

# Demographic Influence on Emotional Intelligence of Science Technology and Engineering Teachers in Region 1 Philippines

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**Abstract:** *This study investigated the Emotional Intelligence (EI) of Science, Technology and Engineering (STE) science teachers based on their demographic profile. Total enumeration was used and 113 STE science teachers in Region 1 Philippines participated in this study. The study adopted descriptive- quantitative research design, frequency count and percentage, weighted mean (WM), t-test and ANOVA were utilized and to look deeper on the magnitude of the demographic profiles on EI, effect size was used.*

*The results showed that some of STE science teachers belongs to 30-39 age bracket. In terms of sex most of STE science teachers are females. In terms of position some are Teacher III. In terms of length of service, some are in service for 0-5 years. STE science teachers have an average EI. Difference of EI on respondents' age was also investigated and revealed in over-all EI, that there is a significant difference between STE science teachers' age. Further, an effect size of 0.01 was tabulated which means it has a small effect. Difference of EI between sexes had also been investigated and found out that there is a significant difference between the STE science teachers' sex and EI. Further, the effect size was 0.27. Differences of EI against the STE teachers' position had also been investigated results revealed that, there is no statistically significant difference. Difference of EI against respondents' length of service had also been investigated and revealed that, there is no statistically significant difference between respondents' length of service and EI.*

*Conclusions include: STE science teachers is female-dominated in their middle-age, and who are relatively young in the service; STE science teachers' can assess others' emotion, moreover, they can highly assess their own emotion with high level of emotional control, and thus they can interact excellently with other people, and use their emotion in a positive way with positive outlook in life; STE science teachers EI is dependent on their age and sex.*

## 1. Introduction

Emotional intelligence (EI) is the ability to recognize and understand emotions in ones' self and

others, and the ability to use that awareness to manage behavior and relationships (Bradberry & Greaves 2009) <sup>[3]</sup>. Emotions are innate part of a teacher's work and it has an impact on teacher productiveness, action, thinking, and driving force (Sutton & Wheatley, 2003) <sup>[30]</sup>. One of the major fields of application of emotional intelligence is in of education (Seema, 2012) because of its great importance in teaching as it helps the teachers understand their students in a better way. That is why it is important to have teachers who are also has a high EI <sup>[26]</sup>.

The teaching profession is known as one of the most stressful profession (Noriah, Iskandar & Ridzaudin, 2010; Nelson, Low, & Nelson, 2006) <sup>[25]</sup> <sup>[24]</sup>. According to the University Kebangsaan in Malaysia (UKM Leads Research on Emotional Intelligence, 2009) heavy workload is one the main contributors of emotionally burden behaviour in the teaching profession <sup>[34]</sup>. A study in Malaysian educators depicted that they were unable to manage their emotions effectively and lacks emotion regulation behaviors when associating with their workmates (Rohana, Kamaruzaman & Zanariah, 2009) <sup>[31]</sup>. In the Philippines, under Department of Education (DepEd) Memorandum No. 291 dated June 13, 2008, the working hours for teacher is eight (8) hours: six (6) of which is devoted to classroom teaching and the remaining hours is allotted in teaching related activities like preparation of lesson plans, checking and recording of outputs <sup>[7]</sup>. As per the researchers observation, even the 8 working is not enough that teachers brings home their work to their home, sacrificing their personal times.

The Science, Technology and Engineering (STE) curriculum is one of the special programs of the DepEd, it is hoped to bring future professionals that could contribute to science, technology and engineering. Students under this program goes to rigid screening to filter the best students. Learning is not solely dependent on the intellectual quotient (IQ) of teachers, and one of the factors that ranked first as a major motivating factor for learning is the EI of teachers (Madhar, 2010) <sup>[18]</sup>. It is important also that teachers should have a high EI to bring out the full potential of their students.

According to Lanier, J., (1997), teachers' attention to personal qualities is all the more important and one of their responsibility, is to counsel students as they grow and mature. Given the situations of heavy workload and stress to their colleagues these roles has hindrances in fulfilling it [14]. Kumar, J and Muniandy, B., (2012), stated that demographic profile has positive relationship with emotional intelligence [13].

