

Technology & Emotional Intelligence

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Abstract—The world has become a hub of new technological inventions. Easy access to technology has added wings to the youth in order to have world at their palm. Overuse of these technical gadgets can lead to serious crisis for the mental health in humans. Emotional intelligence is a collection of various traits of human which are biological as well as acquired. Majority out of which are tend to use technology for solving their general issues. Increased usage of technological aspects and gadgets can contribute to degradation in physiological & psychological factors in accordance to human brains. Significant and appropriate standards have already been implemented to curb out these negative impacts by several private and government Medical Organizations. In this paper, a survey has been conducted to discuss the factors that can be encountered while technology is projected to accomplish different tasks in context to mental health. A detailed survey will allow people, and researchers to opt appropriate measure of using certain technology; and will help to lead lives towards sustainability.

Keywords—Communication, Disorders, Emotional Intelligence, Emotional Quotient, Sustainable Living, Technology.

I. INTRODUCTION TO TECHNOLOGY AND EMOTIONAL QUOTIENT

Technology [1], [2] is utilization of techniques and innovations, driven through technological assistance to compete with the real-life problems. Technology cannot be separated from society; Dependency of society on technology is the need of hour to meet the expectations of growing environment.

Emotional Intelligence [3] is the ability to manage one's behaviour and decisions to achieve positive results. It is a combination of personal [4] and social competence [4]. Personal competence is the ability to know own emotions, behavior and tendencies. It is the skill of self-awareness and self-management, which focuses on individual itself. Social competence is the ability to understand others' emotions, behavior and motives in order to improve the quality of relationship. Emotions affects our day today life, they also affect the lives of people around us, both at our workplace and in our personal lives. Emotions are directly concerned with our energy level and thinking level. Emotional intelligence can be acquired and improved with practice as well as it can be dispossess with excess usage of technology. Usage of technology has increased to such a level that people started considering it as their only friend, which resulted in excess use of technology leading to various emotional disorders [3]. This demands to analyze and make proper use of technology which is relevant for human life.

The technology definitely help human in various aspects, but its excess usage can lead to various problems. The paper would consider following headings, bifurcated as:

- Provides the relationship between Technology and Emotional Quotient[5], how it can affect human emotionally and Physically (Section 2)
- Provides a comparative analysis consisting of factors of emotional quotient on the basis of usage of technology (Section 3)
- Provides the possible aspects of Technology, that are ruining every individual's emotional quotient (Section 4)
- Includes conclusion for overall survey, and future scope on efficient utilization of technology, which leads to stable lifestyle (Section 5)

The further classification for the paper can be best described in the following manner: Section 2, discusses about the reliance of human behavior towards technology, and ruining taking place psychologically and emotionally due to its excessive usage; Section 3, describes about the factors accountable for an excess use of Technology and the parameters that are ruining everyone's survival; Section 4, describes about the factors influenced by excess use of technology and their impact on human stability Section 5: includes future aspects in order to encourage convenient usage of technology that leads to healthier environment.

II. EFFECTIVENESS OF EMOTIONAL QUOTIENT

Technology is a gift of human invention and innovations to the planet. It is helping human's survival on earth in many ways. Taking into consideration mental health[6] of human its ability to dissociate from this stressful world can be very helpful to many who spend some time with mental relaxation. Apps was an initiative triggered behind taking people from hectic to sustainable and comfortable life, the invention of apps boost mindfulness and reduce anxiety from hectic life but the unpleasantness begins when technology takes place above family get-togethers and social interactions[7]. Technology is facilitating everyday life, but it is also distracting users from personal interactions[7]. It has been observed that due to excess use of technology sense of humanity is getting affected among users. Majority are getting divorced from their own thought and feelings, also of others'.

