

**AN EXPERIMENTAL STUDY ON` PREVAILING EMOTIONS
AND RECOGNITION OF FACIAL EXPRESSIONS IN
THE VIRTUAL STIMULI**

A Thesis submitted

In partial fulfilment of the requirement of degree of

MASTERS OF ARTS

IN

PSYCHOLOGY

(COUNSELING)



THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

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CERTIFICATE

I hereby declare that the work presented in this thesis entitled, “ An experimental study on prevailing emotions and recognition of Facial Expressions in the virtual stimuli” in partial fulfilment of requirement for the award of Degree of Masters in Psychology, submitted in the School of Humanities and Social Sciences, Thapar Institute, Patiala is a bonafied work carried out under the supervision and guidance of Dr.(Mrs) Surinder Kaur, Visiting Professor, School of Humanities and Social Sciences, Thapar Institute of Engineering & Technology, Patiala and that no part of the project has been submitted for the award of any other degree.



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This is to certify that the above statement made by the student concerned is corrected and true to best of my knowledge.



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CANDIDATE'S DECLARATION

I hereby declare that the work presented in this thesis entitled, “ An experimental study of prevailing emotions and recognition of Facial expressions in the virtual stimuli” in partial fulfilment of requirement for the award of Degree of Masters in Psychology , submitted in the School of Humanities and Social Sciences, Thapar Institute, Patiala under the supervision and guidance of Dr.(Mrs) Surinder Kaur, Visiting Professor, School of Humanities and Social Sciences, Thapar Institute of Engineering & Technology, Patiala and refers other researcher's work which are duly listed in reference section.

The matter embodied in this thesis has not formed the basis for the award of any other degree of this or any other university.

Dated: June, 2018

Place: Patiala



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This is to certify that the above declaration made by the student concerned is corrected and true to best of my knowledge.



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ABSTRACT

The effects of “prevailing emotions and recognition of facial expressions in the virtual stimuli” was investigated using three scales emotional sensitivity self assessment scale which consisted of 20 items, Danva 2 test which consisted of 24 pictures of happy, sad, fearful and angry emotion and PANAS-GEN scale which consisted of 20 items, ten items projecting negative affect and ten items projecting positive affect. The results on all the three scales were compared and gender differences were found. Also differences were found in positive and negative emotions with intensity. The total sample taken was 122 subjects (61 males and 61 females) in the age range of 18-25 years. The study found that females of the present age-group were more sensitive to emotionality than males . They were also found to be better at recognising emotions in the facial expressions more accurately. However judging the intensity of facial emotions did not show any differences between the males and females. This study explains the relationship between emotional sensitivity, positive emotions and negative emotions, happiness, sadness, fearfulness anger and judging the emotional intensity accurately. The correlations have been found to be significant at $P < 0.5$ and $P < 0.01$ level. Study could be implicated as a great tool of investigation in the fields of forensic psychology, investigating agencies, marketing and advertising.

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CHAPTER 1

An Experimental Study on Prevailing Emotions and Recognition of Facial Expressions in the Virtual Stimuli

INTRODUCTION

Emotions seem to be fundamental to human beings helping in communicating between the two. Emotions by definition represent responses in reaction to stimuli. Emotional reaction facilitates an appropriate response to stimuli which can be considered either positive or negative. An emotion's association with either approach or avoidance behavior is called its valence. Positive-valence emotions are associated with approach behavior, whereas negative-valence emotions are associated with avoidance behavior to stimuli. Emotional reactions have varying degrees of intensity. The level of emotional intensity is termed "arousal", experienced by the organism as physiologic activation. Arousal serves as an indicator of the propensity for action in response to a stimulus. Hence the role of valence is to assign a directional component of action and arousal assigns a level of urgency to that action.

It is also said that emotions may be very specific or general, very brief and scarcely cognisant, may pass through a flush of humiliation or give rise to a fury of anger. The marked physical accompaniments of the emotions are the facial expression, that is so conspicuous that rarely become invisible to the observers. A face is the only part that conducts the activity of emotional expression and helps in communicating with the world both verbally and non-verbally. It is even said that human face resembles a maze-like structure that consists of different muscles which work independently of each other. Facial appearance gives clues about age, identity, gender as well as the emotional state of the individuals. Facial nerves that are directly connected to the brain and is responsible for interpreting an expression that an individual has on the face and the words he/she speaks. A face can express the emotions much faster than the person himself

could recognize or feel. Other researchers reported that emotion is a conscious experience of pleasure or displeasure that brings about psychological or physiological changes in one's behavior. Aristotle explained that emotions are responsible feelings that can influence the men's judgments, and may let the individual experience pain, pleasure, anger, pity, fear and the like, with their opponents.

Mood and feelings are closely interrelated terms that are often used for emotions though they differ from each other. Primary emotions are happiness, angry, fear, sad, disgust and surprise. These emotions are found in each culture and at all the age-levels. But recent researches have shown that there are more categories of emotions that we can express. Moods have lasting dispositions either in the capacity of being reactive or providing endogenous conditions in helping one to react. Due to such conditions, some individuals are highly reactive to external or internal stimuli and others remain empathetic. Todorov(2015) describes ten characteristics that make an individual exceptional in responding to emotional stimuli.