Hence, this study is aimed to determine the EI of science teachers under STE curriculum in Region 1, Philippines based on their demographic profile. This study seek to answer the following specific problems: 1. what is the profile of the respondents in terms of: a. Age; b. Sex; c. Position; and d. Length of service? 2. What is the level of EI of Science Technology and Engineering science teachers in Region 1 in terms of: a. Appraisal of Others' Emotion; b. Appraisal of Owns' Emotion; c. Emotion Regulation; d. Social Skills; e. Utilization of Emotions; and f. Optimism? 3. Is there a significant difference between the emotional intelligence of the respondents across profile? Further, this study is hoped to contribute to the dearth on the studies of EI in the Philippines.

## 2. Methods

This study aimed to determine the EI of STE science teachers in Region 1 Philippines based on their demographic profile. This study utilized Descriptive-Quantitative. There were 113 respondents of this study: they were the teachers who are teaching science subjects from 12 Public National High Schools identified by the Curriculum and Learning Management Division of DepEd Regional Office 1 that are directly and solely operated and supervised by DepEd, subject for their availability and willingness to participate in the study. Teachers who are teaching science subjects from grades 7-10 are the respondents of this study. To examine the entire population, purposive sampling technique- total enumeration sampling was utilized.

Further, the Regional Science High School for Region 1 was excluded in this study because it is a magnet school of DepEd and is anchored to Department of Science and Technology (Llego, J., 2017). Likewise, one City school did not participate in the study, the researcher reached the school head personally and through phone call but to no avail.

The main instrument utilized in data gathering is a survey-questionnaire: EI scale is based on Schutte Self Report Emotional Intelligence Test (SSEIT) and was based on Goleman Emotional Intelligence Theory. The SSEIT instrument was used in this study because of financial constraints. This instrument was used by Llego, (2017), in his study entitled Science

Technology and Engineering Teachers' Emotional Intelligence Vis-à- vis Classroom Management. The researcher modified the questionnaire by removing the questionnaire on classroom management [15].

The survey-questionnaire has two parts. Part I covered the profile of the respondents. Part II measured the EI using the SSEIT. The instrument yielded Cronbach's alpha score of 0.867 which means that it has relatively high consistency and is applicable to use in the Philippines (Llego, J. 2017) [15].

Actual data collection started from February and ended on March 2016. Before to the actual data collection, the researcher seek permission to administer the questionnaire from the DepEd Regional Office 1. The researcher also complied with the requirements set by some schools to ask permission from the Schools Division Superintendent.

The researcher personally conducted the data collection and retrieval.

### 2.1 Tools for Data Analysis

In answering the specific questions, Statistical Package for the Social Science (SPSS) version 22 was used.

To answer problem number 1, frequency count and percentage was used. It is used in the study to facilitate and hasten understanding about the data gathered and to have a better appraisal of the data.

To answer problem number 2, weighted mean (WM). Table 3.2 summarizes the scaling for the condition of EI of the respondents.

**“Table 1. Scaling for the condition emotional intelligence of the respondents”**

EI	Scale	Descriptive Equivalence
Appraisal of Others' Emotion	≤ 15.99	Low Appraisal of Others' Emotion
	16- 20.67	Average Appraisal of Others' Emotion
	≥ 20.68	High Appraisal of Others' Emotion
Appraisal of Owns' Emotion	≤ 19.10	Low Appraisal of Owns' Emotion
	19.11 - 24.40	Average Appraisal of Owns' Emotion
	≥ 24.41	High Appraisal of Owns' Emotion
Mood Regulation	≤ 9.60	Low Mood Regulation
	9.61-12.20	Average Mood Regulation
	≥ 12.21	High Mood Regulation
Social Skills	≤ 19.10	Low Social Skills
	19.11 - 24.40	Average Social Skills
	≥ 24.41	High Social Skills
Utilization of	≤ 22.4	Low Utilization of

Emotion	22.5- 28.47 ≥ 28.48	Emotion Average Utilization of Emotion High Utilization of Emotion
Optimism	≤ 9.60 9.61-12.20 ≥ 12.21	Low Optimism Average Optimism High Optimism
<b>Over-all</b>	≤ 95.99 96-122.99 ≥ 123	Below Average EI Average EI Above Average EI

