views of the Future</li></ul>	<ul style="list-style-type: none"><li>• The findings confirm that emerging adulthood is a unique stage of life in Greece. Over two thirds of the sample were, in their own estimations, emerging adults. "Identity exploration, experimentation/possibilities, and feeling in-between" were among the top developmental characteristics of emerging adulthood. Future predictions were cautiously positive.</li></ul>

2	J.M. Hill et al. 2015.	<ul style="list-style-type: none"> <li>• 958 Participants</li> </ul>	Survey design	<ul style="list-style-type: none"> <li>• IDEA</li> <li>• Self-efficacy</li> <li>• Life satisfaction</li> <li>• Depression</li> <li>• Sensation seeking</li> <li>• Locus of control</li> <li>• Substance use</li> </ul>	<ul style="list-style-type: none"> <li>• The findings showed that there are some differences between the Dutch and American experiences of emerging adulthood. In addition, there are subtle but substantial disparities in how this stage of life is perceived by various socioeconomic and ethnic groups in the Netherlands.</li> </ul>
3	Skulborstad and Hermann, 2016.	<ul style="list-style-type: none"> <li>• N = 1,353</li> </ul>	Survey design	<ul style="list-style-type: none"> <li>• IDEA</li> <li>• Single item SE</li> <li>• 10-item PEI</li> </ul>	<ul style="list-style-type: none"> <li>• The results back up Arnett's theory, but they also point to the fact that interpersonal rather than intrapsychic elements are more important in triggering identity exploration during EA.</li> </ul>
5	Tagliabue, Crocetti, & Lanz, 2016.	<ul style="list-style-type: none"> <li>• N = 1513</li> </ul>	Survey Design	<ul style="list-style-type: none"> <li>• Criteria for adulthood</li> <li>• The IDEA short form – 15 items</li> </ul>	<ul style="list-style-type: none"> <li>• The person-centered approach demonstrated that persons who have a composite perspective of adulthood are also</li> </ul>

					less likely to consider their emerging adulthood as a time of limited opportunity. The variable-centered approach found that adulthood criteria and aspects of emerging adulthood are only tangentially connected.
6	Faas et al., 2020.	<ul style="list-style-type: none"> <li>• N = 3,059</li> </ul>	Survey Design	<ul style="list-style-type: none"> <li>• Markers of Adulthood</li> <li>• Revised-IDEA 8 items</li> </ul>	<ul style="list-style-type: none"> <li>• Four moderately reliable criteria are provided by recent methods of combining the MoA, but opinions of adulthood differed greatly depending on the sample.</li> </ul>
7	Lanctot & Poulin, 2018.	<ul style="list-style-type: none"> <li>• N=307</li> </ul>	Survey Design	<ul style="list-style-type: none"> <li>• The IDEA</li> <li>• Depression, Anxiety and Self-Esteem</li> <li>• Problematic alcohol use</li> <li>• Sociodemographic variables</li> </ul>	<ul style="list-style-type: none"> <li>• According to the findings, the IDEA can be used to identify unique profiles with relation to the characteristics of emerging adulthood and reported adjustment problems.</li> </ul>

8	Baggio, Studer, Iglesias, Daeppen, & Gmel, 2017.	<ul style="list-style-type: none"> <li>• N=4991</li> </ul>	Cohort Study	<ul style="list-style-type: none"> <li>• The IDEA-8 items</li> <li>• Markers of adulthood</li> <li>• Depression</li> <li>• Satisfaction With Life</li> <li>• Social Well-Being</li> </ul>	<ul style="list-style-type: none"> <li>• Some teenagers had a heightened vulnerability and should be the target of preventive and early treatments, hence EA should be monitored concentrating on the psychological states connected with this time.</li> </ul>
9	Crocetti et al., 2015.	<ul style="list-style-type: none"> <li>• N= 2,472</li> </ul>	Comparative study	<ul style="list-style-type: none"> <li>• The IDEA consists of 28 items</li> </ul>	<ul style="list-style-type: none"> <li>• Perceptions of emerging adulthood vary across and within national groups.</li> </ul>
10	Leontopoulou, Mavridis, & Giotsa, 2016.	<ul style="list-style-type: none"> <li>• N=592</li> </ul>	Survey Design	<ul style="list-style-type: none"> <li>• The IDEA</li> </ul>	<ul style="list-style-type: none"> <li>• Three factors—identified as "identity exploration / feeling in-between," "experimentation / possibilities / self-focused," and "negativity / instability"—were shown to be significant in this study.</li> </ul>

### **3.2. REVIEW OF SCIENTIFIC LITERATURE ON IMPLICIT ASSOCIATION**

With an explicit Big-Five questionnaire (NEO-FFI30), the Implicit Association Test (IAT) demonstrated strong internal consistency and convergent validity, and self-esteem-IAT correlations were modest (Grumm & von Collani, 2007). The influence of social desirability of dissent is more pronounced among staunch regime supporters assessed by the IAT (Zhou et al., 2019). A person has been exposed to in their environment as opposed to how much they agree with those negative connotations (Karpinski & Hilton, 2001). When using an esteem-IAT to test self-representation, the type of self-representation differed depending on how the other was perceived (Karpinski, 2004). There was an order effect on the anger IAT. A relationship of  $r = .46$  existed between the two tests when the anger IAT was completed after the anxiety IAT, but not when it was completed first (Schnabel et al., 2006).

**TABLE 3.2*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON IMPLICIT ASSOCIATION***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Grumm & von Collani, 2007.	N1=84 N2=50	Correlative study	<ul style="list-style-type: none"> <li>• Big-Five questionnaire</li> <li>• Implicit association test</li> </ul>	<ul style="list-style-type: none"> <li>• The Big Five IAT effects and the self-esteem IAT were shown to be correlated in the predicted manner, indicating that the personality IATs measure implicit self-concept rather than implicit self-esteem.</li> </ul>
<b>2</b>	Zhou, Tang, & Lei, 2019.	N=306	Survey Method	<ul style="list-style-type: none"> <li>• Implicit association test (IAT)</li> </ul>	<ul style="list-style-type: none"> <li>• The IAT indicated strong regime supporters as having a larger effect of social desirability of dissent.</li> </ul>
<b>3</b>	Karpinski & Hilton, 2001.	N1=43 N2=85	Comparative study	<ul style="list-style-type: none"> <li>• Implicit association test</li> <li>• Explicit Attitude Measures</li> </ul>	<ul style="list-style-type: none"> <li>• Strong support for the IAT and explicit attitude measures' independence was provided</li> </ul>

		N3=50		<ul style="list-style-type: none"> <li>• Semantic differentials and feeling thermometers</li> <li>• Attitudes Toward Old People Scale</li> </ul>	by these three investigations. The outcomes of these investigations also offer preliminary backing for the IAT's environmental association model.
4	Karpinski, 2004.	N1 = 111 N = 44	Comparative study	<ul style="list-style-type: none"> <li>• IAT Measures of Esteem</li> <li>• Explicit Measures of Self-Esteem</li> <li>• Explicit Measures of Self- and Other-Esteem</li> </ul>	<ul style="list-style-type: none"> <li>• In both investigations, a self-esteem IAT revealed a relationship between the mental image of the self and the mental representation of the other.</li> </ul>
5	Schnabel, Banse, & Asendorpf, 2006.	N=100	Comparative study	<ul style="list-style-type: none"> <li>• d2 Attention-Stress Test</li> <li>• Anxiousness IAT and Angriiness IAT</li> </ul>	<ul style="list-style-type: none"> <li>• The apprehension When compared to direct measurements, IAT provided incremental validity for the anticipation of apprehensive behaviour. An order effect has an impact on the anger IAT. Direct measures of agitation and anxiety had no relationship.</li> </ul>

### **3.3. REVIEW OF SCIENTIFIC LITERATURE ON ATTACHMENT STYLES**

The degree of creativity in children was highly connected with parents' attachment patterns to their own parents. Children who feel safe in their relationships with their parents develop their creativity more effectively (Çetin & Ata, 2020). It is encouraged to use the most “recent version of the Revised Adult Attachment Scale (RAAS)” to assess adult attachment because it has sufficient evidence of validity (Coêlho & Teixeira, 2019). The subjective well-being and mental health of college students are closely correlated with adult attachment (Peng et al., 2021). Pathways by which attachment orientation connects to mental health include self-compassion, a sense of belonging, and importance to others (Raque-Bogdan et al., 2011). Family attachment scores and SS's peer attachment behaviours were associated (Bartholomew & Horowitz, 1991). Resilience and attachment security are related, with self-efficacy and self-care serving as some of the mediators (Bender & Ingram, 2018).

