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A Structural Model of Self -confidence, Happiness and Classroom Climate with Academic Achievement among Ninth standard Students

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Abstract
Back Ground:*A positive classroom climate feels safe, respectful, welcoming, and supportive of student learning. Classroom environments that promote empowerment provide many opportunities for students to build their confidence and capacity to speak up, address issues, take risks, and make decisions about what works for them.*
Objective:*To construct and validate a Structural Equation Model (SEM) of linear relationship among the variables of Self- Confidence, Happiness, Classroom Climate and Academic Achievement.*
Methodology:*The study sample comprises 1002 higher secondary school students from Chennai and Tiruvallur districts, and stratified sampling was adopted. Data analysis was done using Structural Equation Modelling (SEM).*
Findings:*The results showed that Classroom Climatepositively affected Academic Achievement.*
Keywords: Self-Confidence, Classroom Climate, Happiness, Path Analysis.

Introduction

Academic success is greatly influenced by self-confidence. Students who are confident in their skills and abilities are more inclined to take on challenges, participate in class, and provide their best effort. Their academic performance improves when they have the self-confidence to take on challenging assignments, ask questions, and seek assistance when necessary. Being happy is a subjective experience, therefore what makes one person happy might not necessarily make another person feel the same way. Every person has their own special sources of happiness and subjective well-being.Creating a joyful and encouraging learning atmosphere where students feel joy, engagement, and well-being is referred to as being happy in the classroom. In order to make students happier and improve their entire educational experience, involves creating a pleasant emotional environment. The atmosphere, setting, and social interactions in a classroom collectively are referred to as the "classroom climate." The social, emotional, and physical factors that affect how students and teachers interact with one another and the learning environment are all included. Respect for one another, inclusion, and a welcoming environment that fosters learning, engagement, and well-being are the hallmarks of a great classroom climate.

School environments, directly or indirectly affected by developing and changing conditions, can be made more dynamic and healthier. In this context, the school climate, among the factors that may affect the positivity of the school atmosphere, can ensure that the school environment is healthy and active. The structure of the school climate, defined as the quality and texture of school life' (Cohen et al. 2009), includes both the abstract school atmosphere (such as relational and belonging feelings) and the more concrete classroom life (daily teacher-student interactions and didactic applications) (Reyes et al. 2012). Given these broad features, research on school climate requires a systemic theoretical approach that offers an overall perspective to understand and interpret the interdependent processes and relationships between individuals and groups (Rudasill et al., 2018).

Welford (2013), "Self-confidence means being aware of when a person is struggling and having the strength and commitment to do something about it". Rufus (2014) "Self-confidence involves self-respect and having the courage, to tell the truth about what you are, what you like and what you believe". Dictionary of Psychology (2018) defines self-confidence as an individual's trust in their abilities, capacities and judgements or belief that they can successfully face day-to-day challenges and demands. According to Neill (2005), self-esteem and self-efficacy, in combination,constitute self-confidence.Self-confidence develops emotional maturity and the capability to assess competencies

pragmatically. Self-confidence does not mean a student can attain anything and everything, even impossible goals.

Previous Studies

Akbari and Sahibzada (2020) reported that self-confidence had a significant effect on the learning process among students, sharing of opinions, developing relations with peers as well as teachers, seeking goals, controlling anxiety as well as developing interest in lessons to learn more effectively were determined by the level of self-confidence.

Raniere et al. (2020) reported that teaching strategies and techniques and teachers' behaviour significantly affectedstudents' satisfaction and self-confidence.

Muhammet İbrahim Akyürek (2022) examined the relationship between school climate and happiness according to primary school students' perceptions. In the study, it was concluded that students' perceptions of school climate and school happiness were high.

Objectives of the study

The purpose of this study is to look into ninth-grade students' self-confidence, happiness, classroom climate, and academic achievement.

