

In-group Advantage in Recognition of Facial Emotional Expressions in Cross-Cultural Societies

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DECLARATION

I hereby declare that work entitled, “**In-group Advantage in Recognition of Facial Emotional Expressions in Cross-Cultural Societies**” has been carried out by me under the supervision of Dr. Hariom Sharma, Associate Professor of Psychology, Department of Psychology, Lovely Professional University, Phagwara. No part of this dissertation has formed the basis for the award of any degree or fellowship previously.

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INDEX

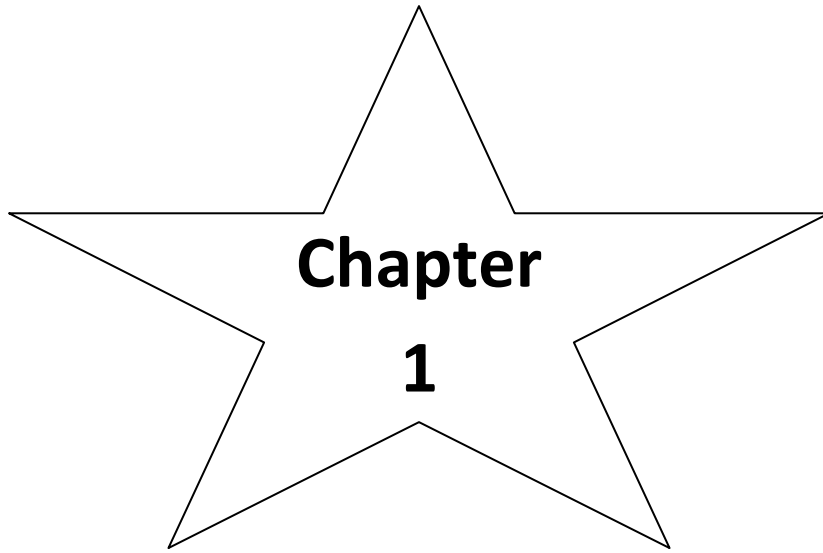
Table of Contents

INTRODUCTION	8
COMPONENTS OF EMOTIONS	9
EXTERNAL SIGNS OF EMOTIONS.....	12
ROLE OF ENDOCRINE GLANDS AND BRAIN IN EMOTIONS	15
THEORIES OF EMOTIONS	17
In-Group and Out-Group	23
In-Group and Out-Group	23
Cross-Cultural.....	24
Cross-cultural	24
REVIEW OF LITERATURE	26
SCOPE OF THE STUDY.....	29
OBJECTIVES:	31
HYPOTHESES	31
Research Methodology	33
Sampling.....	33
Sampling Techniques:	34
Sample Area:	34
Tools.....	34
Statistical Techniques	35
Results and Discussion	37
Conclusions, Limitations and Suggestions	47
Limitations:	48
Implications for future research:	48
References:	50

ABSTRACT

In determination of behavior, the role of feelings and emotions has been noticed significantly. The human travels from one region to another for several reasons, e.g., education, employment, tourism, assignments, etc. The role of emotions and related communication is also increasing as individuals' interactions are increasing across the cross-cultural societies/group. Particularly, facial emotional expressions become more relevant in human communication. The current study investigated the in-group advantage in correct recognition of facial emotional expressions in cross-cultural societies among three cultures' members, i.e., Nigerians, Indians and Chinese (N=180, Nigerians (30- males, 30- females), Indians (30- males, 30- females), Chinese (30- males, 30- females)). Nigerians participants were able to recognize correctly facial emotional expressions 37.4% in comparison to the face of other groups. Indians were also seen having the in-group advantage in recognition of facial emotional expressions 41.0% of their own group, i.e., Indians rather than Nigerian and Chinese. However, Chinese participants were not able to detect the facial emotional expressions of their own culture in higher percentage. This might be due to the facial built up of Chinese and their facial expressions are comparatively less visible on their face. Members of different cultural groups showed significant differences (Chi-Square = 23.33, df =4 p=<.05) among their responses of correct recognition of facial emotional expressions which proved the notion of in-group advantage in facial emotional recognition.

Keywords: In- group, cross-cultural, emotions, facial expression.



**Chapter
1**



Introduction

INTRODUCTION

Emotions are a very intricate psychological process that has been the matter of discussion by psychologists for the last hundred years or more. In psychology the word emotions stand for a state of excitement in an organism. The term 'emotion' has originated from Latin word 'emovere' which means to stirred up agitate or to excite. Thus, an emotion can be referred to as a stirred up state of an organism which initiates and directs behavior.

