

An Examination of Intellectual, Emotional, Social and Adversity Quotient Toward Students' Academic Success

*Johanudin Lahap¹, Noradilla Khalid, Nur Shahirah Md Isa¹, Noraslinda Mohd Said¹, Joesri Mohd Saber¹, Serli Wijaya²

¹Universiti Teknologi MARA, Cawangan Pulau Pinang, Malaysia

²Petra Christian University, Surabaya, Indonesia

Email: *johanudin785@uitm.edu.my, 2020470998@student.uitm.edu.my,
2020477564@student.uitm.edu.my, noraslinda698@uitm.edu.my, joesr630@uitm.edu.my,
serliw@petra.ac.id

Corresponding Author: Johanudin Lahap

Abstract: In understanding students' learning and student academic achievement, some factors need to be given attention. The primary objective of this research is to investigate a distinct type of quotient that affects students' learning. Previous research has revealed that Intellectual Quotient (IQ), Emotional Quotient (EQ), Social Quotient (SQ), and Adversity Quotient (AQ) are among the most significant variables influencing student academic success. This research employed a quantitative method, and university students were the target sample. In this study, a total of 211 responses from 326 samples were successfully collected via a survey questionnaire. A Pearson's Correlation was used to measure the relationships between the independent and dependent variables. The analysis revealed that the four quotients were found to have a significant relationship with students' learning; however, the degree of significance varies. The most significant finding from this research was that the adversity quotient exhibits the strongest relationship with students' academic success. This study is important to academicians because understanding students' traits can assist lecturers in enhancing and strengthening their teaching and learning methodologies, and improving the content of lectures for students, thereby producing successful students academically.

Keywords: *Intelligence Quotient (IQ), Emotional Quotient (EQ), Social Quotient (SQ), Adversity Quotient (AQ), Students' Success in Academics.*

1. Introduction and Background

Producing the best graduates is one of the most important and challenging objectives of institutes of higher learning. Today, it has become more challenging for universities to formulate the best strategy to produce high-quality students due to technological advancement, economic landscape, and other factors that change rapidly. This study is conducted to examine how students' intelligence, emotional, social, and adversity quotient influence the learning process. Past studies revealed that the learning process for students depends on their ability to manage and overcome challenges. For that reason, not every learner has the ability to overcome obstacles and difficulties during the learning process, which certainly has an impact on student progress and academic success. Tarmedy, Buhari, and Mulyadi (2016) posited that intellectual and emotional quotient alone are not sufficient to assist students in achieving better academic results. If a student has a superior intellectual and emotional quotient, but does not possess a strong work ethic and a lack of perseverance, the learning process would be meaningless. For that reason, this study is conducted to uncover the importance of students having important quotients through their learning process.

2. Literature Review

Intelligence Quotient (IQ)

A study by Khan (2019) revealed that a person's psychological age compared to their chronological age can be used to measure someone's intellectual attributes. The ability to reason, or IQ, is tested by looking at students' short- and long-term memory, knowledge, and logical thinking. A student's intellectual quotient may differ between intense concentration and mind-wandering (Bolaji & Friday, 2025). The ability to understand, process, and regulate one's environment, as well as to follow instructions, is known as the intelligence quotient (Soemaryani, 2017). The main function of IQ is to resolve logical problems or tactical issues, and there are steps in understanding IQ, namely logical thought, analysis ability, and in-depth understanding (Soemaryani, 2017). Wiratna and Hamdiah (2020) added that the notion of intelligence quotient (IQ) comprises the evaluation of a

person's ability to observe, analyze and interpret details intensely. The mental capacity to organize, apply, understand, solve a problem, follow rules, communicate, and solve complicated mathematical problems is also known as the intelligence quotient (Isnain, 2021). He added that IQ can also be explained by someone's ability to think logically, to use numbers, and mathematical symbols to solve complex problems. The intelligence quotient (IQ) is also known to assist someone in developing self-competencies; in other words, practice makes perfect (Peter and Unimke, 2025). Nurwahidah, Kartini, and Angela (2021) asserted that learning attainment characteristics are positively related to intelligence quotient and student success. A study from Wiratna and Hamdiah (2020) examined a group of students where they mixed students with high IQ levels and a group of students with low IQ levels in exams, and it is not a surprise that students with high IQ levels surpassed the achievement of students with low IQ levels. Thus, the intelligence quotient was seen to be important in the process of teaching and learning. For that reason, one hypothesis is offered:

