Modelling Students' Life Satisfaction in Public Higher Institution using Multiple Linear Regression Analysis

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Abstract: Life satisfaction refers to how individuals perceive their lives in terms of happiness and contentment, considering factors such as life circumstances, achievements, relationships, and overall satisfaction. This study employed a cross-sectional design to investigate the effects of emotional intelligence, perceived stress and self-esteem on life satisfaction. The sample consisted of 336 students randomly selected from a population of 1020 at UiTM Kelantan Branch, Kota Bharu Campus by using stratified sampling technique. A set of questionnaires served as the primary tool for data collection that consists of five sections covering demographic profiles, life satisfaction, emotional intelligence, perceived stress and self-esteem. Data were analysed using Pearson's correlation and multiple linear regression. The findings revealed a moderate positive correlation between self-esteem ($r = 0.571$) and emotional intelligence ($r = 0.517$) on life satisfaction. Meanwhile, the correlation between perceived stress and life satisfaction showed a weak negative relationship ($r = -0.363$). Results from multiple linear regression confirmed that all variables (self-esteem, emotional intelligence and perceived stress) significantly influence life satisfaction. This research emphasises the recognition of student achievement and encourages healthy lifestyles to increase overall life satisfaction.

Keywords: Life satisfaction, Multiple regression, Perceived stress, Self-esteem

1 Introduction

Life satisfaction in everyday life plays an important role in the workplace, learning, family and personality attributes. University students are one of the groups in society where life satisfaction is important because it reflects how people observe and assess their own lives [1]. College students value the idea of life satisfaction, which is closely tied to both psychological or emotional factors and some regular life experiences. As a result, it is a crucial indicator of psychological well-being [2]. However, human beings in the age of digitalisation and urbanisation must deal with a variety of problems to meet their demands daily. Traditional education only paid attention to logical intelligence and paid little attention to other types of intelligence, particularly emotional intelligence [3]. However, in the modern era, improvements in people's lifestyles have been greatly observed from a materialist perspective. Exposure to problem-solving techniques that use emotional intelligence, reduce perceived stress, and self-esteem evaluation can improve a person's quality of life satisfaction.

In general, life satisfaction which entails a comprehensive assessment of one's quality of life is typically seen as the cognitive component of subjective well-being. Numerous positive outcomes have been connected to life satisfaction. People with high life happiness tend to have more favourable social interactions and receive more social support. In terms of students' well-being, students who facilitate their academic engagement and academic achievement tend to have positive life satisfaction [4]. This is supported by Ooi et al. [5] who claimed that life satisfaction may have an impact on student commitment, academic performance, academic stress, and grade point average.

The concept of emotional intelligence has gained popularity as it accounts for successful lives and careers that cannot be explained by IQ alone [6]. Understanding, managing, and controlling one's own and other people's emotions are referred to as having emotional intelligence. They are less impulsive, have better adaptability and stress management, and can relate to others and communicate their sentiments with ease. Earlier study by Afolabi and Balogun [7] have demonstrated that individuals with higher emotional intelligence are more likely to experience higher happiness and life satisfaction.

Contrarily, perceived stress is also related with learning satisfaction. Students who endure high amounts of perceived stress may consequently suffer from detrimental physical and emotional effects, such as anxiety and depression, which may ultimately affect their life satisfaction as students which is related to academic performance. As stated by Ocaña-Moral et al. [8], many students may be exposed to various situations that not only affect their academic performance but also their mental health during their university training stage leading to low life satisfaction. She also reports that, in this vital stage, various pathological expressions such as depression, anxiety, feeling down and psychological stress are more frequent and even more serious than in others. Hui and Ramzan [9] discovered in their research that stress serves as a useful predictor of life satisfaction. Anyone who possesses emotional intelligence can control and handle any emotional problems that arise in their surroundings. People's assessments of their entire life experiences are used to evaluate life satisfaction, and as people prefer to focus on the good aspects of life, those with high emotional intelligence are thought to have higher life happiness.

Finally, self-esteem is also an important aspect in determining a person's level of life satisfaction. Due to the psychological, social, and cognitive transformations that take place during this era, it is undoubtedly an uncommon and change-related time in the context of life happiness. Self-esteem may serve as a sign of how students handle such challenges, which can later have an impact on how satisfied they are with their lives in general [10]. Self-esteem and satisfaction with life were also found to be positively correlated [11].