Being sensitive means having or showing a quick and delicate concern of others' feelings, reacting to situational or environmental changes, being over reactive to emotional situations. Being emotional is related to a person's own emotions. Difference between being sensitive and emotional is very small. A highly emotional person could be sensitive but at the same time, it is not necessary that he will be sensitive. Because being emotional means understanding other's emotions and being sensitive means reacting according to emotions delicately. When a person is sensitive, he/she will react but emotional people tend to be not much reactive with respect to other's emotions i.e., they understand others emotions but may not react rather behave normally. On the other hand, the person who is emotional and sensitive too will react on understanding other's emotions too.

Sensitivity is a characteristic of interaction whereas emotionality is characteristic of how you feel about the individual's scenes, situations, happening around you. Emotional sensitivity refers to the effortlessness or complexity within an individual to respond to various situations emotionally. There are no doubts about the fact that some people seem to have heightened emotions and are considered more sensitive than others.

The studies have reported that females are not only more emotional, they are also found to be good at managing their own emotions and emotions of others, have high interpersonal sensitivity and emotional intelligence. The presence of emotional intelligence trait helps them to perceive the emotion of others correctly. Getting the correct information about others feelings, thoughts, and intentions is essential to make social interactions successful (Côté Lopes, Salovey, & Miners, 2010). Many researches on sex differences in emotion recognition have shown that women are better at decoding non-verbal communication and emotions than men.

Importance of emotions for the living beings has motivated the researchers to work in vast areas of research related to emotions in one way or the other. One among such fields is to find out who is good at recognizing the emotions in the others (Hall,1984;1978; 2000).

Judging the emotion correctly from others' faces has been regarded as important as it provides correct information about what goes on in other person's emotional state that consists of personal intentions, positive and negative thoughts and feelings which are the important crust of social interactions. The other studies report that females are better to recognize the emotions of other females (Mandal & Palchoudhury, 1985; Rotter & Rotter, 1988; Wagner, MacDonald, & Manstead1986). When shown with the continuous series of photos, most of the individuals can classify emotions that they can be seen on the other person's face. In other words, they can recognize emotions by looking at their facial appearance. There is a great debate which has been going on that our facial appearance has a link with our own emotions at that time. The previous research focuses on "How Facial Appearance affects our Recognition of Emotions". The present

study on “Prevailing emotions and its impact on recognition of facial expression in the virtual stimuli” is being studied. Emotional sensitivity will also be studied along with the prevailing emotions as a facilitating factor in recognizing the facial expression in the virtual stimuli. The prevailing emotion at a particular time for some duration of time is called Mood. The question here is if the person is sad whether he will recognize the sad expression more or if he is happy will recognize more of the happy expressions on the face.

RESEARCH GAP

Majority of the studies are conducted on the recognition of emotions in the western culture but the consequences of prevailing emotion on the recognition of the emotion has been neglected, hence I decided to conduct the present study.

CHAPTER 2

LITERATURE REVIEW

Researchers have found that one's facial expressions are most powerful and natural way of communicating the intentions and feelings to another person . They appear even before one realise his/her emotions. Also a deep understanding of facial appearance is necessary to understand human emotion and paralinguistic communication (Tian and Cohn 2001). Bartlett , Hager and Ekman and Sejnowski (1999)-reported based on his studies that there is direct relationship between our facial behaviour and our internal state. Developed methods to classify facial action with the use of sequence images. Desmet (2003) used non-verbal instrument in his research to measure emotions of a person because it does not require the respondent to verbalise his/her emotions thus can be used cross-culturally. Facial action coding system is great tool that can be used to measure facial appearance in relation to one's emotions and has great reliability and validity. Over the period of time it has become very popular. Adam et.al (2016) found that elderly or old-age faces reflect or relate with more negative aspect of emotions rather than positive. He further reported women are said to be more emotional than men and they express their emotions freely in comparison to men. It was also reported that angry expression elicit angry intentions of a social being . Enhanced aggressive expression may lead to avoidance of conflicts (Thomas, Pierre and Marco 2015). Perception of faces reveal social interaction opportunities and they are closely linked to action and behaviour influences face perception (Zebrowitz and Montepare 2010).Women appear to be more angrier than men whereas men appear to display more of smiles and seem to be happier than women (Hess, Kleck and Adams, 2004). Judith, Hall and David Matsumoto (2004) discovered that women have the higher tendency to identify target emotion than men , and are able to pick up the correct option out of the available choices. Whereas men lack to correctly identify an emotion from facial appearance of individuals. Donges , Kersting and Suslow (2012) concluded in their study that women relate

to positive emotions at a higher rate than men but at the same time men relate more with negative emotions than females. Gregorić and others(2014)- Conducted a study in Croatia 259 students consisting of both males and females attending university and college for recognition of facial expressions in men and women. They presented with the pictures of female actor and a male actor who were depicting different emotions such as happiness, sadness, anger, disgust, anxiety, surprise, fear, shame ,worry ,contempt , confusion and a neutral face. It was found that Female outperformed men in identifying the emotion of happiness , surprise, fear and sadness. Similarly men outperform women on anger but both the genders couldn't successfully perform on the emotion of anxiety and worry.