“Adults with distinct working models of attachment are more likely to feel, think, and behave differently in their relationships (Collins, 1996)”. Prior verbal and relational victimisation predict less secure adult relationships, with verbal victimisation being more significant, and there are substantial associations between all types of prior victimisation (Cosgrove et al., 2017). When college students with negative childhood experiences use their phones excessively, their attachment anxiety, attachment avoidance, and interpersonal relationships can all be improved (Li et al., 2020).

**TABLE 3.3*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON ATTACHMENT STYLE***

Sl. No.	Author and year of publication	Sample size (n)	Design	Variables studied	Findings
1	Çetin & Ata, 2020.	71 mothers 71 fathers 71 children	Relational screening model	<ul style="list-style-type: none"><li>• Creativity</li><li>• Parental Bonding</li></ul>	<ul style="list-style-type: none"><li>• The degree of creativity in children was highly connected with parents' attachment patterns to their own parents. Children who have strong links to their parents develop their creativity more effectively because they feel self-sufficient.</li></ul>
2	Coêlho & Teixeira, 2019.	N =1436	Multiple studies	<ul style="list-style-type: none"><li>• Revised Adult Attachment Scale</li></ul>	<ul style="list-style-type: none"><li>• It is suggested that you utilise the most recent version of the scales to measure adult attachment because they provided adequate evidence of validity.</li></ul>

3	Peng et al., 2021.	N = 198	Survey study	<ul style="list-style-type: none"> <li>• Symptom Self-Rating</li> <li>• General Well-being</li> </ul>	<ul style="list-style-type: none"> <li>• The subjective well-being and mental health of college students are closely correlated with adult attachment.</li> </ul>
4	Raque - Bogdan, Ericson, Jackson, Martin, & Bryan, 2011.	N=208	Survey Design	<ul style="list-style-type: none"> <li>• Experiences in Close Relationships</li> <li>• Self-Compassion</li> <li>• Mattering</li> <li>• Health Survey</li> </ul>	<ul style="list-style-type: none"> <li>• The results suggest that self-kindness, importance, and belongingness feelings are mediators of the link between attachment orientation and mental health.</li> </ul>
5	Bartholome w & Horowitz, 1991.	40 Female  37 Male	Survey Design	<ul style="list-style-type: none"> <li>• Attachment interview</li> <li>• Friendship</li> <li>• Self-Esteem</li> <li>• Self-Acceptance</li> <li>• Sociability</li> </ul>	<ul style="list-style-type: none"> <li>• Both self- and friend-reports revealed that each style was connected to a particular profile of interpersonal issues.</li> <li>• The proposed model was demonstrated to be applicable to depictions of family</li> </ul>

				<ul style="list-style-type: none"> <li>• Relationship</li> <li>• Interpersonal Problems</li> </ul>	relationships because attachment patterns of Ss with their peers and their family attachment evaluations were connected.
6	Bender & Ingram, 2018.	N=300	Survey design	<ul style="list-style-type: none"> <li>• Resilience</li> <li>• Adult Attachment</li> <li>• Generalized Self-Efficacy</li> <li>• Mental Health Self-Management</li> </ul>	<ul style="list-style-type: none"> <li>• Resilience and attachment security are related, with self-efficacy and self-care serving as partial mediators.</li> </ul>
7	Collins, 1996.	<p>Study 1:</p> <p>82 female</p> <p>53 male</p> <p>Study 2:</p> <p>56 male</p> <p>73 female</p>	Two studies	<ul style="list-style-type: none"> <li>• Adult Attachment</li> <li>• Relationship events</li> <li>• Attribution</li> </ul>	<ul style="list-style-type: none"> <li>• The findings shed light on the potential mechanisms underlying potential disparities in relationship quality according to attachment style.</li> </ul>

8	Cosgrove, Nickerson, & DeLucia, 2017.	N=386	Survey design	<ul style="list-style-type: none"> <li>• Peer-Victimization</li> <li>• Adult Attachment</li> </ul>	<ul style="list-style-type: none"> <li>• The results showed that (a) verbal and relational peer victimisation did not differ significantly by gender; (b) all types of prior victimisation were significantly correlated; and (c) prior verbal and relational victimisation was significantly associated with less stable adult attachments, with verbal victimisation being more significant.</li> </ul>
9	Li, Zhang, Chu, & Li, 2020.	N=345	Survey Design	<ul style="list-style-type: none"> <li>• Adverse Childhood Experience</li> <li>• Mobile Phone Addiction</li> <li>• Adult Attachment</li> <li>• Interpersonal Relationship</li> </ul>	<ul style="list-style-type: none"> <li>• According to the findings, college students who have a mobile phone addiction and had a difficult childhood may benefit from the remission of attachment anxiety, the reduction of attachment avoidance, and the improvement of interpersonal interactions.</li> </ul>

### **3.4. REVIEW OF SCIENTIFIC LITERATURE ON PARENTING STYLE**

Adolescents' honesty was predicted by their ability to identify their values as being high in honesty and as having low costs (Bureau & Mageau, 2014). The How-to Parental Program is successful at fostering children's mental health and enhancing parenting techniques (Joussemet et al., 2013). Young adults' well-being is more closely correlated with autonomous motivation for their living situation than their actual living situation (Kins et al., 2009). Psychological control hindered development in both commitment dimensions, whereas exploration in breadth strengthened psychological control (Luyckx et al., 2007). When examining perceived autonomy-supportive versus controlling parenting, the "Perceived Parental Autonomy Support Scale" is helpful (Mageau et al., 2015). The degree to which supervisors and coworkers encourage autonomy is a predictor of the psychological well-being and job satisfaction of health professionals (Moreau & Mageau, 2011).

**TABLE 3.4*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON PARENTING STYLE***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Bureau & Mageau, 2014.	N=167	Integrated model	<ul style="list-style-type: none"><li>• Perceived Parental Autonomy Support Scale (P-PASS)</li><li>• Self-Determination toward honesty</li><li>• Honest personality traits</li><li>• Telling the truth vs lying</li><li>• Honesty valuation</li><li>• Observation of adolescents' lying behavior</li></ul>	<ul style="list-style-type: none"><li>• The findings indicated that teenagers' identification with the value of honesty and their perception of the cheap costs/high rewards of honesty were related to autonomy support. Controlling parenting was seen to produce opposite relationships. Higher identification of the value of</li></ul>

					honesty and low costs/high rewards of honesty were predictors of adolescents' sincerity.
2	Joussemet, Mageau, & Koestner, 2013.	Parents = 82 Children = 44	Pre-test vs post-test repeated measures design	<ul style="list-style-type: none"> <li>• Socio-Demographic Information</li> <li>• Laxness subscale of the Parenting Scale</li> <li>• Care subscale of the Parental Bonding Instrument</li> <li>• Parental Attitude Scale</li> <li>• Autonomy supportive Parenting Skill Scale</li> <li>• Child Behavior Checklist</li> </ul>	<ul style="list-style-type: none"> <li>• Results suggest that the How-to Parenting Program is effective in improving parenting style and in promoting children's mental health.</li> </ul>
3	Kins, Beyers, Soenens, &	N=224	Integrated model	<ul style="list-style-type: none"> <li>• Satisfaction With Life Scale</li> <li>• Subjective Vitality Scale</li> </ul>	<ul style="list-style-type: none"> <li>• The findings indicated that autonomous motivation for one's living situation had a stronger</li> </ul>

	Vansteenkiste, 2009.			<ul style="list-style-type: none"> <li>• Center for Epidemiologic Studies– Depression scale</li> <li>• Satisfaction with current living situation</li> <li>• Self-Regulation Questionnaire</li> <li>• Autonomy-Support subscale</li> <li>• Psychological Control Scale</li> </ul>	relationship with emerging adults' wellbeing than the living situation itself. Furthermore, it was discovered that parenting that promotes autonomy has a favourable relationship with a status that is autonomously governed.
4	Luyckx, Soenens, Vansteenkiste, Goossens, & Berzonsky,	N= 565	Longitudinal study	<ul style="list-style-type: none"> <li>• Ego Identity Process Questionnaire</li> <li>• Utrecht– Groningen Identity Development Scale</li> <li>• Psychological Control Scale</li> </ul>	<ul style="list-style-type: none"> <li>• Associations between psychological control and identity were stable across time.</li> <li>• The two commitment measures simultaneously decreased as psychological control increased.</li> </ul>