To answer problem number 3 in terms of sex, t-test was utilized because sex is a dichotomous variable and level of EI is a continuous variable, to look deeper on the magnitude of sex on EI, effect size was used and done manually by the researcher, eta-squared was utilized with formula of  $\eta^2 = \frac{t^2}{t^2 + n_1 + n_2 - 2}$ . For the variables age, position and length of service ANOVA was utilized because age and length of service are continuous data, position is categorical data, and EI is a continuous data, to look deeper with the obtained data, effect size for between group was also used and done manually by the researcher, eta-squared was utilized with formula of  $\eta^2 = \frac{\text{Treatment Sum of Squares}}{\text{Total Sum of Squares}}$ . Table 3.1 summarizes the descriptive value of effect size by Cohen.

“Table 2. Benchmark descriptive value of effect size”

0.2	Small
0.5	Medium/ Moderate
0.8	Large
1.3	Very Large

### 3. Results and Discussion

“Table 3. Distribution of respondents according to age (N= 113)”

Age	Frequency	Percentage
20-29 years old	19	16.8
30-39 years old	43	38.1
40-49 years old	25	22.1
50-59 years old	21	18.6
60 years old and above	5	4.4

Table 3, revealed the age of the STE science teachers, some (38.1%) of the STE science teachers belongs to 30-39 age bracket, few (22.1%) belongs to 40-49 age bracket, (18.6%) belongs to 50-59 age bracket, (16.8%) belongs to 20-29 age bracket and very few belongs to 60 years and above.

This implicate that STE science teachers are dominated by 30-39 years old, it is parallel to the latest report of National Center for Education Information (2011), USA has some (27%) public

school teacher. On the other hand, some (31%) teachers’ falls on 50 years and up, which is in contrast with the findings of this study with combined percentage of 50-59 age bracket and 60 years, and above only 23% or few teachers belongs to that age bracket [23].

“Table 4. Distribution of respondents according to sex (N= 113)”

Sex	Frequency	Percentage
Male	29	25.7
Female	84	74.3

Table 4, revealed the sex of the respondents, most (74.3%) of the STE science teachers is females and some (25.7%) are males. This implicate that STE science teachers is mainly composed of female, this is alike with National Center for Education Information (2011), USA public school teachers consist most (84%) of females and only 16% are males which dominantly compose of the female sex [23].

“Table 5. Distribution of respondents according to position (N= 113)”

Position	Frequency	Percentage
Teacher I	30	26.5
Teacher II	8	7.1
Teacher III	45	39.8
Master Teacher I	21	18.6
Master Teacher II	9	8.0

Table 5, showed the position of the STE science teachers. Some (39.8%) are Teacher III, (26.5%) are Teacher I, very few (18.6%) are Master Teacher I, (8%) are Master Teacher II and (7.1%) Teacher II. This indicates that science STE teachers is composed mainly of Teacher III, and is least composed of Master Teachers this is congruent with DepEd (2014) report, that in Region 1, 38.18% out of 8983 teaching position occupies the Teacher III [8].

“Table 6. Distribution of respondents according to length of service (N= 113)”

Length of Service	Frequency	Percentage
0-5 years	30	26.5
6-9 years	20	17.7
10-14 years	17	15.0
15-24 years	24	21.2
25 years and above	22	19.5

Table 6, presented the length of service of STE science teachers, some (26.5%) are in service for 0-5 years, and few (21.2%) are in service for 15-24 years, very few (19.5%) are in service for 25 years and above, (17.7%) are in service for 6-9 years, (15%) are in service for 10-14 years. STE science

teachers are mainly composed of teachers with 0-5 years' experience and least composed of teachers with 10-14 years of experience. According to National Center for Education Information (2011), in USA, some (26%) are in service for 0-5 years and (16%) is in service for 10-14 years which has the highest percentage amongst the public school teachers and is congruent with the findings of this study [23].

