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Emotional intelligence and locus of control: A correlational study among secondary school students from Kochin metro city

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DOI: https://doi.org/10.22271/27891607.2024.v4.i1c.182

Abstract
The study aimed to find out the relationship between emotional intelligence (EI) and locus of control (LOC) of adolescents from Kochi Metro City. Data were collected from a stratified random sample of 282 secondary school students in the age range 13-17(56 boys and 226 girls), selected from the secondary schools of Kochi metro city (Kerala, India). The data collected by administering the Emotional Intelligence Scale, and Malayalam Version of Rotter's Internal-External Locus of Control Scale, were analysed with the help of SPSS. Gender, type of family and socio-economic status were found to have significant differential influence on emotional intelligence of the students. Girls coming from extended families of high SES were found to have better emotional intelligence than other groups. Though gender exert a significant differential influence on locus of control of the students, neither type of family nor SES have any significant differential effect on LOC. A significant positive correlation exists between EI and LOC of the adolescents from Kochi metro city. No significant difference was observed in the sub-samples based on gender, type of family and socio-economic status with respect to the correlation between the variables.

Keywords: Emotional intelligence, internal locus of control, Kochi metro city

Introduction
Research in the field of emotional intelligence (EI) among adolescents is dynamic and multi-faceted, with ongoing studies exploring various aspects of emotional competence and its implications. EI helps adolescents understand and manage their own emotions, as well as recognize and empathize with the emotions of others. This fosters healthier and more fulfilling relationships. Research suggests that emotional intelligence positively correlates with academic achievement (Herut, Muleta & Lebeta, 2024; Mohzan, Hassan & Halil, 2013) [4, 6]. Adolescents with high EI tend to have better problem-solving skills, cope more effectively with stress, and exhibit greater resilience in the face of challenges. These qualities can lead to improved academic performance and overall success in school (Sarangi & Rath, 2022; Fteiha & Awwad, 2020; Nyarko, Peltonen, Kangaslampi & Punamäki, 2020) [11, 3, 9]. Adolescence is also a period of heightened vulnerability to mental health issues such as anxiety and depression (Povey, Plage, Huang, Gramotnev, Cook, Austerberry & Western, 2022) [10]. Developing emotional intelligence equips adolescents with the tools to recognize and cope with negative emotions, reducing the risk of developing mental health problems and promoting overall well-being.

The internal locus of control is the belief that one's own actions and decisions significantly influence the outcomes in their life. Adolescents with an internal locus of control feel empowered because they believe that they have control over their own destiny (Mouchrek & Benson, 2023) [7]. This belief motivates them to take initiative, set goals, and work towards achieving them (Wei, Ren & Di, 2015) [12]. It fosters a sense of agency and self-efficacy, which are crucial for personal development and success (Ney & Fischweicher, 2021; Evelyn, 2015) [8, 2]. When faced with challenges or setbacks, individuals with an internal locus of control are more likely to respond with resilience (Buddelmeyer & Powdthavee, 2016). Adolescents with an internal locus of control take responsibility for their actions and decisions. They understand that the outcomes in their life are influenced by their own choices and behaviors, rather than external factors or luck. This accountability fosters a sense of ownership and integrity, encouraging adolescents to make thoughtful decisions and learn from their experiences (Maurer, 2023) [5].

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Urbanization has many negative effects on the mental health and emotions of adolescents. Urban living can be fast-paced and highly stimulating, exposing adolescents to increased levels of stressors such as noise pollution, overcrowding, and traffic congestion. Urban environments may expose adolescents to environmental stressors such as pollution, crime, and unsafe neighbourhoods. Exposure to these factors can contribute to feelings of fear, insecurity, and distrust, impacting adolescents' mental well-being and emotional resilience. Urban living often entails exposure to diverse social and cultural influences, which can lead to increased social comparison and pressure to conform to certain norms or standards. Adolescents may experience heightened feelings of inadequacy, self-doubt, or peer pressure, negatively impacting their self-esteem and emotional well-being. Kochi, is a fast-developing city with high population density ($4800/km^2$), with an estimated 2,34,000 adolescents in the secondary school age (13-18 age range). Emotional intelligence and internal locus of control are valuable assets for secondary school students to navigating the complexities of urban life. Individuals who possess high levels of emotional intelligence and an internal locus of control are better equipped to manage stress, build strong relationships, adapt to change, and achieve their goals in urban environments. However, no attempt has been made so far to understand neither the emotional intelligence nor the locus of control of adolescents living in Kochi metro city. In this context, the present study is a modest attempt to explore emotional intelligence, locus of control and the association between the among the secondary school students living in Kochi metro city.