Most of the research were done abroad and primarily focused on medical undergraduates rather than undergraduates as a whole [12]. This is due to the researchers' perception that medical students' health would be significantly impacted given that they are responsible for maintaining and promoting society's health [13]. However, there is still a lack of study in this field concentrating on Malaysian university students [14]. As a result, this study looked more closely at how perceived stress, emotional intelligence, and self-esteem relate to life satisfaction among undergraduates simultaneously.

2   Literature Review

This section describes the determinants of life satisfaction covering emotional intelligence, perceived stress and self-esteem.

A   Emotional Intelligence

Emotional intelligence simply describes how people vary in terms of how individuals express their emotions and can comprehend the feelings that lead to emotional satisfaction in their lives [15]. Emotional intelligence has been considered to be related to happiness or life satisfaction, making it a key factor in the research of healthy youth development. The study discovered that there was a relationship between emotional intelligence and life satisfaction among university students using correlation analysis. According to Ramachandran et al. [16], emotional intelligence appears to be a

significant predictor of life satisfaction among undergraduates in the Klang Valley region. They discovered that undergraduates' levels of emotional intelligence correlate with how satisfied they are with their lives. The findings, supported by Ooi et al. [17], clarify people with high emotional intelligence can control their negative emotions and react to those feelings in others and in themselves by using rational thoughts, which leads to a positive outcome.

B   Perceived Stress

Perceived stress refers to a person's feelings or perceptions regarding their degree of stress at a certain time or throughout a specified period. Due to varying views and assessments of the scenario, different people often experience varying amounts of stress regardless of the circumstances [18]. According to Buskirk-Cohen and Plants [19], students experience a lot of stress when enrolled in universities. Previous research suggests that perceived stress was a significant predictor of a low level of life satisfaction [20].

C   Self-Esteem

Rosenberg [21] defines self-esteem as individuals' overall evaluation of their worth or attitude towards themselves. This attitude can occur in two situations either being self-serving or self-defeating attitude. Thus, self-esteem refers to the attributes that everyone has that can be judged by us as well as by others, whether from a negative or positive perspective. In simple terms, it is a positive attitude towards oneself. Agberotimi and Oduaran [22] reveal a correlation analysis of the connection between self-esteem and life satisfaction among final-year undergraduate students at a Nigerian university. The findings indicate that self-esteem ($r = 0.38$, $p < 0.01$) has a significant and positive correlation to life satisfaction. Furthermore, Saad et al. [23] studied the relationship between the differences in self-esteem and life satisfaction among 60 Afghan students studying at Nangarhar University and 60 Indian students studying at Chandigarh University. Both Afghan and Indian students revealed a significant positive correlation between self-esteem and life satisfaction ($r = 20$, $p < 0.01$).

3   Methodology

This section explains the target population and study design, research instrument and data collection method, theoretical framework and method of data analysis.

A   Target Population and Study Design

This study applied a cross-sectional study design that examined life satisfaction among students of UiTM Kelantan Branch, Kota Bharu Campus. The number of sample size was determined by using Raosoft sample size calculator. The population size of students at UiTM Kelantan Branch, Kota Bharu Campus is 1020 students which consists of the College of Computing, Informatics and Mathematics, and Faculty of Business and Management. Thus, the minimum sample size was 280 students with a margin of error of 5 percent, and 95 percent confidence level. However, this study has taken another 20 percent of the minimum sample size to minimize non-respondents. Thus, 336 students have been randomly selected to be the respondents to this study.

In this investigation, stratified sampling by programme was implemented as a sampling technique. Data were collected from students involving six programmes (BA240, BA242, BA249, BA250, CS241 and CS291). The number of samples for each programme is summarised in Table 1.

Table 1: Sample size for each programme

Programme	Population	Sample
BA240	274	65
BA242	430	101
BA249	242	57
BA250	212	50
CDCS241/CS241	244	57
CDCS291/CS291	21	6
Total	1423	336

B   Research Instrument

The questionnaire contains five parts, which are respondents' background, evaluation of students' self-esteem, perceived stress, emotional intelligence and life satisfaction. Part A contains five questions about demographic information of the respondents. The demographic information covered gender, age, faculty, programme and semester. Part B adopted the 10 items in Rosenberg Self-Esteem Scale by Rosenberg [24]. There were 10 items with a 4-point Likert scale ranging from strongly disagree (1) to strongly agree (4). Next, part C features the Perceived Stress Scale that was created by Bataineh [25] with 14 items on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). In addition, part D was developed by Wong and Law [26] and is known as the Emotional Intelligence Scale (WLEIS) with 16 items ranging from strongly disagree (1) to strongly agree (7). Last, part E of Academic Life Satisfaction Scale (ALSS) was developed by Nogueira [27]. It consists of 8 questions with a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