According to Baron (2004) emotions are reaction dwell of psychological reactions subjective, cognitive states and expressive behavior.

According to Woodworth, emotions are a displaced state of an individual. It is a disturbed muscular activity.

This Implies that-

- Emotions derive due to other stimuli.
- External as well as internal reaction also effects our emotion
- An emotion varies in different individuals. All of these reactions are appraised and we are conscious of them.

Wundt defines emotions as a complex conscious state of process characterized by pleasant, unpleasant, excited, quite and tense feelings and also including a multitude of bodily sensation. There are attempts to arrive at a comprehensive definition of emotions which in themselves are a definition of emotion. **(Kleinginna and Kleinginna, 1981)**

A comprehensive definition of emotions should -

- Say something about the way we feel when we are emotional.
- Mention the physiological bodily basis of emotional feeling.
- Includes the effects of emotions on perception thinking and behavior.
- Point out the driving or motivational properties of certain emotions such as anger and fear.
- Refer to the ways in which emotions are expressed in language, facial expressions and gestures.

COMPONENTS OF EMOTIONS

Various definitions of emotion agree that emotions are complex reactions which involve three major components-

- Physiological changes within our bodies- shifts in heart rate, blood pressure and so on.
- Subjective cognitive states- the personal experiences which we label as emotions.
- Expressive behavior outward signs of the internal reactions.
- Along with these, another component of emotion is the cognitive processes which include perception thinking and memory as they are very involved in emotional experience.

MEASUREMENT OF EMOTIONS/CO-RELATES OF EMOTION, CHANGES DURING EMOTIONAL STATES

The proper identification and measurement of emotions has proved a tough and challenging task. Though, an emotion itself is not analyzed, yet effects of emotions on behavior can be measured some significant cues regarding the measurement of emotion can be provided by the use of the following methods:-

Introspective Reports - It is possible to identify and even quantify emotions according to an individual's own introspective reports. He may be able to label the changes – internal or external – he undergoes as fear, joy, sorrow etc and also describe what he was feeling, thinking or doing at the time of experiencing an emotion.

In search of some better device for the self description of the emotions **Wilhelm Wundt (1832 – 1920)** developed a tri - dimensional mode of introspective approach.

Though the validity of this approach is doubtful, yet it carries unique advantage since emotion is regarded as highly subjective experience i.e. emotional responses are often based on internal processes that can't be objectively studied, the self – reporting introspective reports can play a vital role in identification and measurement of emotions

Physiological correlates of emotions: Emotions affects the whole individual. The individual is distributed and disarranged mentally as well as physically. The activation theory of emotions (**LINDSLEY 1951**) integrates the many observed physiological change in emotions. The term activates means to make active or render capable of reacting. This is what emotion does to us –The angry man over reacts to stimulation strong emotion is thus one end of the continuum activation is found in the sleeping man or even more accurately in death. **Lindsley** theory grew directly from work on electrical activity of brain. But if we take the term activation more generally, it implies energy-mobilization stressed first by **Cannon and Duffy** strong emotion is not especial state .it is merely one end of continuum of activation. There is always some degree of activation in all organisms.

Changes due to emotional changes

BLOOD PRESSURE – Pressure in arteries depend upon complex physiological factors such as the output of blood from the heart and the resistance offered by the arteries to the passage of blood. Blood pressure rises in excitement. The instrument to measure it is called BP apparatus or sphygmomanometer

HEART BEAT - It is the result of the heart's action, the contraction known as the systole and the relaxation known as diastole. One can listen to the heart's sound with an ear against the organisms' chest or with the stethoscope. A cardiometer can count heartbeats on the basis of sound, whereas, an electro cardiogram can record electrical changes in the contracting heart muscle. The arterial pulse can also be measured manually or mechanically by using a sphygmograph. The heartbeat fastens in excitement.

VOLUMETRIC CHANGES – It is the third possible circulatory index of level of activation. In an inactive state, the large abdominal vessels dilate and hold a large volume of blood, but under stress they constrict and inject blood rapidly to the heart which in turn circulates it to the active muscles and brain. The volume recorder can detect the resultant

changes in the organs due to the vasoconstriction and vasodilatation. Such measurement is however not very reliable.

RESPIRATION – The rate and depth of breathing changes with emotions though not in any predictable manner. Sometimes breathing speeds up and sometimes it slow down. There is one constant pattern that can be found in disturbed breathing. This is a ratio of time taken to exhale. The rate of respiration can be measured by pneumograph which measures chest movement.