- To construct and validate a Structural Equation Model (SEM) of linear relationship among the variables of Self- Confidence, Happiness, Classroom Climate and Academic Achievement.

Hypotheses of the Study

Based on the objective, the hypothesis was formulated for the study

A Path Model relating Self- Confidence, Happiness, Classroom Climate and Academic achievementishypothesised for validation.

Variables

The present investigation attempts to study "Self-Confidence, Happiness, Classroom Climate and Academic achievement in Ninth standard Students".

The **variables** involved areSelf- Confidence, Happiness, Classroom Climate and Academic achievement.

Methodology

The investigators used a survey method in this research. The sample consisted of 1002 higher secondary school students from Chennai and Tiruvallur districts. A stratified sampling technique was used to select the models.

Tools used

The self-confidence scale consists of 42 items, all positive and negative statements. The reliability of this scale was established by Cronbach's Alpha Method. The obtained reliability coefficient is 0.8, revealing that the tool is reliable. The happiness scale consists of 43 items, all positive and negative statements. The reliability of this scale was established by Cronbach's Alpha Method. The obtained reliability coefficient is 0.75, revealing that the tool is reliable. The classroom climate scale consists of 36 items, and all the items are positive and negative statements. The reliability of this scale was established by Cronbach's Alpha Method. The obtained reliability coefficient is 0.7, revealing that the tool is reliable.

Statistical techniques used

This theoretical model was tested using structural equation modelling**(SEM)** as the method of data analysis.

Significant Findings of the study

The following are the significant findings of the study.

A Structural Equation Model (SEM) relating to Self- Confidence, Happiness, Classroom Climate and Academic achievement has been conceptualised and is to be validated using AMOS (Analysis of Moments). Path analysis is a subset of Structural Equation Modeling (SEM) or a form of multiple regression statistical analysis, and it is used to explore causal relationships between two or more variables. SEMis an acceptable fit between a theoretical and an observed covariance matrix. Structural equation modelling was used to analyse the relationship between Self- Confidence, Happiness, Classroom Climate and Academic achievement.