The emotion recognition task using video clips of expanding length were introduced, beginning with an unbiased face that progresses into an outward appearance of changed forces (20%-100%). The outcomes demonstrated that joy was the least demanding feeling to perceive, while fear was the most troublesome. In addition, more established grown-ups performed more regrettable than youthful grown-ups on outrage, bitterness, dread, and satisfaction, however not on nauseate and astound. These discoveries show that this worldview is most likely more touchy than feeling observation errands utilizing static pictures, proposing it is a valuable apparatus in the evaluation of inconspicuous hindrances in feeling discernment (De Haan , Perrete, Kessels 2007).

Intyre et. al,(1990) explored the impacts of social collaboration, exercise, and test weight on positive and negative affect utilizing the PANAS. The study found that social communication and exercise expands positive affect but they did influence the negative affect (Intyre et. al,1990). Scientists enrolled 46 subjects (25 female and 21 male) and discounted potential contributing variables like age contrasts, training levels, conjugal status, ethnicity, and financial status. Each volunteer was given a blood test toward the start of the survey changing levels of estrogens and testosterone keeping in mind the end goal to perceive how they added to comes about. After the

blood tests, subjects were presented to pictures that evoked positive, negative, or unbiased feelings while experiencing fMRI mind filters. Subjects were additionally requested to see their emotional reactions when taking a look at the pictures. In general, females revealed being more receptive to the pictures of emotions. In the mean time, larger amounts of testosterone were related with decreased sensitivity, while higher estrogens levels, paying little attention to the individual's sex, implied increased sensitivity. (Magaldi 2015) Outward appearance is one of the significant highlights of facial recognition lately, and it has turned into a hotspot. In this paper, they show a novel strategy for facial recognition in view of cloud display, in mix with the customary Facial expression framework. Right off the bat, we complete the change from pictures into pattern with M by N, where M and N mean the real picture situating of the pattern. Also, they did information pre-handling for the first outward appearances of information pictures. Cloud beads picture can be acquired as the contribution of in reverse cloud generator with a specific end goal to extricate the three numerical attributes, that is, Ex, En and He. With these three qualities, outward appearance can be figured it out. At long last, so as to exhibit the achievability of the displayed technique, we direct a contextual analysis of outward appearance acknowledgment in view of cloud demonstrate. The outcomes demonstrate that the technique is achievable and compelling in outward appearance acknowledgment. (Hehua Chi et. al 2011) In respect to controls, the Conduct Disorder bunch demonstrated disabled acknowledgment of annoyance, terror, enjoyment, gloom and shock. There were no huge contrasts in execution between the CD probands and the unaffected relatives following redress for various comparisons. These outcomes recommend that facial appearance acknowledgment deficiencies are available in young people who are at expanded familial hazard for creating solitary conduct, and the individuals who have officially created CD. Thus, debilitated feeling acknowledgment seems to be a reasonable familial hazard marker or competitor end phenotype for CD (Kate sully et.al., 2015). The information acquired (Cary Dale et.al.,2015)in this paper underpins the theory that

ladies are better at distinguishing facial enthusiastic articulations than men. Particularly our information indicates that ladies are more skilful at recognizing facial passionate articulations than men of college-age. In the present work (Aleix Martinez and Shichuan Du 2012) have condensed the improvement of a model with a key thought that this model is to join an arrangement of face spaces characterizing some fundamental feeling classes. The model is reliable for comprehension of human discernment and can be effectively abused to accomplish incredible acknowledgment comes about for computer vision applications. They have demonstrated how, to be steady with the writing, the measurements of these computational spaces need to encode configural and shape highlights.

CHAPTER 3

3.1. MOTIVATION FOR THE STUDY

Conflicting situations and interaction problems happen due to lack of understanding of each others' emotions. Deep understanding of the emotions of the others is must, to avoid many unwanted happenings. The need for accurate judgment of emotions gave a kick to go for this study. Also, a TV show series " Lie to me" which takes into account the facial appearance of an individual in guessing whether the individual is telling the truth or not.

3.2. OBJECTIVE OF THE STUDY

1. To study the recognition of emotion from the facial Expressions in the virtual stimuli.
2. To study the gender differences in recognition of emotion from facial expressions
3. How one's present emotional state effect his capability of recognising others' emotion To meet the above objectives of the study guidance for purposing the hypotheses was taken from some the literary work and theories.