C   Theoretical Framework

Based on Figure 1, it shows that the dependent variable was life satisfaction while the independent variables were emotional intelligence, perceived stress and self-esteem of students.
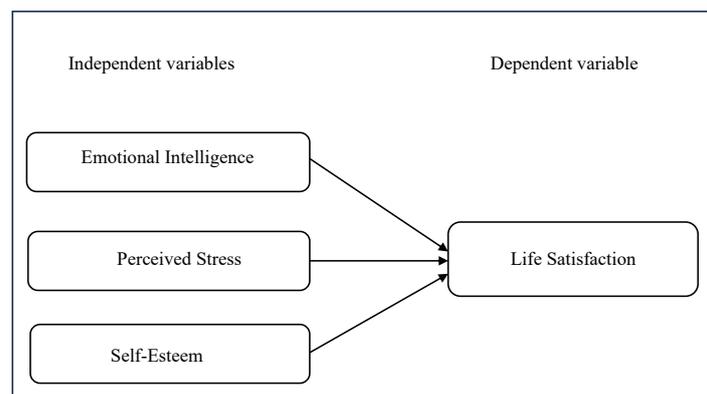

Figure 1: Theoretical Framework

D   Data Analysis

Descriptive statistics were performed using frequency table to illustrate the distribution of the students. For each demographic variables, the number and percentage of characteristics were presented. Next, Pearson Correlation were used to determine the correlation between emotional intelligence, perceived stress and self-esteem toward life satisfaction. The intensity and direction of a relationship between two variables were expressed as a number between -1 and 1.

Multiple linear regression was implemented to identify the effect of emotional intelligence, perceived stress and self-esteem toward life satisfaction. Several assumptions had to be satisfied before multiple linear regression could be run. These assumptions include the following: multicollinearity, homogeneity of variances, and normality. For multicollinearity, the assumption was checked by using VIF and tolerance value. Next, normality assumption was verified using normal P-P plot while scatterplot of residual versus predicted was implemented to assess the homogeneity of variance assumption.

4   Result

A   Reliability Analysis

Table 2 shows the result of reliability analysis. The pilot study shows that the Cronbach's Alpha value for Section B (life satisfaction) is 0.945, Section C (self-esteem) is 0.965, Section D (perceived stress) is 0.934 and Section D (emotional intelligence) is 0.949. Habidin et al. [28] suggested that a value of 0.70 or higher for Cronbach's alpha demonstrates satisfactory reliability. Hence, the questionnaire is suitable to be applied for actual study since the results of the items have good level of reliability since the Cronbach's Alpha is greater than 0.7 for all variables.

Table 2: Reliability Analysis

Variables	Cronbach's Alpha
Life Satisfaction	0.945
Self Esteem	0.965
Perceived Stress	0.934
Emotional Intelligence	0.949

B   Descriptive Statistics

Table 3 shows that from 305 of respondents, most were females, accounting for 79 percent, while 21 percent of students were males. Additionally, 76.4 percent of students were from the Faculty of Business and Management (FBM), while the remaining students were from the College of Computing, Informatics, and Mathematics (KPPIM). Among the students from Faculty of Business and Management, the highest percentage was from Bachelor of Business Administration (Hons) Finance (BA242), representing 28.9 percent, while the lowest percentage was from Bachelor of Science (Hons.) Statistics and Bachelor of Entrepreneurship (Logistics and Distributive Trade) With Honours (CDCS291/CS291) from College of Computing, Informatics, and Mathematics, which accounted for only 2 percent. Furthermore, this study included students from semester 1 to 6 with the highest percentage being from semester 5 at 36.7 percent, and the lowest percentage being from semester 1 at 1.3 percent.