**Table 7. Respondents' Level of EI (N= 113)**

Components of EI	WM	Interpretation
Appraisal of Others' Emotion	16.00	Average Appraisal of Others' Emotion
Appraisal of Owns' Emotion	25.05	High Appraisal of Owns' Emotion
Emotion Regulation	12.73	High Emotion Regulation
Social Skills	24.50	High Social Skills
Utilization of Emotion	28.81	High Utilization of Emotion
Optimism	12.64	High Optimism
<b>Over-all EI</b>	<b>119.73</b>	<b>Average EI</b>

Table 7, depicted that STE science teachers has an average appraisal of others' emotion (WM= 16.00). As argued by Fischer, A. and Rottevel, M. (n.d.), persons who are exposed to the identical emotional situation will emotionally comprehend to each other, that is, they move to experience and express parallel emotions [10]. That is why teachers should be good in assessing others' emotion and together with emotion regulation so that action or reaction from others' emotion will lead to a positive response or result.

This also showed that, STE science teachers has high appraisal on owns' emotion (25.05), highly proficient at appraising and regulating own emotions results in a higher level of faith in ones-self and have power over emotions which will lead to make realistic actions resulting in high performance (Naseer, Z., Chishti, S., Rahman, F., Jumani, N. 2011) [22].

This also revealed that, STE science teachers also has high emotion regulation (WM= 12.73); regulation of emotion enables an individual to join or un-join himself from an emotion in a certainty depending on its usefulness at that certainty. This is manifested in the individual's power on his instant reactions and delay his/her judgment and then to impart them in a deliberate manner (Naseer, Z., et. al, 2011) [22].

This displayed that, respondents also has high social skills (WM=24.50), according to (Zakrzewski, V. 2013), social skills are crucial not only for teachers' personal well-being but to enhance student learning, this will help the teacher to acknowledge their students' emotions and have awareness into what's provoke them, which then helps teachers react with emphatic conviction when a student is acting

out and re-direct the students' behavior properly [36]. Moreover, teachers have a lesser tendency to encounter burnout because they're capable to work more effectually with difficult students.

This affirmed that, STE science teachers also has high utilization of emotion (WM=28.81). For adjusting in changing situations, utilization of emotions plays an important role in the effective development of information for the individuals who are high on EI. Emotional reactions provide a useful insight of where interest should be focused, whereas unmanaged emotions can hinder the effective information processing, so to avoid this unduly hindrance. (Naseer, Z., et al., 2011) [22].

This revealed that STE science teachers has high optimism (WM=12.63). Optimistic people will not much perceived stress during stressful times. People who were the most positive were also contented in their work and had the least work gripe (Cassity, J. 2016) [4].

Moreover, the over-all EI of STE science teachers is average (WM= 119.73). This result implies that science STE teachers have average productivity. Knowing that they are teaching students with special curriculum it is more desirable if they have high EI. According to Bradberry, T. (2014), EI is linked to performance; emotional intelligence is the strongest predictor of performance. Emotional intelligence is the foundation for a host of critical skills. It impacts most everything people say and do each day. It is the biggest predictor of performance in the workplace and the strongest driver of leadership and personal excellence [2].

Further, this also implicates that STE science teachers has a lesser tendency to get aggressive and abusive, according to Stein, S. (2009), "emotionally unintelligent people get angry and anxious without realizing why or what they're feeling" [29], while STE science teachers has an average EI.

**"Table 8. Results comparing age of the respondents based on their emotional intelligence (N=113)**

Component of EI	f-Value	p-Value	Decision
Appraisal of Others' Emotion	4.342	0.003	Reject H <sub>0</sub>
Appraisal of Owns' Emotion	5.788	0.001	Reject H <sub>0</sub>
Emotion Regulation	2.402	0.054	Accept H <sub>0</sub>
Social Skills	4.573	0.002	Reject H <sub>0</sub>
Utilization of Emotion	2.833	0.028	Reject H <sub>0</sub>
Optimism	1.894	0.117	Reject H <sub>0</sub>
<b>Over-all EI</b>	<b>4.709</b>	<b>0.002</b>	<b>Reject H<sub>0</sub></b>

Table 8, depicts the difference of EI against the respondents' age. The test of significant difference of EI according to age was tabulated with SPSS v.22. To interpret this table, it must be made clear that the null hypothesis H<sub>0</sub>, was tested at alpha 0.05. At this



significance level in SPSS, the H0 is to be rejected if and only if the p-Value is equal to or less than 0.05.