3.3. RATIONALE AND HYPOTHESES

1. EMOTIONAL SENSITIVITY

Researchers solicited two gatherings from volunteers, 15 fathers, and 15 moms, to watch a progression of recordings while their physiological reactions were estimated by skin conductance anodes. The material was arranged into four types: delighted, entertaining, energizing and inspiring – and specialists were astounded to see that men showed imperceptibly more grounded responses and most to the majority of the initial three. Considerably additionally stunning was the outcomes for the "endearing" class, in any case. The investigation demonstrated that men really reacted twice as much to this emotional clips presented to them than women. Thus, the

study proposes that men feel more responsive than women, yet are not ready to express those feelings transparently because of desires that have been put on them by society. (Withnall 2018)

H₁:- Males and females differ on the sensitivity to emotionality

2. RECOGNITION OF EMOTIONS

The gathering of expression (e.g., outrage and trouble) is sensibly perceived at closeness as it were. A Personal computer vision framework ought to perceive these expressions in great quality pictures. A fascinating open inquiry is to decide why this is the situation and what can be realized about human recognition from such an outcome. (Martinez et al 2012). Tian et al (2001) have confirmed that expression on the faces of the individual conveys the message of the particular emotions to the others much faster than the individual having the emotion understands himself. Likewise, a profound comprehension of facial appearance is important to comprehend human feeling and paralinguistic correspondence.

H₂:- Females can recognize emotions in the facial expressions better than males

H₃:-Females are better than males in judging expressed intensity of emotion.

H₄:-Prevailing emotions facilitates the recognition of a particular emotion.

3. INTENSITY OF EMOTIONS

The consequences of a research on the exactness of power evaluations of feeling from outward appearances are accounted for the present research. It appeared that unconstrained outward appearances of fundamental feelings are a solid wellspring of data about the class of feeling. The question is raised whether this can be valid for the power of feeling too and whether the precision of power appraisals is subject to the spectator's sex and professional introduction. A sum of 228 eyewitnesses of both genders and of different professionals evaluated the enthusiastic power of exhibited outward appearances on a scale-run from 0 to 8. The outcomes have provided the

speculation that unconstrained outward appearances of essential feelings do give adequate data about enthusiastic force. In any case, the precision of rating has been demonstrated to shift with the class of the feeling exhibited. (Kostic 2003)

H₅:- Accuracy in intensity judgment of emotions facilitates correct emotional recognition

4. POSITIVE AND NEGATIVE AFFECT

Kivikangas, et al (2014) analyzed the contrasts amongst male and female passionate influence reactions to rivalry and participation amid and after (characteristically inspired) diversion play, controlling for different jumbling factors. In the two analyses, we discovered solid support that guys would display more positive feelings amid focused than agreeable amusement play, yet no evidence for that females would indicate more positive feelings amid helpful diversion play. Hence they display different emotions.

H₆:- Gender contributes significantly towards affect score.

H₇:- There is a relationship between emotional sensitivity, positive - negative affect and the recognition of emotions in facial expressions

CHAPTER 4

METHODOLOGY

4.1 SAMPLE:

122 subjects participated in the study, 61 Males & 61 Females, in the age range of 18 to 25. Educational background of the subjects was graduation. Subjects were included in the study after obtaining their consent. All the subjects had normal vision.

4.2 DESIGN

Variables treated as Independent in this study was the gender, emotional sensitivity, intensity of the emotion and positive and negative emotions and the Dependent variable was the recognition of affect in the facial expressions.

4.3 TOOLS USED:

(i) **The Diagnostic Analysis of Nonverbal Accuracy 2 (DANVA 2).**

This test was presented within American Psychological Society by Nowicki and Duke in 1989 and was published in 1994 in the Journal of Nonverbal Behavior. The test measures a person's competence in affect recognition by reading facial expressions. Four basic emotions projected in the pictures were happiness, sadness, anger, fear. Two levels of emotional intensity are also attached to each emotion i.e. to what an extent that emotion is expressed ranging from high to low potency. There are 24 photographs of adult facial expressions. Internal Consistency of the test coefficient alpha ranged from .69 to .81. Test-retest reliability of the test ranged from $r = .74$ (See APPENDIX A).

(ii) Emotional Sensitivity Self-Assessment

This test was given by Karyn Hall and it consists of 20-items, each item is rated on a likert scale 1 to 4. Responses ranging from strongly disagree to strongly agree. Psychometrically test is found to be reliable and valid. (See APPENDIX C)

(iii) Positive and Negative Affect Schedule (PANAS)

This scale is a self-report measure and was developed in 1988 by Watson, Clark, and Tellegen from the University of Minnesota and Southern Methodist University. The PANAS consists a list of 20 adjectives, with 10 adjectives each measuring positive affect and 10 adjectives negative affect. The affect is measured on a five-point Likert scale from “very slightly or not at all” (1) to “extremely” (5). the total score is calculated by the sum of the 10 positive items, and then the sum of 10 negative items. Scores range from 10 – 50 for both the sets of items. Higher positive score, indicates more of a positive affect. Higher negative score, indicates more of a negative affect or vice-versa

Internal consistency of the test ranged between .86 - .90 for positive affect and .84 - .87 for negative affect. Test-retest reliability 0.79 for positive affect and .81 for negative affect. Correlation to BDI was found to be .65 for negative affect and -.29 for positive affect. (See APPENDIX B)

4.4 PROCEDURE

This experiment was carried on college students of age range 18-25. Consent of the subjects was taken and they were informed in detail about the research being conducted. The study was conducted in the group of 5 candidates. Emotional sensitivity Self-assessment questionnaire was administered on the candidates to assess their emotional sensitivity. It consisted of 20 items in the form of statements. Subjects were asked to notify the response which is relevant to them. There was no time limit for the questionnaire but they were instructed to respond to the question as

quickly as possible. Positive and Negative Affect Schedule (PANAS) which consists of 20 items i.e 10 negative and 10 positive. Subjects were required to rate their present emotions on the five-point scale, what they are feeling right now, in the current situation on each emotional word given in the test may be positive and negative.