H1: *There is a significant relationship between intelligence quotient and students' academic success.*

Emotional Quotient (EQ)

A study by Kucukkaragoz (2020) revealed that a child's emotional quotient is mainly influenced by the socioeconomic status and educational background of their parents. He added that, unlike cognitive intelligence (IQ), emotional intelligence can be developed during all stages of someone's life. Cognitive and emotional quotient interact dynamically with one another (Huda, 2021). She added that a person's emotional intelligence was derived from self-motivation, feelings, and empathy. Someone who masters emotional intelligence is likely to have the ability to distinguish, understand, and control their emotions and be able to control them towards others (Yotha, Khaopraay, Narkprom, & Rungruang, 2023). According to Khan (2019), when compared to the intellectual quotient, the emotional quotient is known to be a better indicator of understanding someone's characteristics. Research by Soemaryani (2017) discovered that emotional intelligence helps someone's emotional expression and the process of developing self-persistency. According to Nguyen, Chau & Nhi (2022), a person with a high level of emotional quotient can easily control their emotions and is a good decision maker. For that reason, emotional quotient was seen to be an important facet of students' academic success. Therefore, a hypothesis is recommended:

H2: *There is a significant relationship between emotional quotient and students' academic success.*

Social Quotient (SQ)

Social intelligence can be defined as the ability to interact with people effectively and the ability to understand human behavior appropriately (Widodo, Suendarti, & Hasbullah, 2020). Zakirova and Frolova (2014) supported that contention by suggesting that effective interpersonal communication and social adaptability depend on this facet. Someone with high social intelligence was found to be able to solve problems objectively (Soemaryani, 2017). Hashem (2021) explains that social intelligence is also one of the crucial factors in determining someone's success, and it builds self-confidence, resilience, and a sense of positivity. He added that someone who manages to understand, interact, and act appropriately towards different situations was found to master the social quotient. A study revealed that social intelligence increases someone's sociability and strengthens social relationships among peers (Jack & Oguntayo, 2020). Hence, social intelligence was seen to be important because, if a student were to be successful in academics, they must be able to socialize with friends, lecturers, and support staff in the university. One hypothesis for social quotient is offered, and they are:

H3: *There is a significant relationship between social quotient and students' academic success.*

Adversity Quotient (AQ)

A person's ability to deal with difficulties and be able to turn them into opportunities is known as the adversity quotient. Scholars postulated that a person's performance correlates well with adversity quotient (Safi'i, Muttaqin, Hamzah, Chotimah, Junaris, & Rifa'i, 2021). The ability to face challenges perseveringly was also part of the definition of the adversity quotient (Juwita & Usodo, 2020). They added that different individuals have different skills to solve and overcome problems. Additionally, adversity quotient also describes someone's trait, efficiency, and effectiveness (Stoltz, 2019). Stoltz further commented that some people turn their difficulties into opportunities and work harder to achieve success, which inspires them to take positive actions and develop a good strategy to overcome problems. According to Jumareng and Setiawan (2021), the capacity of someone to overcome difficulties and obstacles strengthens someone's adversity quotient. A person who has a high degree of adversity quotient in general was found to easily overcome challenges and solve a problem effortlessly (Hulaikah, Degeng & Murwani, 2020). To support this contention, to possess an adversity quotient

is seen to be imperative to students, because the learning process requires students to analyze, synthesize, understand, and make decisions towards difficult situations in the learning process. Hence, one hypothesis is offered for this reason:

H4: *There is a significant relationship between the adversity quotient towards students' success in academics.*

Students' Success in Academics

Learning process can be defined as the progression of gaining knowledge, and student success in academics is the outcome of it; these two were found to be highly correlated (Tarmedi, Buhari, & Mulyadi, 2016). According to Kustyarini (2020), students' positive reaction to the class lecture was found to influence students' learning. The success of student learning is highly influenced by how students perceive active learning, e.g., think-pair-share exercises, jigsaw discussions, and even simply pausing for clarification during a lecture (Davidoff and Jayusi, 2025). Previous studies have revealed that students with strong academic performance are likely to have a bright future in employment and career development. Furthermore, student learning is a result of consistent learning (Bhardwaj, Zhang, Tan, and Pandey, 2025). A study by Shoib, Shamer, and Iqbal (2025) revealed that college students who scored higher GPAs (Grade Point Averages) tend to have a more fulfilling life, while those with lower GPAs are more likely to struggle in their future; however, emotional, social, and adversity quotient were found to assist low-grade students. The relationship between an effective learning process and successful learning outcomes was found to be the key to students' academic success (Kutsyarini, 2020). According to Nurwahidah, Kartini, and Anggela (2021), students' learning achievement in class is closely tied to their intellectual quotient (IQ), meaning that the higher the students' IQs, the higher the chance for them to achieve excellent academic results. Nevertheless, other than intellectual quotient, emotional, social, and adversity quotient cannot be neglected in the process of learning.