Objectives
The specific objectives of the study are
1. To compare the emotional intelligence of secondary school students from Kochi metro city with respect to gender, type of family and socio-economic status.
2. To compare the internal locus of control of secondary school students from Kochi metro city with respect to gender, type of family and socio-economic status.
3. To find out the relationship between emotional intelligence and locus of control of adolescents in Kochi metro city.
4. To compare the sub-samples of adolescents in Kochi metro city with respect to the relationship between emotional intelligence and locus of control.

Hypotheses
The following null hypotheses were tested for the study
1. There is no significant difference in the emotional intelligence of secondary school students with respect to gender, type of family and socio-economic status.
2. There is no significant difference in the internal locus of control of secondary school students with respect to gender, type of family and socio-economic status.
3. There is no significant relationship between emotional intelligence and locus of control of secondary school students in Kochi metro city.
4. There is no significant difference among sub-samples of adolescents in Kochi metro city with respect to the degree of relationship between emotional intelligence and locus of control.

Methodology: The cross-sectional descriptive study employed normative survey method to collect data from a stratified random sample of 282 secondary school students (Boys = 56; Girls = 226 girls) in the age range 13-18 (Mean age = 14.92; SD = 0.93), representing the population of secondary school students living within the revenue boundaries of Kochi metro city. Stratification was done on the basis of Type of Management (Government, Aided and unaided) and also the Bard of Affiliation of the schools (KBPE/DHSE, CBSE, CISE), and also to the Grade Level of the students (Std. VIII to Std. 12). The data were collected by administering the Emotional Intelligence Scale for Secondary School Students [EISS] (Arjunan & Apsara, 2016) and the Malayalam Version of Rotter's Internal-External Locus of Control Scale [IELCS]. The EISS is a 50-item Likert-type rating scale covering five domains of emotional intelligence, *viz.*, Self-awareness, Self-regulation, Motivation, Empathy, and social skills. The EISS has been reported to have a concurrent validity of 0.78 and test-retest reliability of 0.84. The IELCS is a 32 forced-choice items, 23 of those items being designed to measure the locus of control expectancies and the remaining 9 being filler items. Each item consists of a pair of statements. The respondents have to choose between an internal and an external alternative. The instrument was reported to have an external validity of 0.93 and a test-retest reliability (four weeks interval) of 0.88. A personal data sheet was also administered so as to collect personal information needed for the study. The data were consolidated in a spread-sheet and analysed descriptively and inferentially by using SPSS.

Analysis and Interpretation
The boys and girls were compared with respect to the EI scores so to find out the differential influence of gender in the distribution of emotional intelligence in secondary school students of Kochi metro city. Table 1 presents the data and results of the independent sample t-test performed.

Table 1: Comparison of the emotional intelligence of boys and girls

Sub-samples	Statistical Indices				t-value	Sig.
	N	M	SD	SE$_M$		
Boys	56	121.75	15.97	2.13	3.684	.001
Girls	226	129.73	14.14	0.94		

The t-value estimated is significant beyond 99.9% confidence interval, revealing the presence of a true difference between secondary school boys and girls regarding their emotional intelligence. Scrutiny of the mean estimates exposes that the girls excel the boys in their emotional intelligence. Adolescents from nuclear families and extended families were compared with respect to their emotional intelligence to find out the significant difference, if any, between the groups. Table 2 presents the data and result of the t-test done incidentally.