Easy access to technology has affected almost all the fields of human life. But it is not possible to explore how advancement in technology has impacted human lives and how it will impact the future. The environment, people and the society, technology is affecting each and everything, but its impacts is determined by the way we use it. It is impossible to explore all aspects, but some that affects emotional quotient directly are discussed below:

2.1 Expressiveness[8]:

Emotional intelligence is an ability to identify emotions taking into consideration the facial expressions, tone of voice and pitch. But due to excess use of technology, people are not getting enough time to make themselves skilled at perceiving emotions in themselves and others.

2.2 Social Interactions:

Being social is a need of human as every individual needs social circle to grow. Technology is playing a vital role in connecting people who are far apart from each other but on the other hand it is divorcing people who are in front of each other. Due to the addiction of social media and internet, people have got so much engaged with

technology that they do not even bother about the emotions and feelings of their loved ones. Posting personal data on social media has cause an ego boost in individuals, which is considered as a unhealthy behaviour.

Technology provides a great platform to express the creativity in numerous ways, but teenagers today are not much aware about the backfire caused due to posting the personal stuff on social media. This may hinder their mental well being thereby, affecting their self awareness[9] and emotional quotient. Having a balanced emotional quotient is a matter of fact as it helps us to have strong instincts and self-confidence and it improves our ability to be focused.

III. RESEARCH METHODOLOGY

The massive issue universe is facing is the dependency and impression which technology is leaving on society. This is a undeniable truth that human is getting a great help from technology, but it also cannot be denied that technology is affecting human mentally. There are various factors which are badly affected by ease of technology.

The present area of study focuses on these specific objectives:

- a) To analyze the factors which are affecting society and an individual in consideration with technology.
- b) To consider the factors for data analysis and find out the most impacting factors on society.
- c) Based on the above literature study and further data analysis, the following factors are conceived:
 - 1) *Self Awareness*
 - 2) *Self Regulation*
 - 3) *Motivation*
 - 4) *Empathy*
 - 5) *Social Skills*
 - 6) *Physical Health*
 - 7) *Stress*
 - 8) *Enviornmental Factor*
 - 9) *Others Perspective*
 - 10) *Interest*
 - 11) *Relationships*
 - 12) *Reflecting your emotions*

3.1 Sample size and target

The sample research element is the respondent base in Meerut and NCR region. The sample size for the study was 450 out of which 408 respondents validated the study. As the objective of this study is to analyze the impact of technology on various factors which are affecting society which itself is much specific in nature, we

have restricted our study to certain parameters and elements in due consideration of technological issues due to time and resource constraints. For the purpose of this project, convenience sampling was used and people were surveyed as per convenience.

The research evaluates the significance and impact of seven different types of factors that are affecting humans in terms of technology as per questionnaire factor analysis. A total of 12 factors were initially considered for the data analysis but Exploratory factor analysis reduced the number to 8 factors only. The data which is collected is primary in nature on the basis of which the report is formulated however the authors accept the limitation of certain parameters which restricts the study to being more descriptive rather than exploratory in nature.

3.1.1 Pilot Testing [10]

In order to assess the clarity of the questions and also the reliability of measures of variables, pre testing was done. A total of 70 pre-test surveys were selected from a non-probability sample of the sample population under study, the results of which helped us to rectify questions that might be confusing or hard to understand and then design an improved questionnaire [10], [11] for survey.

3.1.1.1 Sampling Procedures

The research has implied survey technique to collect information. On the basis of research criterion, the questionnaires were distributed to various respondents in Meerut and NCR region. The respondent/ subject cell were adolescent respondents between 12-19 years of age and adults of 20-30 years of age. The convenient sampling method was used in the study. 450 participants were given structured questionnaire that contained psychological and physiological Development Related Questions. The questionnaire method was adapted and contained 84 items. The survey instrument divided respondents answerable to 12 different factor loads impacting emotional quotient. But the drawback with this questionnaire is erroneous responses and incomplete return survey.