After the questionnaire administration, the DANVA2 test was applied on the subjects which consisted of 24 different pictures, each depicting a different emotion which varied in intensity of potency attached to each emotion expressed ranging from high to low. They were asked to recognize the 4 emotions happy, sad, fearful and angry, expressed in the pictures with the level of its intensity as shown in the video.

CHAPTER 5

RESULTS

In order to meet major objectives of the study, obtained data was subjected to the number of hypotheses which were tested using different statistical analyses. The results of these analyses are described under separate headings as a matter of convenience.

HYPOTHESIS 1

Males and females differ on the sensitivity to emotionality

To test the hypothesis mean score of males and females on the scale of sensitivity was compared using t-Test. The result of the study found significant differences between both. The mean score of females on emotional sensitivity was 52.79 and for males' 49.51(refer Table No.1). The differences being significant at $P < 0.01$ level. The first hypothesis of the study that "Males and females differ on the sensitivity to emotionality is accepted.

Table No.1

Mean, Sd and t vales of males and females on emotional sensitivity

| Variables | Gps | N | Mean | Std. eviation | T | Df | Sig |
|-----------------------|------------|----------|-------------|----------------------|----------|-----------|------------|
| Emotional Sensitivity | Males | 61 | 49.51 | 6.52 | 2.809 | 59 | .006** |
| | Females | 61 | 52.8 | 6.37 | | 59 | |

**** $P < 0.01$**

HYPOTHESIS 2

Females can recognize emotions in the facial expressions better than males

The second hypothesis purposed was that females can recognize emotions in the facial expressions better than males. To verify the hypothesis the group was tested on the DANVA2 test that had 24 different pictures, each depicting a different emotion. Subjects were asked to recognize the emotions which they felt the facial expression was depicting happy, sad, fearful and angry. Analysis of the result revealed that the mean score of females is more as compared to males on total recognition of emotions; $P < 0.001$ and also on all the other 4 emotions. Females tend to score high on recognizing the emotions accurately in the facial expressions whether happy, fear, angry and sad. The difference being significant at $P < .01$ level for happy, fear, angry and sad emotion. The hypothesis seems to be accepted. Results are shown in Table No.2

Table No.2

Mean, Sd and t Vales on Recognition of Emotions in the Facial Expression between the Males and the Females

| Variables | Gp | N | Mean | Std. Dev. | T | Df | Sig |
|--------------------------|-----------|----------|-------------|------------------|----------|-----------|------------|
| Total Recognition | Female | 61 | 18.34 | 2.54 | 4.624 | 59 | .000 |
| | Males | 61 | 15.51 | 4.06 | | | |
| Happy | Female | 61 | 5.56 | 0.76 | 3.097 | 59 | .002 |
| | Males | 61 | 5.03 | 1.08 | | | |
| Fearful | Female | 61 | 4.21 | 1.28 | 3.438 | 59 | .001 |
| | Males | 61 | 3.30 | 1.65 | | | |
| Angry | Female | 61 | 3.75 | 1.31 | 3.470 | 59 | .001 |
| | Males | 61 | 2.95 | 1.24 | | | |
| Sad | Female | 61 | 4.82 | 1.06 | 2.501 | 59 | .014 |
| | Males | 61 | 4.23 | 1.51 | | | |

**** $P < 0.01$**

HYPOTHESIS 3

Females are better than males in judging the expressed intensity of emotion

The hypothesis that females are better than males in judging expressed emotional intensity is not accepted. While the group was being tested on the DANVA2 test, subjects were asked to judge the intensity of the recognised emotion in the facial expression whether low or high. Test of significance revealed that no difference was seen between males and females when their responses were scored for correct judgment of the emotional intensity (low or high). See the results in Table No. 3

Table No. 3

Mean, Sd and t vales on Judgment of intensity of emotion between males and females

| Variables | GP | N | Mean | Std. Deviation | T | df | Sig |
|-----------|--------|----|-------|----------------|------|----|-----|
| Intensity | Female | 61 | 15.80 | 3.91 | .409 | 59 | NS |
| | Males | 61 | 15.51 | 4.06 | | | |

HYPOTHESES 4

Prevailing emotions facilitates recognizing of particular emotion

To test the hypothesis the score on Positive and Negative affect schedule was calculated. To estimate the prevailing emotion or affect balance for each subject, score obtained on the Negative Affect was subtracted from the score obtained on the Positive affect. The group was then divided into two groups. The group 1 having more of positive emotion prevailing and group 2 showing negative prevailing emotions. The hypothesis was partially accepted. The group high on positive prevailing emotion recognized more happy expressions than the group who was high on negative balance. The differences being significant at $P < 0.05$ level. It was also seen that the subjects with

negative balance tend to score high on recognizing the negative emotions more though differences was not found to be significant. Refer Table No.4