Figure 1
Conceptualized SEM Model for Academic Achievement

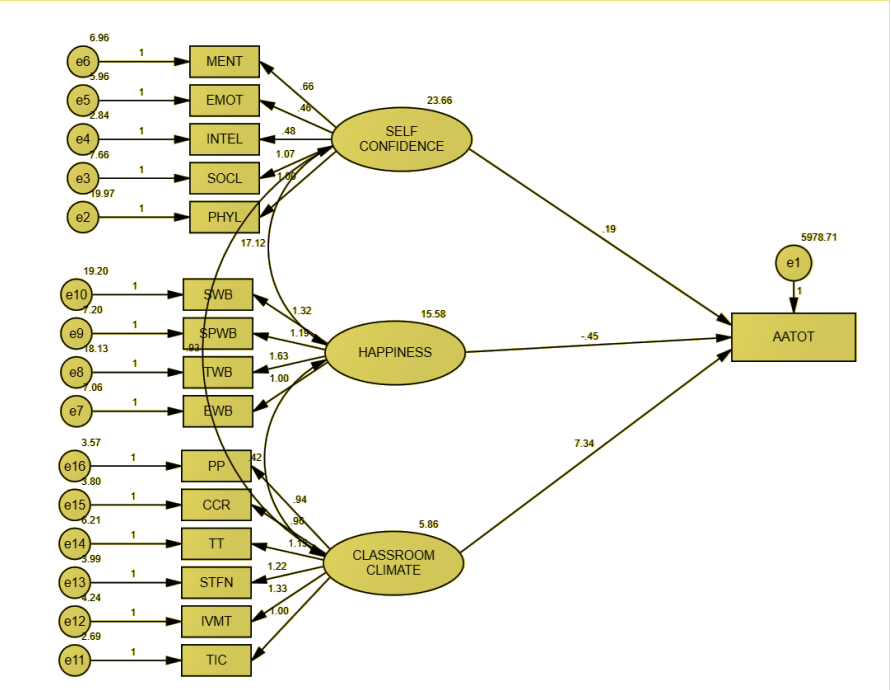


Table 1
The measure of Goodness of Fit

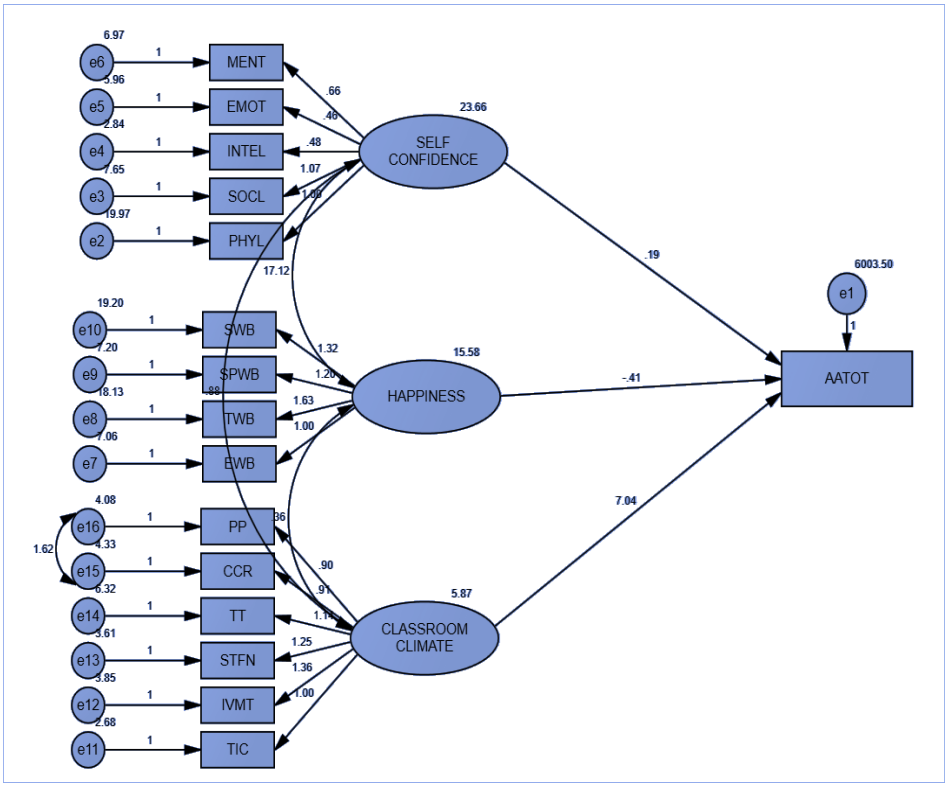
Indices	Value	Suggested Value
Chi-square value	613.761	-
DF	99	-
P value	0.000	>0.05
Chi-square value/DF	6.200	< 5.00
The Goodness of Fit (GFI)	0.925	> 0.90
Normed Fit Index (NFI)	0.941	> 0.90
Comparative Fit Index (CFI)	0.950	> 0.90
Root Men square Residuals (RMR)	5.148	< 0.08
Root Mean Square Error (RMSEA)	0.072	< 0.08

Table 1 contains the goodness of fit measures. The goodness of fit measures is used to assess the fitness of the structural equation model. In this study, p- value of the Chi-Square test is significant.
The testing procedures used IBM SPSS AMOS (Analysis of Moments). Arbuckle (2012) explained the acceptable fit between the theoretical and observed covariance matrix. Using AMOS, an SEM relating to well-being with resilience and self-determination has been conceptualised and validated. The model is built in AMOS, and the diagram is shown in figure 1.
The chi-square value for the CFA model was 613.761 (p <0.000), and the degree of freedom for the model was 99. The fitness indices for the CFA model demonstrated that the model did not meet the

criteria of goodness of fit. The Chi-square value/DF (6.200<5.00) indices do not meet the specified cut-off. Hence, the model does not fit. Thehypothesised structural equation model needs to be revised; some modifications might allow us to achieve a more acceptable model to data fit. The model in Figure 2 was modified by allowing error covariance.