In appraisal of others' emotion one-way ANOVA revealed ( $F_{2, 108} = 4.342, p = 0.003$ ). Therefore, the null hypothesis is rejected. There is a statistically significant difference between STE science teachers' age and appraisal of others' emotion. Further, an effect size of 0.14 was tabulated. Finding implicates that appraisal of others' emotion varies in age by 14%.

In appraisal of others' emotion one-way ANOVA revealed ( $F_{2, 108} = 5.788, p = 0.001$ ). Therefore, the null hypothesis is rejected. There is a statistically significant difference between STE science teachers' age and appraisal of others' emotion. Further, an effect size of 0.18 was tabulated, which means it has small effect. Finding implicates that appraisal of others' emotion varies in age by 14%. This is in congruence with the study of Löckenhoff, E., Costa, P. Jr. and Lane, R. (2007), stating that "blends among positive and negative emotions increased with age in descriptions of both one's own emotions and those of others"<sup>[16]</sup>.

In emotion regulation, one-way ANOVA revealed ( $F_{2, 108} = 2.402, p = 0.054$ ). In Therefore, the null hypothesis is accepted. There is no statistically significant difference between STE science teachers' age and emotion regulation. Finding implicates that emotion regulation does not varies with the age of the respondents', this is in contrast with the findings of Üngür, G and Karagözoğlu, C. (2013), wherein they studied physical education and sports students and result showed emotion regulation decreases as people aged<sup>[35]</sup>.

In social skill, one-way ANOVA revealed ( $F_{2, 108} = 4.573, p = 0.002$ ). Therefore, the null hypothesis is rejected. There was a statistically significant difference between STE science teachers' age and social skill. Further, an effect size of 0.14 was tabulated, which means it has small effect. Finding implicates that social skills varies in age by 14%. This is congruent with the statement of Luong, G., Charles, S., and Fingerman (2011), that older adults generally experience more satisfying and positive social relationships than younger adults<sup>[17]</sup>.

In utilization of emotion, one-way ANOVA revealed ( $F_{2, 108} = 2.833, p = 0.028$ ). Therefore, the null hypothesis is rejected. There is a statistically significant difference between STE science teachers' age and utilization of emotion, which means it, has small effect. Further, an effect size of 0.10 was tabulated. Finding implicates that utilization of emotion varies in age by 10%. This is parallel with the findings of Zimmermann, P., and Iwanski, A., (2014), that the general trend of adaptive emotion utilization is increasing<sup>[37]</sup>.

In optimism, one-way ANOVA revealed ( $F_{2, 108} = 1.894, p = 0.117$ ). Therefore, the null hypothesis is accepted. There is no statistically

significant difference between STE science teachers' age and optimism. Finding implicates that appraisal of optimism does not varies with their age. This is in congruence with the study of Mishra, K. (2013), wherein she studied 400 participants in Varanasi India and the result revealed that optimism changes as people get older<sup>[20]</sup>.

In over-all EI, one-way ANOVA revealed ( $F_{2, 108} = 4.709, p = 0.002$ ). Therefore, the null hypothesis is rejected. There is a statistically significant difference between STE science teachers' age and EI. Further, an effect size of 0.01 was tabulated. Finding implicates that EI varies in age by 1%, which means it has small effect. According to Cicetti, F. (2013), like a wine as people age people also improves, further as people age some aspect of EI may increase (Atkins, P. and Stough, C., 2005)<sup>[5]</sup><sup>[1]</sup> and increase of EI and age is very slight (Fariselli, L., Ghini, M., and Freedman, J., 2008)<sup>[9]</sup>.

**“Table 9. Results comparing male and female respondents based on their emotional intelligence (N=113)”**

Component of EI	t-Value	p-Value	Decision
Appraisal of Others' Emotion	-2.469	0.018	Reject H <sub>0</sub>
Appraisal of Owns' Emotion	-3.475	0.001	Reject H <sub>0</sub>
Emotion Regulation	-1.781	0.082	Accept H <sub>0</sub>
Social Skills	-2.618	0.010	Reject H <sub>0</sub>
Utilization of Emotion	-2.020	0.050	Reject H <sub>0</sub>
Optimism	-1.709	0.095	Accept H <sub>0</sub>
<b>Over-all EI</b>	<b>-2.997</b>	<b>0.003</b>	<b>Reject H<sub>0</sub></b>

Table 9, summarizes the difference of STE science teachers EI in terms of their sex. The test of significant difference of EI according to sex was tabulated with SPSS v.22. To interpret this table, it must be made clear that the null hypothesis H0, was tested at alpha 0.05. At this significance level in SPSS, the H0 is to be rejected if and only if the p-Value is equal to or less than 0.05.