Table No.4
Mean, Sd and t vales on recognition of emotion between the prevailing emotions positive and prevailing emotions Negative

| Variables | GP | N | Mean | Std. Deviation | T | Df | Sig. |
|-------------------|-----------|----------|-------------|-----------------------|----------|-----------|-------------|
| Total Recognition | P E Pos | 97 | 17.07 | 3.10 | 0.72 | 115.00 | NS |
| | PE Neg | 20 | 16.45 | 5.17 | | 21.90 | |
| Happy | P E Pos | 97 | 5.39 | 0.84 | 2.18 | 115.00 | 0.03* |
| | PE Neg | 20 | 4.90 | 1.25 | | 22.62 | |
| Fearful | P E Pos | 97 | 3.71 | 1.49 | -0.50 | 115.00 | NS |
| | PE Neg | 20 | 3.90 | 1.71 | | 25.23 | |
| Angry | P E Pos | 97 | 3.39 | 1.25 | 1.21 | 115.00 | NS |
| | PE Neg | 20 | 3.00 | 1.65 | | 23.64 | |
| Sad | P E Pos | 97 | 4.58 | 1.11 | -0.23 | 115.00 | NS |
| | PE Neg | 20 | 4.65 | 1.93 | | 21.65 | |

*P<0.05

HYPOTHESES 5

Accuracy in intensity judgment of emotions facilitates correct emotional recognition

The subjects were divided into two groups based on the average performance in accurately judging the intensity, the one group above the average and the other performing below the average. The average score was found to be 13. The analysis of the results revealed that the group who scored high (above average) at judging the intensity right also scored high on judging the correct emotion. There was significant difference on recognition of all the emotions, happy, fearful, angry and sad. The differences being significant at P<0.01 level. Thus the hypothesis that “accuracy in intensity judgment of emotions facilitates emotional recognition” is accepted.

Results are shown in Table No.5

Table No.5
Mean, Sd and t vales on recognition of emotion and accurate judging of emotional intensity

| Variables | Intensity Judging | N | Mean | Std. Deviation | T | Df | Sig |
|--------------------|--------------------------|----------|-------------|-----------------------|----------|-----------|------------|
| Recognition | A Avg | 98 | 17.68 | 2.72 | 6.51 | 120.00 | 0.01** |
| | B Avg | 17 | 12.29 | 5.18 | | 17.45 | |
| Happy | A Avg | 98 | 5.51 | 0.74 | 7.50 | 120.00 | 0.01** |
| | B Avg | 17 | 3.94 | 1.14 | | 18.20 | |
| Fearful | A Avg | 98 | 3.93 | 1.38 | 3.33 | 120.00 | 0.01** |
| | B Avg | 17 | 2.65 | 2.00 | | 18.56 | |
| Angry | A Avg | 98 | 3.49 | 1.25 | 2.82 | 120.00 | 0.01** |
| | B Avg | 17 | 2.53 | 1.59 | | 19.35 | |
| Sad | A Avg | 98 | 4.74 | 1.07 | 4.91 | 120.00 | 0.01** |
| | B Avg | 17 | 3.18 | 1.94 | | 17.59 | |

****P<0.01**

HYPOTHESIS 6

Gender difference contributes towards affect score

Scores obtained on positive negative affect schedule both by males and females were analyzed. The possible score one could have on this schedule is 10-50 on each affect. Analysis of the result showed no differences between males and females either on Positive affect schedule or on negative affect schedule. The hypothesis that Gender contributes towards affect score is not accepted. Study found no differences in the mean scores as t test failed to discriminate between males and females. Refer Table No. 6

Table No.6

Mean, Sd and t vales on Affect scores of males and females

NS= Not Significant

| Variables | | N | Mean | Std. Deviation | T | Df | Sig |
|--------------------------|---------|----------|-------------|-----------------------|----------|-----------|------------|
| Positive emotions | Females | 61 | 30.36 | 6.40 | -1.190 | 59 | NS |
| | Males | 61 | 31.80 | 6.97 | | | |
| Negative emotions | Females | 61 | 20.00 | 7.53 | -.755 | 59 | NS |
| | Males | 61 | 21.05 | 7.82 | | | |

HYPOTHESES 7

There is a relationship between emotional sensitivity, positive emotions, negative affect and the recognition of emotions in facial expressions and its intensity

Analysis of the correlation matrix of relationship between the different variables showed that emotional sensitivity had low correlation with the Positive and Negative Affect. It is interesting to note that emotional sensitivity shoed negative correlation with positive affect and positive correlation with the negative effect. Recognition of happy emotion correlated positively with the recognition of other emotions $r=$

Positive Affect was correlated negatively with the negative affect recognition of fearful emotions. The relationship being significant at $P<0.05$ level, $r=.20$. Recognition of one emotion correlated with recognition of other contradictory emotion expressed in the facial indicating if one could recognize one type of emotion he can also identify the other emotion too.