3.1.1.2 Response Rate

We distributed a total of 450 questionnaires and received a total of 408 utilizable responses thus achieving a good response rate of 90.66% while the rest mentioned several reasons such as busy schedules, lack of interest, or personal reasons. During the data analysis process, any erroneous responses were not taken into account. We assumed that we had received a considerably high response rate as we had number of follow-ups to the respondents so as to get the thorough surveys.

3.1.1.3 Instrument and Measures

In order to form the questionnaire various factors like social skills, empathy, stress, motivation (total of 12 factor dimensions) were generated, on the basis of which technology is affecting emotional intelligence. The process resulted in generation of 84 items in questionnaire (7 items per dimension at least) including generalized as well as study related questions based on adaptation.

3.1.2 Data Analysis

Exploratory Factor Analysis (EFA) [12], [13] was performed to reduce the number of items in the questionnaire. A two-step approach for analysis has been adopted. In the initial stage, the measurement model

was analyzed to ensure reliability and validity of the construct. In the second stage the factor analysis was elaborated. The respondents answered according to their rationalization and judgement.

3.2 Reliability and Validity Test

3.2.1 Reliability

In order to test the reliability [14] of 84 items in the questionnaire, factor analysis was generated using IBM SPSS Statistics software (22.0) [15], [16]. The alpha coefficients for each factor entailed in this study are described in table I.

The measures considered in the study were adapted from previous studies. To refine the scales Cronbach's alpha coefficient and exploratory factor analysis [17], [18], [19] were employed. It was due to the multidimensionality of the factors, coefficient alpha (Cronbach, 1951) was computed separately for each of the 12 factors of construct.

Reliability test for factor analysis of impact of technology on society was done separately on 12 factors taken into account (as shown in table I). The results showed at least 8 items as necessary to include in the list of construct reliability for which alpha coefficients have been directly assigned in table of construct reliability.

We fixed cut-off level of 0.7 as recommended for theory testing research (Nunnally & Bernstein, 1994) [20] thereby eliminating those factors that did not satisfy the reliability test. Corrected item-to-total correlation [20] was the criterion used in deciding which item to be deleted. Recompiling the alpha values for the reduced sets of items and examining new corrected item-to-total correlations helped in further deletion of items whose elimination improved corresponding alpha values. This sequence was repeated several times and resulted in a set of 56 items across the 8 constructs. (84 items across 12 constructs was initially selected).

TABLE I. Reliability test for factors affecting human's emotional quotient via technology Questionnaire

S. No.	Factors Considered	Cronbach's Alpha	The alpha coefficients for factors- 3, 4, 5, 6, 7,9,10,12 showed satisfactory level of reliability being in the range of .715 and .867. However, factors 1, 2, 8 and 11 showed low reliability with alpha coefficients of .612, .685,.684 and .647 respectively indicating unsatisfactory level of reliability regards affect of technology on human's emotional quotient. For consistency, unsatisfactory factors were not taken into consideration and it was decided to load the factors with atleast .7 cronbach's alpha.
1	Self Awareness	.612	
2	Self Regulation	.685	
3	Motivation	.756	
4	Empathy	.798	
5	Social Skills	.815	
6	Physical Health	.810	
7	Stress	.773	
8	Enviornmental Factor	.684	
9	Others Perspective	.739	
10	Interest	.785	
11	Relationships	.647	
12	Reflecting your emotions	.804	

^a. Source: Open Source Factor Analysis

3.3 Exploratory Factor Analysis (EFA)

Factor analysis was done to examine the dimensionality of 84 item scale. To reduce the no. of items and to determine construct validity we used EFA. To examine whether the data was fit to use factor analysis and sampling adequacy [21], [22], The researcher's used Kaiser-Meyer-Olkin (KMO) [20] and Bartlett's Test [23]. Table II shows KMO measure of sample adequacy as (.857) close to 1. Moreover, while using Bartlett's Test of Sphericity [24], [25], significant value ($p=.000$) was less than 0.05 ($p\text{-value} < 0.05$). Therefore, the sample and factors extracted here were considered as Optimised and adequate.