Figure 2

Modified Structural Equation Model for Academic Achievement



Note. Figure 2***A*** *Structural Equation Model (SEM) relating to Academic Achievement with Self-Confidence (with dimensions), Happiness (with dimensions) and Classroom Climate (with dimensions) has been conceptualised and is to be validated using AMOS (Analysis of Moments).*

Model adaptation index values were examined at first without any modification in SEM, as shown in figure 1. Still, it was observed that the model did not meet the goodness of fit criteria. After that, modifications (covariance path was drawn) were made on the classroom climate scale by considering the corrections shown in the model. The covariance path was removed; the components were correlated and modified. It has been observed that the model fulfils the criteria of goodness of fit after these modification procedures. It has been observed that the data obtained with the drawn model is sufficiently compatible, and the model's accuracy is ensured. The goodness of fit coefficients is presented in Table 1. The model in figure 2 was modified by allowing error covariance. The model is built in AMOS, and the diagram is shown in figure 2. The standardised parameter estimates are shown in the graph.

Table 2

The measure of Goodness of Fit

Indices	Value	Suggested Value
Chi-square value	487.075	-
DF	98	-
P value	0.000	>0.05

Chi-square value/DF	4.970	< 5.00
The Goodness of Fit (GFI)	0.941	> 0.90
Normed Fit Index (NFI)	0.953	> 0.90
Comparative Fit Index (CFI)	0.962	> 0.90
Root Men square Residuals (RMR)	5.254	< 0.08
Root Mean Square Error (RMSEA)	0.063	< 0.08

Table 2 contains the goodness of fit measures. Goodness of fit measures is used to assess the fitness of the structural equation model. In this study, p- the value of the Chi-Square test is significant.
The chi-square value for the CFA model was 487.075 ($p < 0.000$), and the degree of freedom for the model was 98. The fitness indices for the CFA model demonstrated that the model fit was good. Comparative Fit Index (CFI)=0.950, Normed Fit Index (NFI)=0.941, Root Mean Square Error of Approximation (RMSEA) = 0.063. A goodness-of-fit is acceptable if GFI, NFI and CFI are over 0.90, and this study used these indexes to assess the model's goodness-of-fit. Table 17.1 shows the results of the regression coefficients for model variables.

Table 3
Regression Coefficients for Model Variable

Independent Variables	**Unstandardised regression co-efficient (Beta)**	**S.E of B.**	**Standardised regression coefficient (Beta)**	**t-value**	**Significant Level**
Social--- Self-confidence	1.068	0.038	0.883	27.977	0.000
Intellectual--- Self-confidence	0.482	0.019	0.812	25.662	0.000
Emotional--- Self-confidence	0.460	0.022	0.676	21.097	0.000
Mental--- Self-confidence	0.662	0.027	0.774	24.364	0.000
Technology Wellbeing-Happiness	1.631	0.052	0.834	31.365	0.000
Spiritual Wellbeing--- Happiness	1.195	0.036	0.869	33.339	0.000
Subjective Wellbeing-- Happiness	1.320	0.048	0.765	27.687	0.000
Involvement--- Classroom Climate	1.359	0.042	0.859	32.326	0.000
Satisfaction--- Classroom Climate	1.250	0.039	0.847	31.681	0.000
Technology inthe classroom-Classroom Climate	1.142	0.044	0.740	26.208	0.000
ConstructiveClassroom-Classroom Climate	0.909	0.036	0.727	25.508	0.000
Peer Pressure---	0.897	0.035	0.733	25.782	0.000