	2007.				<ul style="list-style-type: none"> <li>• While inquiry in breadth led to enhanced psychological control, psychological control was hindered in both commitment dimensions.</li> </ul>
5	Mageau et al., 2015.	N1=210 N2=315	Multidimensional study	<ul style="list-style-type: none"> <li>• P-PASS</li> <li>• Satisfaction with Life Scale</li> <li>• Psychological Control Scale of the Youth Self-Report</li> <li>• Positive and Negative Affect Schedule</li> <li>• Self-Esteem Scale</li> <li>• Acceptance/rejection subscale</li> </ul>	<ul style="list-style-type: none"> <li>• Results suggested the P-PASS usefulness in studying perceived autonomy-supportive and controlling parenting.</li> </ul>
6	Moreau & Mageau, 2011.	N=597	Cross-sectional and correlational design	<ul style="list-style-type: none"> <li>• Perceived Autonomy Support Scale for employees</li> <li>• Work Satisfaction Scale</li> </ul>	<ul style="list-style-type: none"> <li>• Results showed that work happiness and psychological health in healthcare professionals</li> </ul>

				<ul style="list-style-type: none"> <li>• Intent to leave</li> <li>• Positive and Negative Affect Schedule</li> </ul>	<p>are predicted by colleagues' and supervisors' perceived support for autonomy. Over and above the perception of autonomy support from supervisors, colleagues' perceptions of autonomy support contribute to the prediction of health professionals' job satisfaction, subjective wellbeing, and suicidal ideation.</p>
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### **3.5. REVIEW OF SCIENTIFIC LITERATURE ON SELF-ESTEEM**

Self-esteem (SE) levels provide a more accurate description of the attribute than global scores (García et al., 2019). Academic procrastination and low SE go hand in hand (Arias-Chávez et al., 2020). The relationship between performance and SE is favourable (Jayanthi et al., 2018). The students from non-professional colleges have stronger SE and greater drive for success, and the girls are more motivated to succeed than the boys (Bhatt & Bahadur, 2019). The college's departing classes' pupils had higher self-esteem, but there was still room for development (Mohitsharma, 2019). Age, marital status, degree of education, and employment history are all related to nursing students' self-esteem (Shrestha et al., 2018).

Students' levels of self-efficacy and SE are closely related (Bhatt & Bahadur, 2018). There were significant differences in social support and SE, but there were no changes in depression between transgender and cisgender individuals (Yousuf et al., 2021). People with low SE are more likely to have negative thoughts, feelings, and assessments about their romantic relationships. Insecurity and unhappy relationships play a role in mediating the link between low SE and the desire to abandon romantic relationships. People with poor SE could start to question how much their romantic partners will love, care for, and trust them (Arikewuyo et al., 2021). After controlling for gender, age, married status, and family socioeconomic level, relational victimisation and SE entirely and partially buffer the link between poverty and psychological distress and psychological well-being, respectively (Jiang, 2020).

**TABLE 3.5*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON SELF-ESTEEM***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	García, Olmos, Matheu, & Carreño, 2019.	N=74	Comparative design	<ul style="list-style-type: none"> <li>• The Rosenberg Self-esteem Scale</li> <li>• Childhood Sexual Abuse Interview</li> </ul>	<ul style="list-style-type: none"> <li>• According to the study, self-esteem levels are a better way to represent a trait and compare groups of respondents than global scores.</li> </ul>
<b>2</b>	Arias-Chávez, Ramos-Quispe, Villalba-Condori, & Postigo-Zumarán, 2020.	N=566	Cross-sectional study	<ul style="list-style-type: none"> <li>• The Academic Procrastination Scale</li> <li>• The Specific Perceived Self-efficacy Scale of Academic Situations</li> </ul>	<ul style="list-style-type: none"> <li>• Self-esteem and academic procrastination are correlated, according to Spearman's correlation coefficient of -.163, effect size of 0.4037, and statistical power of 1.00. Procrastination and self-efficacy have a negative correlation of -</li> </ul>

				<ul style="list-style-type: none"> <li>• The Rosenberg Self-Esteem Scale</li> </ul>	.220, but the size of the impact is 0.4690, and the statistical power is greater than 0.80, giving the result of 1.00.
3	Jayanthi, Kumar, & Swathi, 2018.	N=300	Criterion-reference model	<ul style="list-style-type: none"> <li>• Rosenberg self-esteem inventory</li> </ul>	<ul style="list-style-type: none"> <li>• This study shows a significant positive relationship between academic achievement and self-esteem.</li> </ul>
4	Bhatt & Bahadur, 2019.	N=400	Quantitative comparative exploratory research	<ul style="list-style-type: none"> <li>• Achievement motivation Scale</li> <li>• The Rosenberg Self-Esteem Scale</li> </ul>	<ul style="list-style-type: none"> <li>• Compared to students at professional colleges, non-professional college students exhibited higher levels of self-worth and motivation for success. In comparison to boys, girls were more motivated to attain their goals and had higher self-esteem.</li> </ul>
5	Sharma, 2019.	N=100	Exploratory and descriptive	<ul style="list-style-type: none"> <li>• The Rosenberg Self-Esteem Scale</li> </ul>	<ul style="list-style-type: none"> <li>• The college's departing classes' pupils had greater self-esteem scores with room</li> </ul>

			research design		for further development. The grades of pupils who were financially struggling and those who were doing well did not change significantly.
6	Shrestha, Limbu, Twati, & Shrestha, 2018.	N=198	Descriptive cross-sectional study	<ul style="list-style-type: none"> <li>• The Rosenberg Self-Esteem Scale</li> </ul>	<ul style="list-style-type: none"> <li>• The study discovered a relationship between age, marital status, educational attainment, and work experience and nursing students' sense of self-worth.</li> </ul>
7	Bhatt & Bahadur, 2018.	N=400	Correlational, quantitative comparative exploratory research	<ul style="list-style-type: none"> <li>• General Self Efficacy Scale</li> <li>• The Rosenberg Self-Esteem Scale</li> </ul>	<ul style="list-style-type: none"> <li>• According to the findings, there is a significant relationship between students' self-efficacy and self-esteem.</li> </ul>
8	Yousuf, Naz, Roberson,	N=210	Across groups comparative	<ul style="list-style-type: none"> <li>• Semi-Structured Interview Form</li> </ul>	<ul style="list-style-type: none"> <li>• The findings showed no changes in depression between transgender and</li> </ul>

	Wise, & Rowland, 2021.		study	<ul style="list-style-type: none"> <li>• Siddiqui Shah Depression Scale</li> </ul>	cisgender groups, although there were significant variations in social support and self-esteem. Only the kind and length of STI were found to be significant predictors of depression by preliminary regression analysis.
9	Arikewuyo, Eluwole, Dambo, & Abdulbaqi, 2021.	N=243	Structural equation model	<ul style="list-style-type: none"> <li>• Rosenberg Self-Esteem Scale</li> <li>• A 7- item scale of Hendrick</li> <li>• Romantic relationships scale</li> <li>• Intention to Break up</li> </ul>	<ul style="list-style-type: none"> <li>• According to study results, the association between poor self-esteem and the intention to leave romantic relationships is partially mediated by insecurity and relationship unhappiness. Findings also showed that people with poor self-esteem could start to question the degree of love, caring, and trust their romantic partners have for them.</li> </ul>

10	Jiang, 2020.	N=1280	Structural equation model	<ul style="list-style-type: none"> <li>• The multidimensional poverty index</li> <li>• The e Problem Behavior Frequency Scale</li> <li>• The Psychological Well-Being and Distress Screener</li> <li>• The Rosenberg Self-Esteem Scale</li> </ul>	<ul style="list-style-type: none"> <li>• The findings show that there are several victimisation kinds associated with the pathways relating poverty to teenage mental health. After controlling for gender, age, marital status, and family socioeconomic position, relational victimisation and self-esteem fully mediate the association between poverty and psychological well-being and partially mediate the relationship between poverty and psychological distress. Overt victimisation does not, however, have a major mediating effect.</li> </ul>
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### **3.6. REVIEW OF SCIENTIFIC LITERATURE ON PERCEIVED COMPETENCY FOR LEARNING**

It's possible that participants' perceptions of their own competence changed as a result of the easier success criteria (Iwatsuki & Regis, 2021). Social competence is significantly predicted by internal engagement, father-trust, mother-communication, and administrative engagement (Demirtas-Zorbaz et al., 2018). There are no significant gender differences on Social Efficacy, Emotional Efficacy and Perceived Competence (Tung & Kaur, 2017). Compared to male students, female students are more motivated by Racing Academy (Joiner et al., 2011). The students believe that their basic psychological requirements are being addressed, and that simulation-based learning (SBL) may help them become more motivated to learn on their own and generally enhance their overall learning (Koha et al., 2010). Students who lack control, are bored, or feel underqualified will set work-avoidance objectives (Seifert & O'Keefe, 2001). Compared to average pupils, gifted children believe they are more capable and intrinsically driven to participate in school activities (Vallerand et al., 1994). The majority of students' self-reported measures of social and communication skills enhanced (Bakx et al., 2006). By include career management training options in graduation programmes, higher education institutions can increase the employability of their graduates (Monteiro et al., 2020).