But at the same time all the four emotions i.e. happy, fearful, anger, sadness are highly correlated to balance of positive and negative emotions. Also when we look at happiness and fearfulness, happiness is correlated to negative emotions and fearfulness, while fearfulness is correlated to happiness. But both happiness and fearfulness are highly correlated to anger and sadness. It was very interesting to see higher the score on judging the accuracy of the intensity of the emotion higher the score on recognition of the emotion correctly. However the intensity had negative correlation with negative affect significant at $P < 0.05$ level. Correlations of judging the intensity with recognizing the emotions correctly was found to be significant at $P < 0.01$ level.

Therefore we can say that our 7th hypothesis as stated above is accepted. Results are shown in table No. 7

Table No.7

Correlation matrix of relationship of emotional sensitivity, positive emotions, negative emotions and recognized emotions of happiness, fearfulness, anger, sadness and intensity

| Variables | Emotional Sensitivity | Positive Emotions | Negative Emotions | Total Recog | Happy | Fearful | Angry | Sad |
|------------------------------|------------------------------|--------------------------|--------------------------|--------------------|--------------|----------------|--------------|--------------|
| Emotional Sensitivity | 1 | | | | | | | |
| Positive Emotions | -0.10 | 1 | | | | | | |
| Negative Emotions | 0.14 | -.19* | 1 | | | | | |
| Total Recognition | 0.08 | -0.04 | -0.16 | 1 | | | | |
| Happy | 0.03 | 0.03 | -.20* | .540** | 1 | | | |
| Fearful | 0.15 | -0.17 | -0.12 | .774** | .18* | 1 | | |
| Angry | 0.04 | 0.04 | -0.06 | .697** | .26** | .35** | 1 | |
| Sad | -0.01 | 0.02 | -0.08 | .764** | .29** | .49** | .32** | 1 |
| Intensity | .018 | .09 | -.18* | .59** | .52** | .38** | .30** | .50** |

*. Correlation is significant at the 0.05 level (2-tailed).

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

CHAPTER 6

DISCUSSION

Emotions are vital for human beings as they seem to play a significant role at every stage of life across the ages. Sometimes individuals are named after the emotions they show too often like happy go lucky, sadly, aggressive and angry gentleman. This happens due to the fact that emotions colours the layers of personality to such an extent the whole behaviour of the individual get affected. Psychodynamics of emotions reveals how felt emotions determines the physical, emotional and social health of the individual. It is not only the cognitions of the person get influenced at the individual level but also the social cognition at the societal level.

What determines the emotion, and why two people differ in showing the emotions is answered by emotional sensitiveness of the individual. How sensitive could be the individual is determined by whether he is emotionally positively toned or negatively toned. Gender of the individual also contributes towards emotional sensitivity. In the present study significant difference was seen between males and females on scale of emotional sensitivity

($P > .01$). Females being highly sensitive as compared to males. Finding of the study are in tune with the studies found in literature (Magaldi 2015). Further analysis on Positive affect and negative affect indicated that males and females affect wise equally toned. The study showed no significant differences on the prevailing emotion of any nature whether positive or negative between males and females.

Females are sensitive to emotional reactions is also confirmed by the findings of the study when males and females were tested on their ability to recognize the emotions in the pictures. Females performed better than their counterparts not only in recognizing the emotion but also in judging the intensity of the emotion. The study also revealed that the person who is sensitive to judge the

emotional intensity is also good in judging the emotion more accurately than the individual who is low on judging the intensity of the emotions.

There was an interesting relationship seen among the emotions. The person who recognized one negative emotion also recognized the other negative emotions, relationship of recognition being significant at ($P < .01$ level). Emotional sensitivity has negative correlation with positive emotion and positive correlation with negative emotion. Though the correlations are low in nature and not significant but it is clear those emotionally sensitive people are the person prone to have negative emotions. The findings confirmed further that positive emotions also show negative correlation with negative emotions. The correlation being significant at $P < 0.05$ level and negative emotion showing again negative correlation with recognition of pictures showing happiness. The correlation being significant at $P < 0.05$ level. Whereas negative emotions like anger, fear and sadness seem to have positive correlation with anger and sadness emotions. The correlation being significant at 0.01 level.

6.1 SIGNIFICANCE OF THE STUDY

This investigation can be extremely helpful for analysts working in psychological settings. It will help to work with patients who are confronting issues as for confidence, relational connections and young-age issues in light of the fact that a great deal should be decoded from the customers' non-verbal conduct, to be particular the outward appearances and non-verbal communication.

This investigation is likewise helpful in the fields where there is a need to deal with inclinations of the overall population, for example, showcasing, media, promotion and site creating on the grounds that it enlightens us concerning whether it is valued or not.

This study can be very useful for psychologists working in clinical settings and counselling settings as well. It will help them to work with patients who are facing troubles with respect to self-esteem, interpersonal relationships and teenage issues because a lot needs to be decoded from the clients' non-verbal behaviour, to be specific the facial expressions and body language.