3. Methodology

In this study, the researchers employed a quantitative approach to assist in examining, analyzing, and producing the results for this study. A set of questionnaires is developed as a tool to collect valuable data. The questions/items for this study were adopted from Bonwell (1995) and Silberman (1996) for intellectual quotient, as for emotional quotient, Petrides, Frederickson, and Furnham's (2004) works were adopted. For the social quotient, Suyono's (2007) study was adopted, and Stodolski's (1997) research on the adversity quotient was found to support this study. The measure for students' academic success was adopted from Cook, Heat, and Thompson's (2000) work.

Table 1: Instrumentation

NO	QUOTIENT	QUESTIONS	YEAR
1	Intelligence Quotient	1. I actively express opinions related to the material presented by the lecturer. 2. I always participate in groups working on/ discussing the task given. 3. I can explain the subject matter well.	(Bonwell, 1995) and (Silberman, 1996)
2	Emotional Quotient	1. I often agree to do something only because I do not want to disappoint someone. 2. Others tell me that I rarely speak about how I feel. 3. It is easy for me to make friends.	Petrides, Frederickson, and Furnham (2004)
3	Social Quotient	1. I can understand and be sensitive to the needs and rights of other people. 2. I can adjust (presence) in certain situations. 3. I can be trustworthy.	(Suyono, H. 2007)
4	Adversity Quotient	1. I know how to deal with problems in my learning. 2. I have the learning skills I need. 3. When I get advice and guidance, I do my best for my achievement.	(Stoltz, 1997)

5	Students' Success in Academic	1. Weigh the pros and cons of possible solutions to a problem. 2. Make sure that all group members have the opportunity to contribute to group activities and outcomes. 3. Develop ways to resolve conflict and reach an agreement in a group.	(Cook, Heath, and Thompson. 2000)
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As for sampling in this study, students who are undergoing studies in Hospitality Management [undergraduate and diploma students] are chosen. This study employed probability sampling (stratified sampling) because this study targeted respondents with a specific characteristic, and they are UiTM students from the Faculty of Hotel and Tourism Management in Penang. Hence, respondents who are undergoing hospitality management courses from the Faculty of Hotel and Tourism Management, UiTM Permatang Pauh, will only be selected. In other words, students who do not fit the sampling characteristics in the screening process were omitted. Another reason was that it guarantees that each stratum is fairly represented in the sample, as well as lowering sampling error and group variability. The sample size was calculated using Rao Soft to decide the exact number of sample of students for the survey. From the 2,123-student population of the Faculty of Hotel and Tourism Management, UiTM Penang Branch Campus, 326 students were used as the sample size (n). In this research, a total of 211 responses were successfully collected, representing 64.72% of the total sample size. The researcher used a survey questionnaire to collect the data, and a 6-point Likert scale was employed to measure the degree of acceptance towards each question. The scale consists of the following: (1) Strongly Disagree, (2) Disagree, (3) Neither agree nor disagree, (4) Somewhat agree, (5) Agree, and (6) Strongly agree. The questionnaire contains six sections (6), and they are questions related to demographics, intelligence quotient, emotional quotient, social quotient, adversity quotient, and students' success in academics. The questionnaire link was sent to respondents via social media and e-mail. The collected data were then transferred to Microsoft Excel and moved to Statistical Package for Social Sciences (SPSS) for further in-depth statistical analysis.

4. Results

Demographics

This section presents the profile of respondents in this study, from 211 respondents, 131 of whom were female, representing 62.1% of the sample population, and 80 were male, representing 37.9%. In this sample, the majority of the respondents were found to be female. The highest age range of respondents, representing 60.2% of the sample, is derived from the respondents from the age range of 21 to 23 years old (21.3%), and the second-highest age range of respondents fell between 24 to 26 years old. Additionally, 18.5% of respondents who were 18 to 20 years old made up the smallest age group of the respondents. Respondents with a degree qualification were the highest, representing 56.4% of the total respondents, and 43.6% of the sample hold a diploma. According to the data gathered, hotel management students made up most of the respondents, which represents 129 students (61.1%), and the remaining 82 students were from the culinary arts management program (38.9%). Malay students account for 210 students (99.5%), and Bajau represents 0.5% of the sample.