**TABLE 3.6*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON PERCEIVED COMPETENCY FOR LEARNING***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Iwatsuki & Regis, 2021.	N=30	Random control trail	<ul style="list-style-type: none"> <li>• Self-report perceived competence scale</li> </ul>	<ul style="list-style-type: none"> <li>• It is plausible that participants' opinions of their own talents changed as a result of the simpler success criteria given that the RES(Relatively Easy Success) group self-reported having higher perceived competence than the DS(Difficult Success) group.</li> </ul>
<b>2</b>	Demirtas-Zorbaz, Zorbaz, & Kizildag, 2018.	N= 336 N2=411	Descriptive study	<ul style="list-style-type: none"> <li>• Short Form of the Inventory of Parent Attachment</li> </ul>	<ul style="list-style-type: none"> <li>• Academic proficiency is significantly predicted by internal involvement, programme engagement, mother-daughter communication, teacher engagement, and father trust. In contrast, social</li> </ul>

				<ul style="list-style-type: none"> <li>• Perceived Competence Scale</li> <li>• Scale for School Engagement (SSE)</li> </ul>	competence was substantially predicted by internal engagement, father trust, mother communication, and administrative participation.
3	Kaur, 2017.	N=559	Pre and post comparative study	<ul style="list-style-type: none"> <li>• Self-efficacy Questionnaire</li> <li>• Perceived Competence Scale</li> </ul>	<ul style="list-style-type: none"> <li>• Regarding academic self-efficacy, there were significant gender variations. Because of this, the females believed they were more academically effective than the guys, had more faith in their capacity to do well in engineering class, and showed the proper learning habits. On the other two aspects of self-efficacy, however, there were no discernible gender differences.</li> </ul>
4	Joiner et al., 2011.	N=138	Pre and post comparative study	<ul style="list-style-type: none"> <li>• Test of students' knowledge of engineering</li> </ul>	<ul style="list-style-type: none"> <li>• The students gained more engineering knowledge after playing Racing Academy, and the positive effects of Racing Academy were felt by both men and women</li> </ul>

				<ul style="list-style-type: none"> <li>• Students' motivation towards studying engineering</li> </ul>	<p>equally. Student motivation was higher for female students than for male students, nevertheless.</p>
5	Koh et al, 2010.	N=114	Pre and post comparative study	<ul style="list-style-type: none"> <li>• General Self-efficacy scale</li> <li>• Academic Self-Regulation Questionnaire (SRQ)</li> <li>• Learning Climate Questionnaire</li> <li>• Intrinsic Motivation Inventory</li> </ul>	<ul style="list-style-type: none"> <li>• According to the results, the pupils had high levels of self-determined motivation and felt as though their psychological needs were being met. Even while SBL may affect learners differently depending on criteria including gender, educational background, and IT proficiency, students who participated in it had higher mean performance test results.</li> </ul>

6	Seifert & O'Keefe, 2001.	N=512	Correlational -regression method	<ul style="list-style-type: none"> <li>• PCL</li> <li>• Learning goal</li> <li>• Work avoidance</li> <li>• Externality</li> <li>• Perceived meaning</li> </ul>	<ul style="list-style-type: none"> <li>• Goals and emotions appear to be interconnected.</li> </ul> <p>Students will set learning objectives with the assistance of teachers who encourage a sense of self-assurance. Students who lack confidence, are bored, or lack control will set job avoidance goals.</p>
7	Vallerand, Gagné, Senécal, & Pelletier, 1994.	N=135	Comparative study	<ul style="list-style-type: none"> <li>• Harter's Intrinsic/Extrinsic Orientation Scale</li> <li>• Cognitive Perceived Competence Scale</li> </ul>	<ul style="list-style-type: none"> <li>• According to the findings, brilliant students believed themselves to be more capable and intrinsically driven toward academic pursuits than normal students.</li> </ul>
8	Bakx, Van Der Sanden, Sijtsma, Croon, & Vermetten,	N=123	Longitudinal within- subjects design	<ul style="list-style-type: none"> <li>• Self-perceived communicative competence scales</li> <li>• Learning conceptions</li> </ul>	<ul style="list-style-type: none"> <li>• All scores on the components of students' self-perceived social-communicative skill increased, with the exception of confidence in "expressing sympathy".</li> </ul> <p>Comparable communication test assessment results also showed a considerable improvement. The only</p>

	2006.			<ul style="list-style-type: none"> <li>• Reported learning activities</li> <li>• Personality traits</li> <li>• Assessment scores</li> </ul>	two aspects of personality that appeared to be relatively consistent were extraversion and emotional stability. During the first school year, autonomy steadily increased but agreeability fell.
9	Monteiro, Ferreira, & Almeida, 2020.	N=373	Comparative study	<ul style="list-style-type: none"> <li>• Career Adapt-Abilities Scale</li> <li>• Self-Perceived Employability Scale</li> <li>• Self-perceived competency</li> </ul>	<ul style="list-style-type: none"> <li>• According to the results, career adaptability can act as a mediator between self-perceived competency and self-perceived employability.</li> </ul>

### **3.7. REVIEW OF SCIENTIFIC LITERATURE ON REASONS FOR LEARNING**

Theoretical contributions link the model with behavior and achievement of students (Keung et al., 2019). The campus climate was favourably correlated with students' subjective environments, their identities systematically influenced how they perceived the environment, and diversity-related factors positively impacted the campus climate (Hemer et al., 2019). Study results point to incentive activities for male high school English learners to create their ideal L2 selves (Y. Kim & Kim, 2018). The shift in autonomous self-regulation forecasts students' course performance (Black & Deci, 2000).

Making inferences regarding causal reasoning and teleological reasoning is rarely possible based on students' preference judgments (Trommler et al., 2018). The top three justifications for beginning at a different institution vary between subpopulations, such as Hispanic or Latino status, depending on financial situation and affordability, non-academic obligations, and academic flexibility (Ogilvie & Knight, 2018). The qualities of the interdisciplinary major do not affect students' increases in critical thinking and need for cognition, however certain programme aspects have a small impact on small changes in positive attitudes about literacy (Lattuca et al., 2017).

**TABLE 3.7*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON REASON FOR LEARNING***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Keung, Chen, Sheng, Lam, & Kwok, 2019.	N=61	Longitudinal Study	<ul style="list-style-type: none"><li>• Learning attitudes</li><li>• Learning behaviors</li><li>• Academic performance</li></ul>	<ul style="list-style-type: none"><li>• Findings made theoretical contributions and linked the model with behavior and achievement of students.</li></ul>
<b>2</b>	Hemer, Reason, & Ryder, 2019.	N=13,780	Quantitative study	<ul style="list-style-type: none"><li>• Personal and Social Responsibility Inventory</li></ul>	<ul style="list-style-type: none"><li>• Campus atmosphere was systematically influenced by students' identities, positively influenced by students' subjective environments, and positively influenced by diversity-related indicators.</li></ul>

3	Kim & Kim, 2018.	N=334	Survey study	<ul style="list-style-type: none"> <li>• Intrinsic Motivation</li> <li>• Motivated Behavior</li> <li>• English Achievement</li> </ul>	<ul style="list-style-type: none"> <li>• The results indicated motivated actions to help male high school English learners create their ideal L2 selves.</li> </ul>
4	Black & Deci, 2000.	N=137	Prospective study	<ul style="list-style-type: none"> <li>• General Causality Orientations Scale</li> <li>• Learning Climate Questionnaire</li> <li>• Learning Self-Regulation Questionnaire</li> <li>• Perceived Competence Scale</li> </ul>	<ul style="list-style-type: none"> <li>• The study's findings revealed that: (1) students' reports of enrolling in the course relatively independently predicted higher perceived competence, interest/enjoyment, and lower anxiety as well as performance goals focused on grades during the course; and (2) students' perceptions of their instructors' support for their autonomy predicted increases in autonomous self-regulation, perceived competence, interest/enjoyment, and decreases in anxiety over the course of the semester.</li> </ul>
5	(Trommler et al., 2018).	N = 353 n = 26	Comparative study	<ul style="list-style-type: none"> <li>• Acceptance judgement task questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>• Making inferences concerning causal reasoning and teleological reasoning, which is a contentious</li> </ul>