Independent Variables	Unstandardised regression co-efficient (Beta)	S.E of B.	Standardised regression coefficient (Beta)	t-value	Significant Level
Classroom Climate Academic Achievement-Self-confidence	0.187	1.575	0.011	0.119	0.905
Academic Achievement -Classroom Climate	7.040	1.079	0.215	6.523	0.000
Academic Achievement -Happiness	0.411	1.936	0.020	0.212	0.832

Accordingly, The Study Reported that Self-Confidence regressed significantly and positively on Social (Standardized Estimates = 1.068, t-Value= 27.977) and Intellectual (Standardized Estimates = 0.482, t-Value= 25.662) and Emotional (Standardized Estimates =0.460, t-Value= 21.097) and Mental (Standardized Estimates =0.662, t-Value= 24.364) domains. The study estimated that Happiness Regressed significantly and positively on Technology Well-being(standardised estimates = 1.631, t-value= 31.365) and Spiritual Well-being (standardised estimates = 1.195, t-value= 33.339) and Subjective Well-being (standardised estimates = 1.320, t-value= 27.687).further the Study Estimated that the Classroom Climate regressed significantly and positively on Involvement (Standardized Estimates = 1.359, T-Value= 32.326) and Satisfaction (Standardized Estimates = 1.250, t-Value= 31.681) and Technology in Classroom (Standardized Estimates = 1.142, t-Value= 26.208) and Constructive Classroom (Standardized Estimates = 0.909, t-Value= 25.508) and Peer Pressure (Standardized Estimates = 0.897, t-Value= 25.782).Apart from this, it was noted that Classroom Climate was significantly and positively associated with Academic Achievement (Standardized Estimates = 7.040, t-Value = 6.523), Self-Confidence and Happinesswere not significantly and negatively associated with Academic Achievement (Standardized Estimates = 0.187, t-Value= 0.119) and (Standardized Estimates = 0.411, t-Value= 0.212).To summarise, the results showed that Classroom Climatepositively affected Academic Achievement.

Discussion

This study examined the relationship between Self- Confidence, Happiness, Classroom Climate and Academic achievement.The happiness of students can be increased by creating a nice learning environment for them. Similar to this, a helpful and nurturing environment in the classroom has a direct impact on children's satisfaction. These variables are interrelated;therefore, it is advantageous for students' overall well-being, learning involvement, and long-term performance to develop an environment in the classroom that encourages self-confidence and happiness. Schooldevelopment-basedtraining that can positively strengthen this relationship can be organised, and all school stakeholders can be active in this process. Thus, the formation of a healthy and peaceful atmosphere at school will be reinforced and strengthened. In addition, research can be conducted on the effects of variables such as motivation, life satisfaction, psychological resilience, emotional intelligence, effectiveness, academic success, and school culture that can mediate this relationship between self-confidence, classroom climate, happiness and academic achievement. Specifically, classroom climate affects school happiness. Obviously, as the positive school climate improves, student happiness will also increase. Research has revealed that a positive school environment promotes student learning (Maxwell et al. 2017; Reynolds et al. 2017). Besides, school climate was found to be associated with students' mental health(Aldridge and McChesney 2018; Jamal et al. 2013).Bilgin and Taş(2018) found that school climate is effective on students' engagement and well-being. Konold et al. (2017) found that a positive school environment characterised by effective discipline, supportive teacher-student relationships, and academic expectations for students is associated with higher levels of student engagement, lower peer aggression, and thus student happiness.

Conclusion

In conclusion, this research indicated that Classroom Climate positively affected Academic Achievement. Classroom climate is influenced to a high degree by school climate and, to a certain

degree, even reflects it and the culture prevailing in it. This is because both climates, school and classroom, are influenced by the environment and subject to external influences: political, social, cultural, and economical. Self-confident persons perceive themselves to be intellectually adequate, socially competent, emotionally mature, satisfied, decisive, optimistic, successful, independent, forward-moving, fairly assertive, self-reliant, self-assured and having leadership qualities.

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