MUSCULAR TENSION – Muscles are generally arranged in pairs of antagonists, as flexos and extensor. There is an interaction between the two members of the pair, so that one reveals as the other extracts, thus keeping the limb under control without any waste of energy. Muscular tension may be measured through directs measures such as force of gravity excrete on a pencil.

ELECTRICAL SKIN CONDUCTANCE - The most widely use index level of activation is the electrical conductance of the skin, usually the palm of the hand Skin conductance ranges from a low level of sleep to a high level in strongly activated stages like rage and it is sensitive enough to detect the mild interest aroused by a new sound in quite room.

SKIN TEMPERATURE – This can be measured with a therma couple applied to the skin the hand and the face temperature fall during strong emotions, especially anger.

PUPILLARY RESPONSES – Pain and strong motion can cause dilation of the pupil. It is difficult to record and changes are obscured by constant small fluctuations.

SALIVARY SECRETION – It decreases during activation with discharge being thicker producing the ‘dry mouth’ effect.

EYE BLINK – The frequency of spontaneous blinking seems to increase with emotional and other tensions. Continuous photographic recording is required to measure eye blink.

BLOOD CHEMISTRY – A large number of homeostatic mechanisms involve changes in blood and other body fluids. Any one of the changes may serve as a useful index of activation.

BRAIN ACTIVITY SCANNING – The activity level of the brain can be measured by monitoring the blood supply to cortical areas by injecting a radioactive substance into the blood and detecting its flow or detecting the use of positron emission tomography (PET) in various areas of the cortex through positron emission tomography.

Though these various psychological indices of activation can be measured separately, often they are combined in various ways to be measured by a polygraph. A polygraph is simply a portable ink-writing instrument that records breathing fluctuations, blood pressure, and associative reaction time.

EXTERNAL SIGNS OF EMOTIONS

The physiological correlates are reflected in emotions to show external signs such as-

FACIAL EXPRESSION – In order to judge emotions the easiest thing to do so is to observe the facial expression of the individual. It is the easiest to study the emotions of joy, anger, and sorrow from face to face. The face lights up with delight due to muscular expansion, it pulls down in sadness due to muscular contraction.

VOCAL EXPRESSION – The voice is often more expressive than the face, the speaking voice being more expressive than the singing voice because it is free to slide up and down the pitch scale.

POSTURAL EXPRESSION – Higher levels of activation lead to increased muscular tensions of a straight, strict posture. Generally however, body posture changes with

different kinds of emotions. A relaxed posture may be observed in love but a tense stance is seen in anger. Cultural variation occurs besides individual variations.

ROLE OF HANDS IN EMOTIONAL EXPRESSIONS – Emotion attitude can be well expressed by hands. Everyone knows how to express an indignation to fight, to accept, to reject, or to plead for mercy.

Some more definition of emotions

FERNALD and FERNALD (1999) define emotions as, ‘a complex feeling state accompanied by physiological arousal and overt behavior’. This implies that emotions have many aspects, out of which two are very important. Internal physiological states and overt actions.

CHARACTERISTIC OF EMOTIONS

- Emotions and motivation both are correlated both terms come from the same cosmetic which means roots and movers. Dissatisfaction of motives follows negative emotions whereas satisfactions of motives escort positive emotions. In terms of the organize reaction, no distinction can be made internal as well external. Never the less, psychologists do make following conceptual distinctions-
- Motives are almost surviving, whereas emotions momentary.
- Emotions are many and are often in clash with each other and motives act together as single crack.
- Motives generally lead compose behavior, emotions leads to dissolution of behavior.

Emotions are affective, cognitive and co native emotions are related pleasant and unpleasant feelings or effective states. They are cognitive because we are conscious of an emotional experiences depend upon cognitive level attached to it.

If arousal is identified in a sexual situation is stamped as love, if it is identified in a quarrel, it is stamped as anger (**SCHACTER & SINGER, 1971**).