In terms of appraisal of others' emotion presents the scores for male (M=15.14, SD=2.279) and female (M=16.30, SD=1.868) conditions;  $t(41.733) = -2.469, p = 0.018$ . Therefore, the null hypothesis is rejected; there is a significant difference between STE science teachers' sex and appraisal of others' emotion. Further, the effect size was 0.35 which indicates that sex has a small difference on appraisal of others' emotion.

Above finding implicates that appraisal of others' emotion varies in sex by 35%. This infers that one of the sexes is better over the other in appraising others' emotion this can be supported by Thompson, D. (2016), who said "women read other people emotional reactions better than men, regardless of

whether they receive those emotional cues verbally or visually”<sup>[33]</sup>.

In terms of appraisal of owns’ emotion the scores for male (M=23.52, SD=3.203) and female (M=25.58, SD=2.594) conditions;  $t(111) = -3.475, p = 0.001$ . Therefore, the null hypothesis is rejected; there is a significant difference between STE science teachers’ sex and appraisal of owns’ emotion. Further, the effect size was 0.31 which infer that sex has a small difference on appraisal of owns’ emotion.

Above finding implicates that appraisal of others’ emotion varies in sex by 31%. This implies that one of the sexes is better in appraising owns’ emotion. Being aware on owns’ emotion is related to self-awareness and in a study conducted by Khalili, A. (2011), he found out that men employees of small and medium enterprise demonstrated higher level of self-awareness <sup>[12]</sup>.

In terms of emotion regulation of the respondents, the scores for male (M=12.28, SD=1.688) and female (M=12.89, SD=1.353) conditions;  $t(41.123) = -1.781, p = 0.082$ . Therefore, the null hypothesis is accepted; there is no significant difference between STE science teachers’ sex and emotion regulation.

Above finding implicates that regulation of emotion does not vary in sex. This claim is supported by the study of McRae, K., Ochsner, K., Mauss, I., Gabrieli, J., and Gross, J. (2008), they found that men and women did not differ on measures of emotional reactivity <sup>[19]</sup>.

In terms of social skill, the scores for male (M=23.34, SD=2.844) and female (M=24.89, SD=2.711) conditions;  $t(111) = -2.618, p = 0.010$ . Therefore, the null hypothesis is rejected; there is a significant difference between STE science teachers’ sex and social skills. Further, the effect size was 0.24 which infers that sex has a small difference on social skills.

Above finding implicates that social skills varies in sex by 24%. Males are known to be reserve; females communicate almost everything they experience unlike males they talk less. According to Cook, J. and Cook G. (2014), culture socializes boys to express less emotion as they get older <sup>[6]</sup>.

In terms of utilization of emotion, the scores for male (M=27.66, SD=3.725) and female (M=29.20, SD=3.013) conditions;  $t(41.366) = -2.020, p = 0.050$ . Therefore, the null hypothesis is rejected; there is a significant difference between STE science teachers’ sex and utilization of emotion. Further effect size is equal to 0.29, which means it has small effect.

Above finding implicates that utilization of emotion not varies in sex by 29%. This implies that one sex is better in utilizing, using, implementing or expressing their emotions; this is in congruent to the study of McRae, K., et. al., (2008), wherein they found out women has an advance way to process emotion expressions in contrast to males <sup>[19]</sup>.

In terms of optimism, the scores for male (M=12.14, SD=1.941) and female (M=12.81, SD=1.43) conditions;  $t(29.102) = -1.709, p = 0.095$ . Therefore, the null hypothesis is accepted; there is no significant difference between the STE science teachers’ sex and optimism.