				<ul style="list-style-type: none"> <li>• Preference judgement task questionnaire</li> <li>• Guideline-based individual interviews</li> </ul>	topic in the literature, was rarely permitted by students' preference judgments.
6	Ogilvie & Knight, 2018.	N=1070	Cross-sectional survey	<ul style="list-style-type: none"> <li>• Engineering Transfer Student Survey</li> </ul>	<ul style="list-style-type: none"> <li>• The main justifications for beginning at a new institution varied across subpopulations, such as Hispanic/Latino status, and included financial/affordability, nonacademic commitments, and academic flexibility.</li> </ul>
7	Lattuca, Knight, Seifert, Reason, & Liu, 2017.	N1= 4193 N2=3156	Multi-institutional, longitudinal research	<ul style="list-style-type: none"> <li>• Critical Thinking Test</li> <li>• Need for Cognition scale</li> <li>• Positive Attitude Towards Literacy scale</li> </ul>	<ul style="list-style-type: none"> <li>• The study found that students in interdisciplinary majors report less change in Critical Thinking and Need for Cognition than their peers in disciplinary majors, but no difference in change in Positive Attitude Toward Literacy.</li> </ul>

### **3.8. REVIEW OF SCIENTIFIC LITERATURE ON FREEWILL AND DETERMINISM**

The validity and reliability of the Chinese FAD+ are moderate ([.60 .78], [.60 .78], test-retest correlation [.54 .59]) (Liu et al., 2019). In Turkey, FW belief is not automatically linked to religious, yet fatalistic determinism is a major pillar of Turkish belief systems (Yilmaz et al., 2018). Realisticism, happiness, and learning intuitions are only marginally affected by participants' ideas on free will (Feldman & Chandrashekar, 2018). Involuntary transition weakens the free will belief in those with lower Present-Hedonistic (PH) but did not affect those of higher PH orientation (Isham & Lomayeva, 2022). Although it is not conclusive, it appears that the preponderance of the evidence supports the motivated account (Clark et al., 2021).

Individuals who are exposed to anti-free will manipulations had lower views in free will ( $g = -0.29$ , 95% CI = [-0.35, -0.22]) while having higher beliefs in determinism ( $g = 0.17$ , 95% CI = [0.09, 0.24]) (Genschow et al., 2021). Free will beliefs and life satisfaction may be related, and people's self-esteem and the significance of free will beliefs (in their society) may play a role (Spronken et al., 2019). Beyond other agency categories, free-will beliefs predict outcomes throughout time and across cultures (Feldman et al., 2018). More stringent treatment suggestions are predicted by perceived patient freedom. self-control associated to therapy (Alderson et al., 2021). Beliefs about mind-body connections are a multifaceted entity with exceptional predictive power (Forstmann & Burgmer, 2018).

**TABLE 3.8*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON FREEWILL AND DETERMINISM***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Liu, Wang, Sui, Peng, & Hu, 2019.	N=1333	Reliability and validity test	• Free Will and Determinism Plus (FAD+)	• The results showed that the Chinese FAD+ are genuine and had a test-retest correlation of [.54-.59] and reliability of [.60-.78].
<b>2</b>	Yilmaz, Bahçekapili, & Harma, 2018.	N=1690	Survey method	• Free Will and Determinism Plus (FAD+)	• While fatalistic determinism is a fundamental component of Turkish people's worldview systems, FW belief is not inherently linked to religiosity in that country.

3	Feldman & Chandrashekar, 2018.	N= 346	Empirical study	<ul style="list-style-type: none"> <li>• Free Will and Determinism Scale</li> <li>• Intuitions</li> <li>• Realism</li> <li>• Happiness</li> <li>• Learning</li> <li>• Meaningfulness</li> <li>• Uniqueness</li> <li>• Pro-sociality</li> <li>• Future orientation</li> <li>• Moral responsibility</li> </ul>	<ul style="list-style-type: none"> <li>• Free will beliefs among participants had little effect on the intuitions of realism, happiness, and learning, but they did not change the overall intuition favouring indeterminism and had no effect on other intuitions.</li> </ul>
4	Isham & Lomayesva, 2022.	N=131	Correlative study	<ul style="list-style-type: none"> <li>• Zimbardo Time Perspective Inventory (ZTPI)</li> <li>• Free Will and Determinism Scale</li> <li>• Depression Anxiety Stress Scales (DASS)</li> </ul>	<ul style="list-style-type: none"> <li>• Results revealed that involuntary transition weakened the free will belief in those with lower PH but did not affect those of higher PH orientation.</li> </ul>

				<ul style="list-style-type: none"> <li>• State-Trait Anxiety Inventory (STAI)</li> </ul>	
5	Clark, Winegard, & Shariff, 2021.	N=4014	Three meta-analyses	<ul style="list-style-type: none"> <li>• Free will judgments</li> <li>• Desires to punish</li> <li>• Normativity judgments</li> <li>• Exploratory regressions</li> </ul>	<ul style="list-style-type: none"> <li>• The results supported motivated free will attributions (k = 22; n = 7,619; r = .25, p.001) and beliefs (k = 27; n = 8,100; r = .13, p.001) after removing all potentially confounding variables (k = 26; n = 7,953; r = .12, p.001).</li> </ul>
6	Genschow et al., 2021.	N=2630 5	Meta-analysis	<ul style="list-style-type: none"> <li>• Free Will and Determinism Scale</li> <li>• Free Will Inventory</li> <li>• Self-made rating scales</li> <li>• Belief in Genetic Determinism scale</li> <li>• Belief in Social Determinism scale</li> </ul>	<ul style="list-style-type: none"> <li>• Individuals' beliefs in free will are reduced when exposed to anti-free will manipulations (g = -0.29, 95% CI = [-0.35, -0.22]), but their beliefs in determinism are increased (g = 0.17, 95% CI = [0.09, 0.24]). The analysis, however, found less support for the</li> </ul>

					claim that influencing people's beliefs about free will has unintended repercussions.
7	Spronken, Holland, Wang, & Dijksterhuis, 2019.	N1=93 N2=120 N3=200 N4=453	Correlational study	<ul style="list-style-type: none"> <li>• Free Will and Determinism Scale</li> <li>• Subjective Happiness Scale</li> <li>• Rosenberg Self-esteem Scale</li> </ul>	<ul style="list-style-type: none"> <li>• When satisfied, people appeared to believe more strongly in free will. People's self-esteem and the importance of free will beliefs (in their culture) may play a role in the relationship between free will beliefs and life satisfaction.</li> </ul>
8	Feldman, Farh, & Wong, 2018.	N1=252 N2=137 N3=14,062	Cross-cultural and longitudinal studies	<ul style="list-style-type: none"> <li>• Free Will and Determinism Scale</li> <li>• Job satisfaction scale</li> </ul>	<ul style="list-style-type: none"> <li>• According to the findings, free-will beliefs outperform other agency conceptions in their ability to predict outcomes over time and across countries.</li> </ul>

<b>9</b>	Alderson, Hagiwara, & Green, 2021.	N=161	Analytic design	<ul style="list-style-type: none"> <li>• Perceived patient free will</li> <li>• Perceived patient treatment related self-control</li> <li>• Racial identity</li> <li>• Feeling thermometers</li> <li>• Locus of control</li> <li>• Free will belief</li> <li>• Attention checks</li> </ul>	<ul style="list-style-type: none"> <li>• According to the findings, patient self-control in relation to their treatment is predicted to be higher by medical providers' assessments of their patients' free will, which is predicted to lead to more thorough treatment recommendations.</li> </ul>
<b>10</b>	Forstmann & Burgmer, 2018.	N1=364 N2=297	Regression-based and correlational study	<ul style="list-style-type: none"> <li>• Free Will Inventory</li> <li>• Mind-Body Relations Scale</li> <li>• Demographic questions</li> <li>• Free Will and Determinism Scale</li> <li>• Rational–Experiential Inventory</li> </ul>	<ul style="list-style-type: none"> <li>• Beliefs about mind-body relations are a multidimensional construct with unique predictive abilities.</li> </ul>

### **3.9. REVIEW OF SCIENTIFIC LITERATURE ON ‘G’ INVENTORY OF PERSONALITY**

Diet (fresh coconut) administered show better results on the levels of hemoglobin and personality scores as compared to diet (groundnut) (Shankar et al., 2016). There are significant effects of *guṇas* on perceived stress and mindful eating practices (Mendiratta et al., 2020). Yoga has influence on *Guṇas* and self esteem in comparison to physical exercise (Raghuram et al., 2009a). Between students of the Yogic and Modern Education Systems, there is a considerable variation in *Sattvā* and *Tamas guṇas* (Satsangi & Kumar, 2018). The systematic interventions resulted in a sizable change in the respondents' personality traits in the first and second periods (Kumar & Bhattacharyya, 2020). Students who have a strong sense of *sattva guṇa* and who adhere to the law of *karmā* are more likely to feel a connection to others (Mulla & Krishnan, 2019).