TABLE II. KMO and Bartlett's Test

Test		Adequacy
Kaiser-Meyer- Olkin Measure of Sampling Adequacy		0.857
Bartlett's Test of Sphericity	Chi- Square	10754.602
	Significant Value	.000

IV. SURVEY FINDINGS

On the basis of above survey so conducted, 8 factors out of 12 factors, are to be considered through the reliability test, shown in Table I, II. The factors that are most encountered in any issue related to technology affecting emotional quotient are Social Skills, Physical Health, Stress, Relationship, Reflecting Emotions, Interest, Motivation and Other Perspectives.

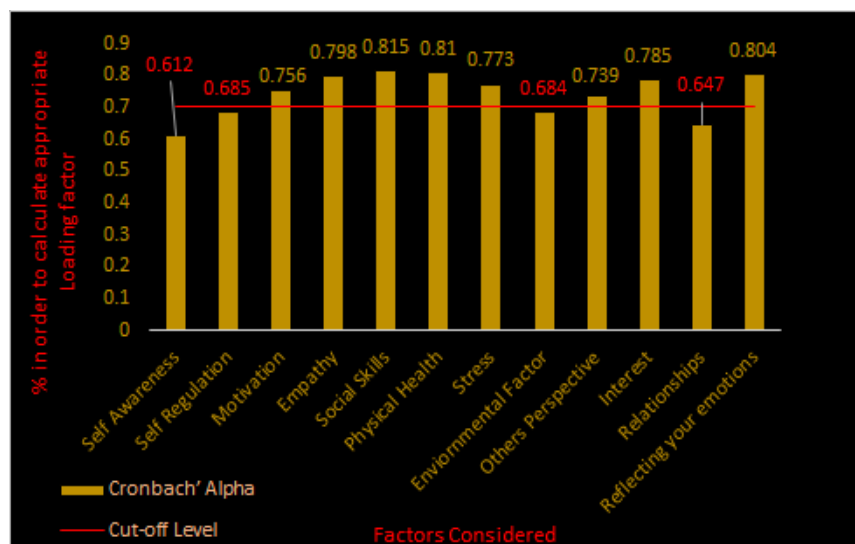


Fig. 1. Open Source Factor Analysis for suggested 12 factors using Cronbach's Alpha

The compiled analysis for finding the most relevant factors that are best fit for this survey are represented by fig. 1. It is found that factor named, Social Skills has greatest Loading Factor. This means that technology is affecting the Social Skills of human psychologically. Second most relevant factor is Physical Health, This is one

of the merging need to be rectified as soon as possible, because it has been observed that people are getting physiological disorders because of excess usage of technology.

Third most relevant factor with highest loading factor is Reflecting your Emotions. The major issue human species is facing is the declinment in percieveing and reflecting the emotions due to rapidly growing social networking sites and availability of internet to access them.

Factors with least loading factor [24] can be, such as Self Awareness, SelfRegulation, EnviornmentalFactor and Relationships. We can't ignore these factors just because they have least value for Cronbach's Alpha analysis, these factors also affect human lives psychologically regards to technology.

V. CONCLUSION AND FUTURE SCOPE

Technology has become a successful tool for the upliftment of human species today. In the paper, numbers of factors are obtained in accordance to select such techniques that contribute towards healthy life for every living being. In this paper, a Cronbach's Alpha factor is being found out to find the most relevant factors out of the list of factors set in primary questionnaire. It has been found that majority of population gives priority to social skills issues faced in current scenario, concluding to its excess usage. In contrast to this self reliance factors are found to be least affected but if people would be well educated about technology and its utilization in an effective and appropriate manner. This would be a greater step towards a healthy living (where everything follows sustainability, i.e., in relation to development, agriculture, design, etc.). The main purpose of this research is to identify the factors that are making negative impacts on misusing smart technologies along with society. However, it also gives detailed analysis of the impact of smart technological techniques on individuals and society in both the ways (Automisation & Sustainability).

VI. REFERENCES

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