Table 2: Comparison of the EI of adolescents from nuclear and extended families

Sub-samples	Statistical Indices				t-value	Sig.
	N	M	SD	SE$_M$		
Nuclear	126	126.06	14.59	1.30	2.142	.05
Extended	156	129.84	14.87	1.19		

There is significant difference between secondary school students from nuclear families and extended families

regarding their emotional intelligence (t = 2.142; *p*<.05). Inspection of the mean estimates shows that adolescents from extended families outshine their counterparts from nuclear families in their emotional intelligence. Students

from high, average and low socio-economic status were compared to find out the differential influence of SES on emotional intelligence. The data and result of the one way ANOVA performed in this context is given in Table 3.

Table 3: Comparison of the emotional intelligence of students from high, average and low socio-economic status (Summary of ANOVA)

EI	Sum of Squares	DF	Mean Square	F	Sig.
Between Groups	10298.334	2	5149.167	27.841	.000
Within Groups	51601.411	279	184.951		
Total	61899.745	281			

The F-value obtained is significant (F = 27.841; *p*<.001), exposing that emotional intelligence of secondary school students is a function of the socio-economic status of their

family. Scheffe's post-hoc test was further performed to find out the groups which show significant difference, the result of the same is given in Table 4.

Table 4: Post hoc tests for comparison of students from different socio-economic status with regard to their emotional intelligence

(I) SES	(J) SES	(I-J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
LOW	Average	-15.415*	2.317	.000	-21.12	-9.71
	High	-19.926*	2.873	.000	-27.00	-12.85
AVERAGE	Low	15.415*	2.317	.000	9.71	21.12
	High	-4.510	2.195	.123	-9.91	.89
HIGH	Low	19.926*	2.873	.000	12.85	27.00
	Average	4.510	2.195	.123	-.89	9.91

* The mean difference is significant at the 0.05 level

The results of the post-hoc test show that the significant difference exists between students from low and average SES (Mean difference = 15.415; *p*<.001) and between students from low and high SES (Mean difference = 19.926; *p*<.001); in both the case students from low SES trail behind their counterparts from average and high SES in their emotional intelligence. No true difference, however, was noticed between students in the average and high SES with respect to their emotional intelligence. The boys and girls were compared with respect to their IELCS scores to find out the differential influence of gender on locus of control. Table 5 presents the result of the independent sample t-test carried out in this regard.

Table 5: Comparison of the internal locus of control of boys and girls

Sub-samples	Statistical Indices				t-value	Sig.
	N	M	SD	SE$_M$		
Boys	56	14.27	3.16	.42	2.00	.05
Girls	226	15.16	2.94	.19		

Comparison of boys and girls with respect to their internal locus of control scores produced a t-value which is significant at 95% confidence interval (t = 2.00; *p*<.05). A

closer observation of the mean scores revealed that girls are more internally oriented than their male counterparts. Students from nuclear families and extended families were compared in terms of IELCS scores to find out the significant difference, if any, between the groups. The data and result of the independent sample t-test done incidentally is given in Table 6.

Table 6: Comparison of the locus of control of adolescents from nuclear and extended families

Sub-samples	Statistical Indices				t-value	Sig.
	N	M	SD	SE$_M$		
Nuclear	126	14.82	2.921	.260	0.829	NS
Extended	156	15.12	3.063	.245		

The t-value estimated is not significant (t = 0.829; *p*>.05), revealing that students from nuclear families and extended families are almost alike in their locus of control. Students from High, Average and Low SES were compared with respect to their IELCS scores to find out the differential influence of socio-economic status on locus of control of secondary school students. Table 7 presents the data and result of the one-way ANOVA performed in this regard.

Table 7: Comparison of the internal locus of control of students from high, average and low socio-economic status (Summary of ANOVA)

ILC	Sum of Squares	DF	Mean Square	F	Sig.
Between Groups	19.257	2	9.628	1.071	NS
Within Groups	2507.655	279	8.988		
Total	2526.911	281			

The F-ratio estimated on comparing the internal locus of control of students from high, average and low socio-economic status is not significant (F = 1.071; *p*>.05); showing that no true difference exists in the mental orientation of students from different socio-economic status.

The relationship between emotional intelligence and internal locus of control for the total sample and different sub-samples were estimated by using product-moment method. Table 8 presents the data and results of the correlational analysis.