Table 3: Distribution of students

Variable	Characteristics	n (%)
Gender	Male	64 (21.0)
	Female	241 (79.0)
Faculty	KPPIM	72 (23.6)
	FBM	233 (76.4)
Programme	BA240	52 (17.0)
	BA242	88 (28.9)
	BA249	57 (18.7)
	BA250	36 (11.8)
	CDCS241/CS241	66 (21.6)
	CDCS291/CS291	6 (2.0)

Semester		
	1	4 (1.3)
	2	28 (9.2)
	3	98 (32.1)
	4	49 (16.1)
	5	112 (36.7)
	6	14 (4.6)

C   Correlation Analysis

Based on Table 4, self-esteem shows a coefficient of 0.571, indicating a moderate correlation. This suggests that there is a moderately positive relationship between life satisfaction and self-esteem, meaning that those who have higher levels of self-esteem are also likely to report higher levels of life satisfaction. On the other hand, the relationship between perceived stress and life satisfaction was weak, with a value of -0.363. This suggests that perceived stress and life satisfaction have a weak correlation with negative relationship. The moderate correlation raises the possibility that higher levels of perceived stress might contribute to a slight decrease in life satisfaction. Lastly, the coefficient of 0.517 was found between life satisfaction and emotional intelligence. This suggests that life satisfaction and emotional intelligence have a moderate positive correlation. Higher emotional intelligence is associated with greater life satisfaction.

Table 4: Pearson Correlation

		Self Esteem	Perceived Stress	Emotional Intelligence
Life Satisfaction	Pearson Correlation	0.571	-0.363	0.517
	p-value	0.000	0.000	0.000

D   Multiple Linear Regression

i.   Multicollinearity

Based on Table 5, the VIF was less than 10 and all variables have tolerance values of more than 0.1. Therefore, the statistics of collinearity provide evidence denying the existence of multicollinearity.

Table 5: Multicollinearity

Variables	Collinearity Statistic	
	Tolerance	VIF
Self Esteem	0.650	1.538
Perceived Stress	0.919	1.088
Emotional Intelligence	0.632	1.583

ii.   Normality

The P-P plot in Figure 2 clearly shows how the residuals' distribution nearly follows a straight line and was incredibly closely aligns with the expected normal distribution line. This alignment supports the statistical model's assumption of validity by showing that the residual distribution can be reasonably considered normal.
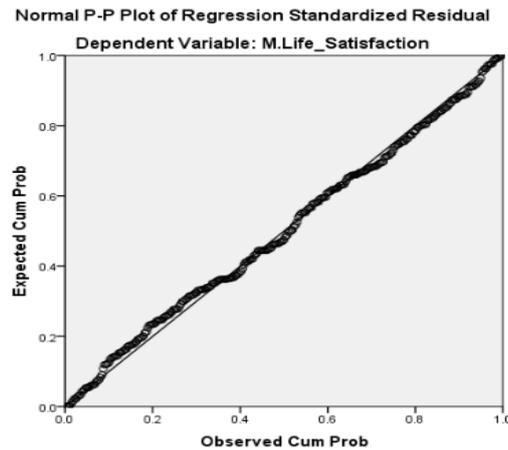
Figure 2: Normal P-P plot of residual

iii. Homogeneity of Variance

Figure 3 shows that there is no obvious pattern of residuals. Hence, the homogeneity of variance assumption is satisfied.
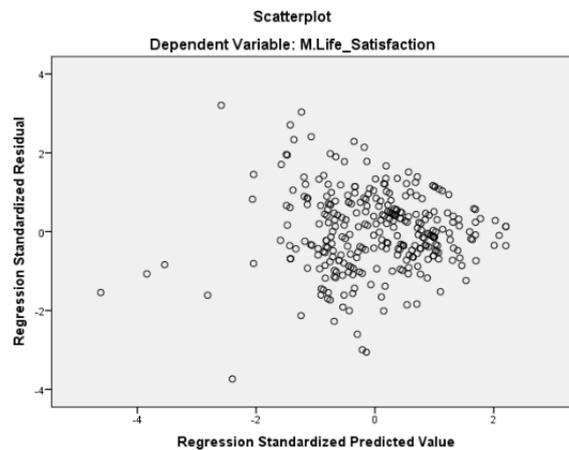

Figure 3: Scatterplot of Residual vs Predicted

Table 6 shows that the independent variables statistically significantly predict the dependent variable. The results show that the p-value of 0.000 is less than the significance level of 0.05. Therefore, it is concluded that at least one of the independent variables is significant.