**TABLE 3.9**

***SUMMARY TABLE OF SCIENTIFIC RESEARCH ON ‘G’ INVENTORY OF PERSONALITY***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Shankar, Palukuru, Deo, Manjunath, & Nagendra, 2016.	N=58	Comparative Study	<ul style="list-style-type: none"> <li>• EPI Pro (gas discharge visualization)</li> <li>• Hemoglobin</li> <li>• The 'Gita' Inventory of Personality (GIN)</li> </ul>	<ul style="list-style-type: none"> <li>• The study suggests that diet (fresh coconut) administered showed better results on the levels of hemoglobin and personality scores as compared to diet (groundnut).</li> </ul>
<b>2</b>	Mendiratta, Goel, & Sondhi, 2020.	N=158	Comparative Study	<ul style="list-style-type: none"> <li>• Gita Inventory of Personality</li> <li>• Perceived Stress Scale</li> <li>• The Mindful Eating Questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>• It was found that individuals with a dominance of <i>sattva guṇa</i> experience less stress as compared to the other two <i>guṇas</i>. Results revealed that individuals with</li> </ul>

					<i>sattva</i> and <i>rajas guṇa</i> engage more in mindful eating practices as compared to individuals with <i>tamasic guṇa</i> .
3	Raghuram, Deshpande, & Nagendra, 2009.	N=1228	Randomized control study	<ul style="list-style-type: none"> <li>• Gita Inventory of Personality</li> <li>• Self esteem questionnaire (SEQ)</li> </ul>	<ul style="list-style-type: none"> <li>• The study has shown the influence of Yoga on <i>Guṇas</i> and self-esteem in comparison to physical exercise.</li> </ul>
4	Satsangi & Kumar, 2018.	Yogic =80 Modern = 80	2x2 Factorial Design	<ul style="list-style-type: none"> <li>• Gita Inventory of Personality</li> </ul>	<ul style="list-style-type: none"> <li>• The findings show that modern education systems encourage <i>Tamas guṇas</i> in pupils while yogic education systems encourage <i>Sattva guṇas</i>.</li> </ul>
5	Kumar & Bhattacharyy, 2020.	N=16	1	<ul style="list-style-type: none"> <li>• <i>Triguṇa</i> inventory scale</li> </ul>	<ul style="list-style-type: none"> <li>• The systematic interventions caused a considerable alteration in the respondents'</li> </ul>

					personality traits in the first and second periods.
6	Mulla & Krishnan, 2019.	N=292	Structural equation model	<ul style="list-style-type: none"> <li>• Belief in the law of <i>karmā</i></li> <li>• Oneness or spirituality</li> <li>• Gita inventory of personality</li> <li>• Helping behavior</li> </ul>	<ul style="list-style-type: none"> <li>• It was discovered that pupils who were high on <i>Sattva guṇa</i> and who adhered to the concept of the law of <i>karmā</i> were more likely to feel a connection to others. The team members also thought that these pupils were more supportive.</li> </ul>

### **3.10. REVIEW OF SCIENTIFIC LITERATURE ON MINDFULNESS**

The MAAS seems to have a place in studies looking at how mindfulness affects cancer patients' psychological health, whether or not they also compare cancer patients to nonclinical controls (Carlson & Brown, 2005). Lower psychological discomfort and greater psychological flexibility are associated with the MAAS, which has strong internal consistency (Morgan et al., 2014). The functional connectivity of numerous attention-related brain regions, including cross-network functional connectivity, is connected with MAAS scores (Bilevicius et al., 2018). Teenagers who practised meditation reported much higher levels of life happiness, but there was no discernible difference in their attentiveness to the present moment (Agarwal & Dixit, 2017).

Meditators had higher mean estimates than non-meditators (Goh et al., 2017). College students who use the Mastering Emotions Technique (MEMT) report improved emotion control, positive effects, self-compassion, and mindfulness as well as decreased negative effects (Patel et al., 2018). The degree of conscious attention awareness improved with the mantra meditation (Kwon & Cheong, 2020). Participants' reactions to auditory stimuli during a mindfulness meditation session may be moderated by their level of musical immersion (Dvorak & Hernandez-Ruiz, 2021). Students who take the meditation course experience greater overall subjective happiness, greater mindfulness, and reduced worry (Crowley et al., 2020). Meditation experiences greatly alter how traits of mindfulness and nonattachment are predicted (Budiarto, 2019).

**TABLE 3.10*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON MINDFULNESS***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Carlson & Brown, 2005.	N1=122 N2=122	Between-group design	<ul style="list-style-type: none"> <li>• Mindful Attention Awareness Scale</li> <li>• Profile of Mood States</li> </ul>	<ul style="list-style-type: none"> <li>• The MAAS seems to have a place in studies looking at how mindfulness affects cancer patients' psychological health, whether or not they also compare cancer patients to nonclinical controls.</li> </ul>
<b>2</b>	Morgan, Masuda, & Anderson, 2014.	N=569	Survey design	<ul style="list-style-type: none"> <li>• The mindful attention awareness scale</li> <li>• Psychological distress and psychological flexibility</li> </ul>	<ul style="list-style-type: none"> <li>• Within this sample, the MAAS revealed a single-dimensional factor structure. Additionally, the MAAS had strong internal consistency, was associated with lower</li> </ul>

					psychological distress levels, and increased psychological flexibility.
3	Bilevicius, Smith, & Kornelsen, 2018.	N=32	Correlational study	<ul style="list-style-type: none"> <li>• The mindful attention awareness scale</li> <li>• TRIO MRI scanning</li> <li>• MP-RAGE sequence</li> <li>• fMRI</li> </ul>	<ul style="list-style-type: none"> <li>• According to the findings, MAAS scores (1) are associated with the functional connectivity of numerous attention-related brain areas, and (2) entail cross-network functional connectivity.</li> </ul>
4	Agarwal & Dixit, 2017.	Meditators =50 Non-meditators = 50	Between-group design	<ul style="list-style-type: none"> <li>• Mindful attention awareness scale</li> <li>• Satisfaction with life scale</li> </ul>	<ul style="list-style-type: none"> <li>• Teenagers who practised meditation reported much higher levels of life happiness, but there was no discernible difference in their attentiveness to the present moment. Between adolescents' life satisfaction and attentive attention awareness, there was no discernible association.</li> </ul>

5	Goh, Marais, & Ireland, 2017.	Meditators =612 Non-meditators = 565	Polytomous Rasch model	<ul style="list-style-type: none"> <li>• MAAS</li> <li>• Brief Multidimensional Measure of Religiousness/Spirituality</li> <li>• Subjective proficiency</li> <li>• Meditation Depth Questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>• The results showed that meditators had higher mean estimates than non-meditators. The analysis identified a group of items as highly discriminating.</li> </ul>
6	Patel, Nivethitha, & Mooventhana, 2018.	N=72	A single group pre-test and post-test experimental design	<ul style="list-style-type: none"> <li>• Emotion Regulation Questionnaire (ERQ)</li> <li>• The Positive and Negative Affect Schedule</li> <li>• MAAS</li> </ul>	<ul style="list-style-type: none"> <li>• According to the study's findings, practising MEMT helps college students better control their emotions, feel good about themselves, and have more positive feelings while also having fewer negative feelings.</li> </ul>