Table 2: Profile of Respondents

Demographic variables	Categories	Frequency	Percentage (%)
Gender	Female	131	62.1
	Male	80	37.9
	Total	211	100.0
Age	18 - 20	39	18.5
	21 - 23	127	60.2
	24 - 26	45	21.3
	27 - 29	0	0
	Total	211	100.0
Level of Education	Diploma	92	43.6
	Degree	119	56.4

	Total	211	100.0
Course	Hotel Management	129	61.1
	Culinary Arts	82	38.9
	Management		
	Total	211	100.0
Race	Malay	210	99.5
	Bajau	1	0.5
	Total	211	100.0

Reliability and Validity Test

A pilot study was conducted on 40 respondents to measure the degree of reliability and validity of each variable: intelligence quotient, emotional quotient, social quotient, adversity quotient, and students' success in academics, each with three (3) items. Intelligence, emotional, and social quotient Cronbach Alpha values are 0.915, 0.770, and 0.885, respectively. Meanwhile, the adversity and students' success in academics shared the same value, which is 0.903. The result is depicted in Table 3.

Table 3: Reliability and Validity Test

Variable	Cronbach's Alpha	No. of Item
Intelligence quotient	0.915	3
Emotional quotient	0.770	3
Social quotient	0.885	3
Adversity quotient	0.903	3
Students' success in academic	0.903	3

Mean and Standard Deviation

Intelligence Quotient

From the analysis of mean and standard deviation for intelligence quotient, I always participate in groups in working on discussing the task given, scoring the highest mean with 4.3555 (SD=1.26178). The second question [I actively express opinions related to the material presented by the lecturer] records the second-highest score of 4.2417 (SD=1.19657) and the third question [I can explain subject matter well] shows the lowest mean score of 4.2180 (SD=1.23822).

Table 4: Mean and Standard Deviation for Intelligence Quotient

Statement	N	Mean	SD
I always participate in groups in working on/ discussing the task given.	211	4.3555	1.26178
I actively express opinions related to the material presented by the lecturer.	211	4.2417	1.19657
I can explain the subject matter well.	211	4.2180	1.23822

Emotional Quotient

For emotional quotient, the first question [I often agree to do something only because I do not want to disappoint someone] has the highest mean score of 4.4360 (SD=1.25335), the second question [It is easy for me to make friends] received the second-highest mean score of 4.3175 (SD=1.37966) and the third question [Others tell me that I rarely speak about how I feel], showed the lowest mean score of 4.3128 (SD=1.35111).

Table 5: Mean and Standard Deviation for Emotional Quotient

Statement	N	Mean	SD
I often agree to do something only because I do not want to disappoint someone.	211	4.4360	1.25335
It is easy for me to make friends.	211	4.3175	1.37966
Others tell me that I rarely speak about how I feel.	211	4.3128	1.35111

Social Quotient

Next, for the social quotient. "I can be trustworthy" was the highest mean score from the analysis with 4.5071 (SD=1.25117). "I can understand and be sensitive to the needs and rights of other people," showed the second-highest mean score of 4.4123 (SD=1.27079). Besides, the statement "I can adjust (presence) in certain situations" was the lowest mean score of 4.3365 (SD=1.21716).

Table 6: Mean and Standard Deviation for Social Quotient

Statement	N	Mean	SD
I can be trustworthy.	211	4.5071	1.25117
I can understand and be sensitive to the needs and rights of other people.	211	4.4123	1.27079
I can adjust (presence) in certain situations.	211	4.3365	1.21716

Adversity Quotient

Then, for the adversity quotient. "When I get advice and guidance, I do my best for my achievement," was the highest mean with 4.5261 (SD=1.12251). "I have the learning skills I need." received the second-highest mean score of 4.4408 (SD=1.19525). The statement of "I know how to deal with problems in my learning" was the lowest mean score of 4.3318 (SD=1.18478).

Table 7: Mean and Standard Deviation for Adversity Quotient

Statement	N	Mean	SD
When I get advice and guidance, I do my best for my achievement.	211	4.5261	1.12251
I have the learning skills I need.	211	4.4408	1.19525
I know how to deal with problems in my learning.	211	4.3318	1.18478

Students' Success in Academic

Lastly, for students' success in academics, the analysis showed, "Weigh the pros and cons of possible solutions to a problem." It was the highest mean, with 4.3791 (SD=1.21825). "Make sure that all group members have the opportunity to contribute to group activities and outcomes" was the second-highest mean score of 4.2559 (SD=1.32410). The statement "Develop ways to resolve conflict and reach agreement in a group" received the lowest mean score of 4.2038 (SD=1.29879).