Above finding implicates that optimism does not vary in sex. Males and females have the same level of optimism that is in contrary to the claim of Rudow, H. (2011), wherein females are more optimistic than in males <sup>[32]</sup>. Moreover, the reason behind females is more optimistic because of their strong social network or in other words their friends.

For over-all EI, the scores for male (M=114.07, SD=14.210) and female (M=121.68, SD=10.50) conditions;  $t(111) = -2.997, p = 0.003$ . Therefore, the null hypothesis is rejected; there is a significant difference between STE science teachers’ sex and EI. Further, the effect size was 0.27 which indicates that sex has a small difference on EI.

Above finding implicates that EI of science STE teachers vary in sex by 27%. This represents that one of the sexes has a higher EI than the other. This is affirmed by Khalili A. (2011) who claimed that females are more emotionally intelligent than males in his study <sup>[12]</sup>.

“Table 10. Results comparing respondents position based on their EI (N=113)”

Component of EI	f-Value	p-Value	Decision
Appraisal of Others' Emotion	1.604	0.178	Accept H <sub>0</sub>
Appraisal of Owns' Emotion	1.623	0.174	Accept H <sub>0</sub>
Emotion Regulation	1.050	0.385	Accept H <sub>0</sub>
Social Skills	1.840	0.126	Accept H <sub>0</sub>
Utilization of Emotion	0.646	0.631	Accept H <sub>0</sub>
Optimism	1.193	0.318	Accept H <sub>0</sub>
<b>Over-all EI</b>	<b>1.453</b>	<b>0.222</b>	<b>Accept H<sub>0</sub></b>

Table 10, illustrates the differences of STE science teachers EI against their position. The test of significant difference of EI according to position was tabulated with SPSS v.22. To interpret this table, it must be made clear that the null hypothesis H<sub>0</sub>, was tested at alpha 0.05. At this significance level in SPSS, the H<sub>0</sub> is to be rejected if and only if the p-Value is equal to or less than 0.05.

In terms of appraisal in others’ emotion, one-way ANOVA revealed (F<sub>2 108</sub> = 4.055, p = 0.178). Therefore, the null hypothesis is accepted; there is no statistically significant difference between respondents’ position and appraisal of others’ emotion. This result implicated that appraisal of others’ emotion does varies with STE science teachers’ position.

In terms of appraisal in owns' emotion, one-way ANOVA revealed ( $F_{2108} = 1.623, p = 0.174$ ). Therefore, the null hypothesis is accepted. There is no statistically significant difference between STE science teachers' position and appraisal of owns' emotion. This result implicated that appraisal of owns' emotion does not varies with science STE teachers' position.

In terms of emotion regulation, one-way ANOVA revealed ( $F_{2108} = 1.050, p = 0.385$ ). Therefore, the null hypothesis is rejected; there is a statistically significant difference between STE science teachers' position and emotion regulation. Further, the effect size is 0.03. This result implicated that emotion regulation varies with science STE teachers' position by 3%.

In terms of social skills, one-way ANOVA revealed ( $F_{2108} = 1.840, p = 0.126$ ). Therefore, the null hypothesis is accepted; there is a statistically significant difference between STE science teachers' position and social skills. This result implicated that social skill does not varies with STE science teachers' position.

In terms of utilization of emotion, one-way ANOVA revealed ( $F_{2108} = 1.193, p = 0.631$ ). Therefore, the null hypothesis is accepted; there is no statistically significant difference between the STE science teachers' position. This result implicated that utilization of emotion does not vary with science STE teachers' position.

In terms of optimism, one-way ANOVA revealed ( $F_{2108} = 1.193, p = 0.318$ ). Therefore, the null hypothesis is rejected; there is no statistically significant difference between the STE science teachers' position and optimism. This result implicated that optimism does not vary with science STE teachers' position.

Moreover, in over-all EI one-way ANOVA revealed ( $F_{2108} = 1.453, p = 0.222$ ). Therefore, the null hypothesis is accepted; there is no statistically significant difference between the STE science teachers' position and EI. This implicates that EI does not varies with STE teachers' position, this is in contradict to the argument of Morison, J. (2009) that the higher the rank an individual has, he becomes more emotionally intelligent [21]. In support to this according to Bradberry, T. (2016), in the corporate world, middle managers stand out with the highest EI in the workplace [2].