				<ul style="list-style-type: none"> <li>• Self-Compassion Scale</li> </ul>	
7	Kwon & Cheong, 2020.	N=40	A single group pre-test and post-test experimental design	<ul style="list-style-type: none"> <li>• Korean version of the Mindful Attention Awareness Scale</li> </ul>	<ul style="list-style-type: none"> <li>• The average level of mindful attention awareness rose through mantra meditation by 8.67, and the impacts of mindful attention awareness by constitutional mantra meditation rose in the following order: Pitta (11.0), Vata (7.83), and Kapha (7.32). (7.34).</li> </ul>
8	Dvorak & Hernandez-Ruiz, 2021.	N=57	Within-subjects repeated-measures design	<ul style="list-style-type: none"> <li>• Mindful Attention Awareness Scale</li> <li>• Absorption in Music Scale (AIMS)</li> </ul>	<ul style="list-style-type: none"> <li>• The analysis found substantial variations between the stimuli, suggesting that levels of musical immersion may influence how individuals react to auditory cues for mindfulness meditation.</li> </ul>
9	Crowley, Kapitula, &	Meditators =74	Before-after observational	<ul style="list-style-type: none"> <li>• Mindfulness Attention Awareness Scale</li> </ul>	<ul style="list-style-type: none"> <li>• The average level of subjective satisfaction and awareness of mindfulness rose among</li> </ul>

	Munk, 2020.	Non- meditators = 73	study	<ul style="list-style-type: none"> <li>• State Trait Anxiety Inventory</li> <li>• Subjective Happiness Scale</li> </ul>	<p>students taking the meditation course.</p> <p>Comparing the meditation class participants to the psychosocial class participants, mindfulness scores improved and anxiety levels reduced more for the meditation class participants.</p>
<b>10</b>	Budiarto, 2019.	N=229	Adequate measurement model	<ul style="list-style-type: none"> <li>• Nonattachment scale</li> <li>• Mindful Attention Awareness Scale</li> <li>• Basic psychological need satisfaction and well-being</li> </ul>	<ul style="list-style-type: none"> <li>• Meditation experiences significantly differentiate the prediction of trait mindfulness toward nonattachment.</li> </ul>

### **3.13. REVIEWS ON ELECTROENCEPHALOGRAM (EEG) AND MEDITATION**

The Himalayan yoga meditation technique is related with lower 10-11 Hz activity during meditation only, while both directed mind wandering and meditation are related with increased 7-11 Hz alpha activity while practising Vipassana meditation (Braboszcz et al., 2017). Theta, beta, and high gamma activity exhibited less consistent results, while a brief breath awareness meditation was reliably linked to higher alpha power (Colgan et al., 2019). Meditation practitioners show more frontal activation in sustained attention than in reaction inhibition (Bailey et al., 2019). EEG spectra are significantly altered by meditation, with up to a 50% rise and a 24% decrease (Stapleton et al., 2020). Delta, theta, alpha, and low gamma were greater in senior Vipassana meditators at resting baseline, low-alpha and low gamma were higher during focused and attentive meditation, and theta, alpha, and low gamma were higher during loving-kindness meditation (Kakumanu et al., 2018).

In another study, meditation appears to increase state mindfulness in adults (Hunkin et al., 2021). An analysis of young adult novice meditators found that EEG result scores are not a good indicator of mindfulness, meditation practise, mental health status, or long-term progress (Acabchuk et al., 2021). Another study revealed that meditators had greater levels of focus and less mind wandering (Rodriguez-Larios et al., 2021). A study indicated that lower frequencies (alpha and theta) contribute to a meditative experience (Sharma et al., 2018). Training in cyclic meditation enhances creativity, switching the brain's primary gamma activity during creation from the delta activity seen in controls (Shetkar et al., 2019).

**TABLE 3.11*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON EEG AND MEDITATION***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Braboszcz et al 2017.	<ul style="list-style-type: none"> <li>• Vipassana meditators =20</li> <li>• Himalayan Yoga meditators =27</li> <li>• Isha Shoonya Yoga Meditators = 20</li> <li>• Controls = 32</li> </ul>	Comparative Study	<ul style="list-style-type: none"> <li>• EEG Activity</li> <li>• Meditation experience</li> </ul>	<ul style="list-style-type: none"> <li>• Three different meditations show a correlation between daily meditation practise and changes in both state and attribute. Gamma brainwave amplitude increased in three different meditation traditions than in control.</li> <li>• Vipassana practitioners had higher alpha power as a trait, but Himalayan yoga practitioners have lower alpha power.</li> </ul>
<b>2</b>	Colgan, et al. 2019.	<ul style="list-style-type: none"> <li>• 1 Participant</li> </ul>	Multiple-crossover	<ul style="list-style-type: none"> <li>• Intracranial EEG</li> </ul>	<ul style="list-style-type: none"> <li>• When compared to the active control, a brief breath awareness meditation was consistently</li> </ul>

			ABAB single case design		linked to higher alpha power. The effects of theta, beta, and strong gamma activity were less dependable.
3	Bailey et al. 2019.	<ul style="list-style-type: none"> <li>• Meditators = 34</li> <li>• Controls = 28</li> </ul>	Comparative design	<ul style="list-style-type: none"> <li>• 64-channel EEG</li> </ul>	<ul style="list-style-type: none"> <li>• The neuronal activity in areas of the brain associated with attention, such as higher-order processes produced by the frontal lobes and sensory anticipation processes produced by the poster regions, was altered in meditators.</li> </ul>
4	Stapleton et al. 2020.	<ul style="list-style-type: none"> <li>• 223 novice meditators</li> </ul>	Pre-post design	<ul style="list-style-type: none"> <li>• EEG</li> </ul>	<ul style="list-style-type: none"> <li>• The meditation intervention had a significant impact on the EEG spectra in a variety of ways, and the rapidity with which the co-spectra shifted from their pre-meditation to their post-meditation states supported the concept of consciousness.</li> </ul>

5	Kakumanu et al. 2018.	<ul style="list-style-type: none"> <li>• Novice =24</li> <li>• Seniors=22</li> <li>• Teachers=21</li> </ul>	Comparative design	<ul style="list-style-type: none"> <li>• EEG</li> </ul>	<ul style="list-style-type: none"> <li>• The study demonstrates that the brain states are influenced by both the length of meditation practise and role-based skill.</li> </ul>
6	Hunkin, King & Zajac. 2020.	<ul style="list-style-type: none"> <li>• N=68</li> </ul>	Crossover trial	<ul style="list-style-type: none"> <li>• Muse EEG headband</li> <li>• Breath Counting</li> <li>• Meditation Experience</li> </ul>	<ul style="list-style-type: none"> <li>• During a brief meditation, EEG neurofeedback seems to improve state mindfulness in adults. To increase the positive benefits, psychoeducation regarding feedback and the meditation experience may be helpful.</li> </ul>
7	Acabchuk et al. 2020.	<ul style="list-style-type: none"> <li>• Muse group = 26</li> <li>• App group =27</li> </ul>	Pre- and post-intervention design	<ul style="list-style-type: none"> <li>• Muse EEG scores</li> <li>• Mindfulness and distress</li> <li>• Satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>• The findings imply that among young adults who are new to meditation, EEG outcome scores are not a reliable indicator of mindfulness, meditation practise, mental health status, or progress over time.</li> </ul>

8	Rodriguez-Larios, Bracho Montes de Oca and Alaerts, 2021.	<ul style="list-style-type: none"> <li>• Mindfulness = 20</li> <li>• Zen = 8</li> <li>• Vipassana = 9</li> <li>• Controls = 29</li> </ul>	Comparative design	<ul style="list-style-type: none"> <li>• EEG</li> <li>• Meditation Experience</li> </ul>	<ul style="list-style-type: none"> <li>• The subjective experience of meditation and mind-wandering differs between experienced meditators and novices and this is reflected in oscillatory and non-oscillatory components of brain activity.</li> </ul>
9	Sharma, et al. 2018.	<ul style="list-style-type: none"> <li>• Long-term meditators = 21</li> <li>• Controls =21</li> </ul>	Comparative design	<ul style="list-style-type: none"> <li>• 61 channel EEG activity</li> </ul>	<ul style="list-style-type: none"> <li>• Findings show that lower frequencies (alpha and theta) can nevertheless contribute to a contemplative experience. This shows that meditation has a favourable effect on the frontal and parietal regions of the brain, which are involved in processing emotions and cognition and in the regulation of selective and sustained attention.</li> </ul>

10	Shetkar, et al. 2018.	<ul style="list-style-type: none"> <li>• Experimental group = 24</li> <li>• Controls = 24</li> </ul>	Pre- and post-intervention design	<ul style="list-style-type: none"> <li>• Creativity</li> <li>• 64-channel EEG</li> </ul>	<ul style="list-style-type: none"> <li>• The improvement in creativity performance suggests that CM promotes association and increases connection between the frontal and parietal lobes, increasing key stages of creativity like preparation, incubation, and illumination.</li> </ul>
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### **3.12. REVIEW OF SCIENTIFIC LITERATURE ON SOCIAL DESIRABILITY SCALE**

Two models (XI and X2) out of the six short forms of SDS under consideration offer the best indicators of social desirability (Fischer & Fick, 1993). The social desirability measures provided by the three short forms of the scale are good (Lavidas & Gialamas, 2019). The 13 item one is the more suitable of the two short variants, which both produce better fit than the original scale (Sârbescu et al., 2012). The 33-item Marlowe-Crowne scale can be replaced with the 13-item version (Ii & Sipps, 1985; Reynolds, 1982).