Table 8: Mean and Standard Deviation for students' success in academic

Statement	N	Mean	SD
Weigh the pros and cons of possible solutions to a problem.	211	4.3791	1.21825
Make sure that all group members have the opportunity to contribute to group activities and outcomes.	211	4.2559	1.32410
Develop ways to resolve conflict and reach an agreement in a group.	211	4.2038	1.29879

Pearson Correlation

The tables below show the correlation analysis for intelligence quotient, emotional quotient, social quotient, and adversity quotient towards students' success in academics. The findings of this correlation analysis between intelligence quotient and students' success in academics are shown in Table 9, where intelligence quotient is the independent variable and students' success in academics is the dependent variable. Analysis revealed that there was a positive relationship between intelligence quotient and students' success in academics, which is .714, more than 60%.

Table 9: Pearson's Correlation Overall Analysis

		IQ	E_Q	SQ	AQ	SSA
IQ	Pearson Correlation	1	.697**	.741**	.848**	.714**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	211	211	211	211	211
E_Q	Pearson Correlation	.697**	1	.754**	.683**	.646**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	211	211	211	211	211
SQ	Pearson Correlation	.741**	.754**	1	.789**	.748**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	211	211	211	211	211
AQ	Pearson Correlation	.848**	.683**	.789**	1	.782**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	211	211	211	211	211
SSA	Pearson Correlation	.714**	.646**	.748**	.782**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	211	211	211	211	211

** . Correlation is significant at the 0.01 level (2-tailed).

5. Discussion

Based on the study, a few discussions were offered. Firstly, it was found that there is a significant positive relationship between intelligence quotient and academic success in academics of the selected students in this study. Since intelligence is regarded as one of the most significant cognitive variables responsible for the variances in accomplishment scores, intelligence and academic performance are distinct but linked concepts (Akubuilu, Iloh, Onu, Ayuk, Ubesie, & Ikefuna, 2020). Secondly, there is a mild positive relationship between the emotional quotient and the academic success of the selected students in this study. According to Akpur (2020), the cognitive domain of emotional intelligence is now recognized as a critical competence for academic achievement. Given the favorable effects of higher emotional intelligence on mood states, it is especially beneficial when people experience difficulties when working on and doing difficult tasks because it makes stress, irritation, helplessness, etc., tolerable. A person with emotional intelligence has a solid foundation from which to build self-adjustment, life skills, and success in school, society, and the workplace (Sitsira, 2020).

Thirdly, there is a significant relationship between the Social Quotient and the student's success in academics of the selected student in this study. According to research, people with higher social intelligence generally outperform those with lower social intelligence in terms of academic achievement (Kharluni, 2020). This suggests that if students want to succeed academically, they should start by raising their social intelligence because it is closely related to academic achievement (Kharluni, 2020). Lastly, the Adversity Quotient has a high positive relationship with the students' success in academics of the selected students in this study. Previous research demonstrated the various benefits of the adversity quotient aspect concerning student academic achievement and efficiency in educational institutions (Suheri Setyosari, Utaya, & Djatmika, 2021). To adjust to the new learning environment, students must be able to maintain self-control. Therefore, for students to overcome learning obstacles, students must develop and strengthen their Adversity Quotient (AQ).

Limitation/Delimitation

In this research, some limitation was found to appear; the sampling is rather small as the study tries to establish a preliminary study that can be further extended to a bigger sample. The study period was only 6 months, as a longer time is needed to reach a larger sample that presumably includes other universities and colleges. As for delimitation, it was suggested that more variables could be included in this study, as the researcher limited the items/questions for the questionnaire. The reason is to adopt the most suitable questions for the study underlying. Overall, those limitation and delimitations was handled successfully. The study found that the intelligence quotient, emotional quotient, social quotient, and adversity quotient have a positive relationship that could have an impact on students' success in academics. The success of the students in academics is influenced by their cognitive ability, overcoming emotions and stress, socializing skills, and how someone turn a hardship into a spirit to attain success in academics and life. Our awareness of the existence of the four quotients is very necessary to have a good impact on students. In addition, it can broaden our knowledge about things we never knew before.

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