Table 6: Test for the Significance of Regression Model

Model		Sum of square	df	Mean Square	F	p-value
Regression		129.625	3	43.208	72.069	0.000
Residual		180.462	301	0.600		
Total		310.087	304			

The R-value represents the multiple correlation coefficient. It is a way to measure how well it can predict life satisfaction. In this case, the R-value is 0.647 indicating a good level of prediction. It shows a moderate positive relationship between the variables. Next for R Square, known as the coefficient of determination. It tells about the proportion of variance in life satisfaction explained by self-esteem, perceived stress, and emotional intelligence. With an R-squared value of 0.418, this means that 41.8% of the total variation in life satisfaction is explained by the variation in self-esteem, perceived stress, and emotional intelligence while 58.2% is explained by another factor not considered in our model.

Table 7: Goodness of Fit

R	R Square
0.647	0.418

Referring to Table 8, all independent variables are significant since the p-value is less than the significance value.

Table 8: Test of Significant of Independent Variables

Variables	Coefficient Value	T Statistic	p-value
Constant	1.373	4.759	0.000
Self Esteem	0.372	7.123	0.000
Perceived Stress	-0.183	4.666	0.000
Emotional Intelligence	0.235	4.151	0.000

The Estimated Regression Model:

$$\hat{y} = 1.373 + 0.372\,x_1 - 0.183 x_2 + 0.235\,x_3$$

where:
$\hat{y}$ is for the dependent variable of the life satisfaction
x_1 is for the independent variable of the self-esteem
x_2 is for the independent variable of the perceived stress
x_3 is for the independent variable of the emotional intelligence

The results show that when self-esteem, perceived stress, and emotional intelligence were equal to zero, the value for the dependent variable, which is life satisfaction was observed to be 1.373. It shows the initial level for understanding of life satisfaction when the three independent variables were not included. Moving on to the regression coefficients, all the parameter values (b_i) display a positive relationship. The analysis shows that an increase in self-esteem will increase life satisfaction by 0.372 while other variables remain constant. Similar to the second variable, when perceived stress increases, life satisfaction decreased by 0.183 while other variables remained constant. Furthermore, an analysis revealed that when emotional intelligence of students increased, life satisfaction also increased by 0.235 while other variables remained constant. Based on the regression coefficient, self-esteem had the highest value of 0.372. Therefore, self-esteem was the most significant variable in this model. This means that between the variables of perceived stress and emotional intelligence, changes in self-esteem have a relatively considerable effect in predicting the variation of life satisfaction among students.

5 Conclusion

This study provides valuable insights into the relationships between emotional intelligence, perceived stress and self-esteem variable and their impact on university students' life satisfaction. Results from the findings indicate significant associations between these variables. Specifically, a moderate positive correlation was found between life satisfaction and self-esteem, highlighting the importance of positive self-perceptions and self-acceptance for students' overall satisfaction. This finding was consistent with Agberotimi and Oduaran [29] who revealed a significant and positive correlation between self-esteem and life satisfaction among final-year undergraduate students at a Nigerian university. Besides that, the Pearson correlation coefficient between life satisfaction and perceived stress demonstrates a significant low positive correlation. This implies that a certain amount of stress may be related to greater levels of life satisfaction.

People who experience moderate stress are more likely to overcome obstacles and make personal progress. The findings of the Pearson correlation coefficient between life satisfaction and emotional intelligence also demonstrates a significant moderate positive correlation. This implies that higher levels of emotional intelligence are associated with greater life satisfaction among university students. The positive correlations between life satisfaction, self-esteem, perceived stress, and emotional intelligence highlight the significance of these factors in shaping overall well-being and satisfaction among students, thus achieving the first objective of this study.

The second objective of this study was to examine the impact of emotional intelligence, perceived stress, and self-esteem on life satisfaction among university students. The analysis results confirmed that emotional intelligence, perceived stress, and self-esteem significantly influence life satisfaction. Afolabi and Balogun [9] found that emotional intelligence strongly predicted life satisfaction, indicating that undergraduates with higher emotional intelligence tend to experience greater life satisfaction. Additionally, Joshanloo and Afshari [30] revealed that self-esteem significantly predicted life satisfaction among Islamic University students in Iran. In conclusion, this study highlights the significant roles of emotional intelligence, self-esteem, and perceived stress in determining students' satisfaction levels.

Overall, the findings of this report emphasise the importance of emotional intelligence, self-esteem, and stress management in promoting students' life satisfaction. By developing emotional intelligence skills, fostering positive self-esteem, and implementing effective stress management strategies, educational institutions can contribute to the well-being and satisfaction of their students.

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Conflict of Interest Statement

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

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