**TABLE 3.12*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON SOCIAL DESIRABILITY SCALE***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Fischer & Fick, 1993.	N=390	Confirmatory Factor Analysis	<ul style="list-style-type: none"><li>• Social desirability scale</li></ul>	<ul style="list-style-type: none"><li>• The results showed that (a) two models (XI and X2) provide the best measures of social desirability out of the six short forms of SDS taken into account, (b) improved measures of all the models can be constructed, and (c) improved measures of the dimensions, denial and attribution, thought to measure the latent construct of social approval can also be constructed.</li></ul>

2	Lavidas & Gialamas, 2019.	N=173	Confirmatory factor analysis	<ul style="list-style-type: none"> <li>• Marlowe Crowne Social Desirability scale -13 items</li> </ul>	<ul style="list-style-type: none"> <li>• The three brief forms of the social desirability scale offer adequate measures of social desirability, but the form with the fewest items showed better results than the others.</li> </ul>
3	Sârbescu, Costea, & Rusu, 2012.	N=215	Non-experimental research	<ul style="list-style-type: none"> <li>• Marlowe Crowne Social Desirability scale -13 items</li> </ul>	<ul style="list-style-type: none"> <li>• The 13-item form was the most suitable, with both short versions achieving greater fit than the original scale. In future studies needing the measurement of social desirability, this research supports the use of the MCSDS short forms.</li> </ul>
4	Reynolds, 1982.	N=608	Correlative Study	<ul style="list-style-type: none"> <li>• Marlowe-Crowne Social Desirability Scale</li> <li>• Edwards Social Desirability Scale</li> <li>• Self-report</li> </ul>	<ul style="list-style-type: none"> <li>• This study recommends the 13-item form as a workable alternative to the standard 33-item Marlowe-Crowne scale.</li> </ul>

				<ul style="list-style-type: none"> <li>• General demographic information</li> </ul>	
5	Ii & Sipps, 1985.	N1=233 N2=71 N3=132	Cross-validation	<ul style="list-style-type: none"> <li>• Self-report</li> <li>• Marlowe Crowne Social Desirability (MCSD) scale -13 items</li> </ul>	<ul style="list-style-type: none"> <li>• The authors concluded that this 13-item short form is a viable alternative to the full scale.</li> </ul>

### 3.13. REVIEW OF SCIENTIFIC LITERATURE ON SIMPLIFIED *KUNḌALINĪ* YOGA

Simplified *Kuṇḍalinī* Yoga (SKY) practises have significantly improved their grades and lowered their stress levels (Sugumar & Ponnuswamy, 2018). There is a strong relationship between the three components of simplified *Kuṇḍalinī* yoga (simplified physical exercises, meditation and introspection) (Raghavan & Yasmeen, 2014). SKY practises significantly increase psychological well-being, internal locus of control, memory, sense of support, and significantly lessen fear and anger in mid- and post-assessments (Suresh et al., 2013). After sixteen weeks of training for college women students, both *āsanās* and practices of simplified *Kuṇḍalinī* yoga dramatically increase flexibility (Rajam et al., 2017). Relaxation Exercise has positively influenced the achievement in Mathematics (Gnanaprakasam, 2019). Simplified *Kuṇḍalinī* Yoga is an effective method to enhance Emotional Intelligence following six-month training (Prasath et al., 2018). SKY training show significant effect on the personality and the academic achievement of the students (Krishnan, 2006). In terms of enhancing explosive strength, the simple yoga group outperforms the *Prāṇāyāmā* group and control group (Yuvaraj, 2020). Simplified *Kuṇḍalinī* Yoga has significantly decreased in Depression, Stress and Anxiety (Saradha, 2019).

**TABLE 3.13*****SUMMARY TABLE OF SCIENTIFIC RESEARCH ON SKY***

<b>Sl. No.</b>	<b>Author and year of publication</b>	<b>Sample size (n)</b>	<b>Design</b>	<b>Variables studied</b>	<b>Findings</b>
<b>1</b>	Sugumar & Ponnuswamy, 2018.	Experimental Group = 80 Control Group=80	Pre and post intervention study	<ul style="list-style-type: none"><li>• Academic performance test</li><li>• Stress management test</li></ul>	<ul style="list-style-type: none"><li>• In comparison to the control group, the experimental group had much better academic results and less stress.</li></ul>
<b>2</b>	Raghavan & Yasmeen, 2005.	N=106	Empirical study	<ul style="list-style-type: none"><li>• Simplified physical exercises</li><li>• Meditation</li><li>• Introspection</li></ul>	<ul style="list-style-type: none"><li>• The results indicated strong relationship between the three components of simplified <i>kuṇḍalinī</i> yoga.</li></ul>

3	Suresh, Ramachandran, & Jayachander, 2013.	N=138	Pre and post intervention study	<ul style="list-style-type: none"> <li>• Multi-Dimensional Health Locus of Control Scale</li> <li>• Sense of Support Scale</li> <li>• State and Trait Anxiety Inventory</li> <li>• Psychological wellbeing scale</li> <li>• The Digit Symbol Substitution Test</li> </ul>	<ul style="list-style-type: none"> <li>• The findings demonstrated that the intervention groups significantly improved at both the midpoint and the end of the study in terms of psychological well-being, internal locus of control, memory, sense of support, and a considerable decrease in anxiety and anger. This study suggests that Simplified <i>Kuṇḍalinī</i> Yoga is a thorough, all-encompassing method for promoting health.</li> </ul>
4	Rajam, Saradha, & Nagarasan, 2017.	SKYT=20 YPT=20 Control Group=20	Pre and post intervention study	<ul style="list-style-type: none"> <li>• Sit and reach</li> <li>• Sit-ups</li> </ul>	<ul style="list-style-type: none"> <li>• After sixteen weeks of training with college-aged female students, both the <i>āsanās</i> and the practises of simplified</li> </ul>

					<i>kuṇḍalinī</i> yoga dramatically increased flexibility.
5	Gnanaprakasa, 2019.	Experimental Group=20 Control Group=20	Pre and post intervention study	• Multiple choice question paper	• Results show that Relaxation Exercise has positively influenced the achievement in Mathematics.
6	Prasath, Nagarasan, & Kalavathi, 2018.	Experimental Group=40 Control Group=40	Pre and post intervention study	• Emotional Intelligence Scale	• The study indicates that Simplified <i>Kuṇḍalinī</i> Yoga was an effective method to enhance Emotional Intelligence.
7	Krishnan, 2006.	Experimental Group=250 Control Group=200	Pre and post intervention study	• Personality components	• The training had a considerable impact on the students' personalities and academic performance, according to the results.

8	Yuvaraj, 2020.	Experimental Group I = 15 Experimental Group II = 15 Control Group=15	Pre and post intervention study	<ul style="list-style-type: none"> <li>• Aggression</li> <li>• Academic Performance</li> </ul>	<ul style="list-style-type: none"> <li>• It was identified that the simplified yoga group is better than the <i>Prāṇāyāmā</i> group and control group in improving explosive strength.</li> </ul>
9	Saradha, 2019.	Experimental Group=20 Control Group=20	Pre and post intervention study	<ul style="list-style-type: none"> <li>• Stress and anxiety</li> </ul>	<ul style="list-style-type: none"> <li>• In contrast to the control group, which had no significant decrease in any of the measures, simplified <i>Kundalinī</i> yoga dramatically reduced depression, stress, and anxiety.</li> </ul>