**“Table 11. Results Comparing Respondents Length of Service on their EI (N=113)”**

Component of EI	f-Value	p-Value	Decision
Appraisal of Others' Emotion	2.169	0.077	Accept $H_0$
Appraisal of Owns' Emotion	1.527	0.199	Accept $H_0$
Emotion Regulation	0.446	0.775	Accept $H_0$

Social Skills	2.405	0.054	Accept $H_0$
Utilization of Emotion	0.755	0.557	Accept $H_0$
Optimism	1.108	0.357	Accept $H_0$
<b>Over-all EI</b>	<b>1.438</b>	<b>0.226</b>	<b>Accept <math>H_0</math></b>

Table 11, summarizes the comparison of respondents' EI against their length of service. The test of significant difference of EI according to length of service was tabulated with SPSS v.22. To interpret this table, it must be made clear that the null hypothesis  $H_0$ , was tested at alpha 0.05. At this significance level in SPSS, the  $H_0$  is to be rejected if and only if the p-Value is equal to or less than 0.05.

In terms of appraisal in others' emotion, one-way ANOVA revealed ( $F_{2108} = 2.169, p = 0.077$ ). Hence, the null hypothesis is accepted; there is no statistically significant difference between respondents' length of service and appraisal of others' emotion. This result implicated that appraisal of others' emotion does not varies with STE science teachers' position length of service.

In terms of appraisal in owns' emotion, one-way ANOVA revealed ( $F_{2108} = 1.527, p = 0.199$ ). Hence, the null hypothesis is accepted; there is no statistically significant difference between respondents' length of service and appraisal of owns' emotion. The result implicated that appraisal of owns' emotion does not vary with STE science teachers' length of service.

In terms of emotion regulation, one-way ANOVA revealed ( $F_{2108} = .446, p = 0.775$ ). Hence, the null hypothesis is accepted; there is no statistically significant difference between respondents' length of service and emotion regulation. This result implicated that appraisal of others' emotion does not varies with STE science teachers' position length of service.

In terms of social skill, one-way ANOVA revealed ( $F_{2108} = 2.405, p = 0.054$ ). Hence, the null hypothesis is accepted; there is no statistically significant difference between respondents' length of service and emotion regulation. This result implicated that social skill does not varies with STE science teachers' position length of service.

In terms of utilization of emotion, one-way ANOVA revealed ( $F_{2108} = 0.755, p = 0.557$ ). Hence, the null hypothesis is accepted; there is no statistically significant difference between respondents' length of service and utilization of emotion. This result implicated that utilization of emotion does not vary with STE science teachers' position length of service.

In terms of optimism, one-way ANOVA revealed ( $F_{2108} = 1.108, p = 0.357$ ). Therefore, the null hypothesis is accepted; there is a statistically significant difference between respondents' length of service and appraisal of optimism. Further, the effect size computed was 0.04. The result implicated that

optimism varies with STE science teachers' length of service by 4%.

In over-all EI, one-way ANOVA revealed ( $F_{2,108} = 1.438$ ,  $p = 0.226$ ). Therefore, the null hypothesis is accepted; there is no statistically significant difference between respondents' length of service and EI. The result implicated that EI does not vary with STE science teachers' length of service. This is in contrast to the study of Shipley N., Jackson M., and Segrest, S., (2010), wherein the results show that there was a significant difference between the average total emotional intelligence scores among students that had full-time work experience and those that did not have full-time work experience<sup>[28]</sup>.

### 3.1. Conclusions

In light of the result of this study the researcher concluded that: STE science teachers is female-dominated in their middle-age, and who are relatively young in the service; STE science teachers' can assess others' emotion, moreover, they can highly assess their own emotion with high level of emotional control, and thus they can interact excellently with other people, and use their emotion in a positive way with positive outlook in life; STE science teachers EI is dependent on their age and sex.

### 3.2. Recommendations

Based on the results of the study the following are recommended by the researcher:

1. The head teachers or principals should assign seasoned-female teachers in the STE curriculum rather than the new ones, who are males and in the lower ranks.

2. Similar studies should be conducted and include other programs like Special Program for the Arts, Sports and the regular classes and other subject teachers which was the limitation of this study.

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