Table 8: Relationship between emotional intelligence and locus of control of secondary school students from Kochi metro city (Total sample and sub-samples)

Group	Samples	N	r	SEr	Sig.	rPOP .05 level	rPOP .01 level
Whole	Total	282	0.329*	0.053	.001	0.23 - 0.43	0.19 - 0.47
Gender	Boys	56	0.363*	0.116	.01	0.14 - 0.59	0.06 - 0.66
Gender	Girls	226	0.298*	0.061	.001	0.18 - 0.42	0.14 - 0.45
Family Type	Nuclear	156	0.323*	0.072	.001	0.18 - 0.46	0.14 - 0.51
Family Type	Extended	126	0.329*	0.071	.001	0.19 - 0.47	0.15 - 0.51
SES	High	48	0.151	0.141	NS	-0.13 - 0.43	-0.21 - 0.51
SES	Average	192	0.345*	0.064	.001	0.22 - 0.47	0.18 - 0.51
SES	Low	42	0.473*	0.120	.01	0.24 - 0.71	0.16 - 0.78

The value of coefficient of correlation (r) between Emotional Intelligence and Internal Locus of Control for the total group of adolescents was estimated to be 0.329 with its population values positioned between 0.23 and 0.43 at 95% confidence interval and between 0.19 and 0.47 at 99% confidence interval. The standard error (SEr) of the correlation for the total group was estimated to be 0.053. All the obtained r-values are positive and significant at 0.01 level' except that for High SES, where the coefficient of correlation between the variables is not significant. The coefficients of correlation between emotional intelligence and locus of control of students from Kochi metro city were compared to find out whether the groups differ significantly with respect to the degree of relationship between the variables. Fisher's z-transformation test was used to find out the significance of the differences between the correlations in sub-samples compared. The result of the analysis is given in Table 9.

Table 9: Comparison of sub-samples with respect to the correlations between emotional intelligence and locus of control

Groups		Sub-samples	N	r	r_correct	z	Zobserved	Sig.
Gender		Boys	56	0.363	0.36	0.377	0.44	NS
Gender		Girls	226	0.298	0.30	0.310	0.44	NS
Type of Family		Nuclear	156	0.323	0.32	0.332	0.09	NS
Type of Family		Extended	126	0.329	0.33	0.343	0.09	NS
SES	a)	High	48	0.151	0.15	0.151	1.29	NS
SES	a)	Average	192	0.345	0.35	0.365	1.29	NS
SES	b)	High	48	0.151	0.15	0.151	1.64	NS
SES	b)	Low	42	0.473	0.47	0.510	1.64	NS
SES	c)	Average	192	0.345	0.35	0.365	0.83	NS
SES	c)	Low	42	0.473	0.47	0.510	0.83	NS

As evident from Table 9, none of the critical ratios obtained on comparing the R-values of the sub-samples is significant. It shows that the sub-samples are almost identical with regard to the relationship between the variables. To put differently, the sub-samples under comparison do not differ significantly with respect to the degree of relationship between emotional intelligence and internal locus of control.

Conclusion
The results of the study show that both emotional intelligence and internal locus of control are normally distributed in the population of secondary school students from Kochi metro city. Gender is a significant factor in discriminating secondary school students from Kochi metro city on the basis of their emotional intelligence; the girls are smarter than boys in managing their emotions and dealing with the emotions of others. Type of family exert a

significant decisive influence on the emotional intelligence of secondary school students of Kochi metro city. Compared to a nuclear family, an extended family is more conducive for developing the ability to perceive, understand, manage and handle emotions in adolescents. Socio-economic status of the family significantly influences the development of abilities to manage one's own emotions and that of others. Being a member of low socio-economic status is damaging for the balanced development of the emotions of adolescents. While gender exert a significant differential effect on internal locus of control of secondary school students from Kochi metro city, neither the family type nor the socio-economic status has any significant differential influence on their internal locus of control. The girls are significantly more internally oriented than the boys. There is significant positive correlation between emotional intelligence and internal locus of control in the total sample and all the sub-samples (except for the high SES group) of secondary school students from Kochi metro city. The sub-samples are almost alike with respect to the degree of association between their emotional intelligence and internal locus of control.

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