This study is also useful in the fields where there is a need to work on preferences of the general public such as marketing, media, advertisement and website developing because it tells us about whether it is appreciated or not.

6.2 Limitations

The study can be replicated by using larger sample across the age-groups.

The study could also be conducted in controlled conditions to rule out the bias of group performed studies.

6.3 Future scope

Various variables can be added to explore many dimensions. Such as personality types, different age-groups and across the cultures.

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APPENDIX A

A: DANVA-2

| Item | Emotion | Intensity | Item | Emotion | Intensity |
|------|---------|-----------|------|---------|-----------|
| 1 | Happy | High | 13 | Sad | Low |
| 2 | Fearful | Low | 14 | Sad | Low |
| 3 | Angry | High | 15 | Angry | High |
| 4 | Happy | Low | 16 | Fearful | Low |
| 5 | Angry | Low | 17 | Sad | Low |
| 6 | Sad | High | 18 | Sad | High |
| 7 | Happy | Low | 19 | Fearful | High |
| 8 | Fearful | Low | 20 | Angry | Low |
| 9 | Fearful | High | 21 | Fearful | High |
| 10 | Happy | Low | 22 | Angry | High |
| 11 | Sad | High | 23 | Happy | High |
| 12 | Angry | Low | 24 | Happy | High |

- Angry- 3,5,12,15,20,22
- Happy- 1,4 ,7, 10,23,24
- Fearfulness- 2, 8, 9,16,19,21
- Sadness- 6, 11, 13,14,17,18
- Scoring was done as per the table below. The correct response was =1 and incorrect response =0.

APPENDIX B

Positive Negative Affect Schedule (PANAS)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. Indicate to what extent you feel this way right now, that is, at the present moment OR indicate the extent you have felt this way over the past week (circle the instructions you followed when taking this measure)

| S.No | Emotion | S.No | Emotion |
|------|---------------|------|------------|
| 1 | Interested | 11 | Irritable |
| 2 | Disinterested | 12 | Alert |
| 3 | Excited | 13 | Ashamed |
| 4 | Upset | 14 | Inspired |
| 5 | Strong | 15 | Nervous |
| 6 | Guilty | 16 | Determined |
| 7 | Scared | 17 | Attentive |
| 8 | Hostile | 18 | Jittery |
| 9 | Enthusiastic | 19 | Active |
| 10 | Proud | 20 | Afraid |

Scoring Instructions:

Positive Affect Score: Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19. Scores can range from 10 – 50, with higher scores representing higher levels of positive affect. Mean Scores: Momentary 29.7 (SD 7.9); Weekly 33.3 (SD 7.2)

Negative Affect Score: Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores can range from 10 – 50, with lower scores representing lower levels of negative affect. Mean Score: Momentary 14.8 (SD 5.4); Weekly 17.4 (SD 6.2)

APPENDIX C

Emotional Sensitivity Self-Assessment

1. I'm often told by people who know me well that I'm too sensitive.
1 S D 2 D 3 A 4 S A

2. I often worry about hurting other people's feelings.
1 S D 2 D 3 A 4 S A

3. If I'm asked where I'd like to go to lunch, either I say "I don't know" or I choose where I think the other person wants to go, because I want to make others happy.
1 S D 2 D 3 A 4 S A

4. Making decisions is difficult for me.
1 S D 2 D 3 A 4 S A

5. If something unfair happens, I have a hard time letting it go.
1 S D 2 D 3 A 4 S A

6. Nature is particularly grounding and calming for me.
1 S D 2 D 3 A 4 S A

7. When other people are upset, I get upset too.
1 S D 2 D 3 A 4 S A

8. I try to avoid or hide my emotions.
1 S D 2 D 3 A 4 S A

9. I change to fit in with the people I'm with.
1 S D 2 D 3 A 4 S A

10. If a friend doesn't return my call or text, I assume she's angry with me.
1 S D 2 D 3 A 4 S A

11. I have more intense reactions to bad news than most people do.
1 S D 2 D 3 A 4 S A

12. When I'm emotional, I have difficulty thinking. My brain shuts down.
1 S D 2 D 3 A 4 S A

13. I avoid projects and social activities because I'm afraid of being criticized.
1 S D 2 D 3 A 4 S A

14. I often cancel plans with friend because I don't feel like being with them.
1 S D 2 D 3 A 4 S A

15. I shop too much, drink too much, work too much, eat too much, or sleep too much.

1 S D 2 D 3 A 4 S A

16. I often don't know what emotion I'm feeling or why I'm feeling a certain way.

1 S D 2 D 3 A 4 S A

17. Other people are usually jerks who are out to make life hard for me.

1 S D 2 D 3 A 4 S A

18. I really don't know what other people see in me or why they'd want to be around me.

1 S D 2 D 3 A 4 S A

19. Change scares me.

1 S D 2 D 3 A 4 S A

20. I hate myself and how emotional I am.

1 S D 2 D 3 A 4 S A

Scoring: Add your points for all the questions.

70 – 82 Strongly emotionally sensitive

55 – 69 Emotionally sensitive

45 – 54 Mildly emotionally sensitive

20 – 44 Not emotionally sensitive