Emotions are always accompanied by overt expressions. They teach an individual to act in a certain way. Therefore, there is also co-native in nature

- Emotions are sudden – Every person is prepared for an emotion. We can't practice or rehearse emotion. Emotions are sudden to provoking internal or external stimuli.
- Emotions persist as a mood – Once an emotion is used, it does not remain the same. There are changes in quality of the emotional experience. An emotion quickly changes into a mood – long lasting effect.
- Emotions vary in intensity – A mother's love for her child is tender and smooth, whereas a lover's love for the beloved is intense and passionate. The intensity of emotion changes even as they are being experienced. The initial excitation gives way to lower level emotional experience.
- Emotions dominate conscious experience and behavior – A terrified person can think of nothing but his fears. He has difficulty in sleeping, eating and can't carry out his normal activities. A lover thinks of nothing but his beloved often neglecting his job, duties and family etc.
- Emotions are aids in emergency – Strong emotions are associated with arousal of the sympathetic nervous system and inhibition of the parasympathetic nervous system. The energy released in this manner helps the individual to come back a stressful situation. Nevertheless extremely high emotions are often detrimental to performance.
- Emotions are expressed in overt behavior emotions cannot be hidden – if person tries to hide his emotion that is facial emotion that can be seen in his body language. E.g. even if happiness is not expressed in words or action it is expressed in a calm body posture
- There are cultural variations in emotional expression – Every culture expresses their emotion differently. Every society has its own way to express their emotions.

- There are cross cultural similarities in emotional expression – People from wide variety of cultures accurately identify facial expression of a range of emotion.

People from different culture also agree on the emotional significance of non verbal features of speech such pitch, loudness etc. (**Ekman, 1973, Frick, 1985**)

- Emotional expressions is innate – This idea came originally from Charles Darwin who felt that many human emotional expressions are remnants of animal expressions of emotions E.g. the sarcastic smile is a remnant of the barking of teeth by cats and dogs. Current researchers support Darwin by emphasizing that, Infants and blind and deaf children show emotional expressions similar to adults.
- Neural processing of emotions – The right hemisphere is especially important for processing emotional information, particularly negatively emotions such as depression and sadness. Moreover, strong positive emotions preclude the processing or experiencing of strong negative emotions. We simply cannot feel very happy and very sad at the same time.
- Emotions appear at all ages – A child is perhaps nothing but a bundle of emotions. As he grows he experiences a differentiation of basic emotions into a variety of emotions.

ROLE OF ENDOCRINE GLANDS AND BRAIN IN EMOTIONS

ENDOCRINE GLANDS – They affect the emotional behavior of an individual by under secretion or over secretion of the respective hormones.

AUTONOMIC NERVOUS SYSTEM – It plays an important part in controlling and regarding our emotional behavior. It has two divisions –

SYMPATHETIC SYSTEM– In any emotional reaction, the sympathetic system is responsible for the general arousal for emergency or flight response. It gears the organism for energy output.

PARASYMPATHETIC SYSTEM – It is the energy conserving system. It takes over as the emotions subsides and returns the organism to its normal state.

Thus, it is active in relaxation response. It accompanies calm, meditative states consisting of bodily activity that is almost opposite to the emergency response sympathetic system.

THE BRAIN – It is actively involved in the perception evaluation of situations that give rise to emotions. Moreover, it also controls the physiological expression of emotion. Besides this, the brain is also involved in directing, the behavior driven by the emotional state and is necessary for the emotional feelings we have: The aroused state that is part of many emotions is due to the increased activation of brain cells in the cerebral cortex, limbic system and hypothalamus.

RETICULAR ACTIVATING SYSTEM – This is activation directly or indirectly influenced by nerve fibers in the core region of the brain – the reticular activating system.

HYPOTHALAMUS – It not only monitors the concentration of hormones in the body but also forms a part of coordinating system for the control of emotional behavior. Studies show that there are some forms of pleasure centre and possibly aversive centre in hypothalamic region of the brain. Similarly, Cerebral, cortex or sheet of neurons covering cerebral hemispheres has been found to give rise to different emotions. Activation of left hemisphere gives rise to positive feelings while negative feelings are centered in the right hemisphere.

THEORIES OF EMOTIONS

THE JAMES–LANGE THEORY- This theory was advanced by American psychologist James and Danish psychologist Carl Lange at approximately the same time 1880. James and Lange proposed that we experience emotions as a result of physiological changes that produce specific sensations.

Perception – Physiological changes – Specific Sensation – Emotion

In turn, these sensations are interpreted by the brain as particular kinds of emotional experiences. This view has come to be called as the James-Lange theory of emotions (Izard, 1990).

The common view is that emotions arise from perception (memory or imagination) of a situation and is experienced in the form of an organic reaction – emotion.

COMMON VIEW: Seeing tiger – Excites fear in mind – Trembling and Running away.

JAMES–LANGE VIEW: Seeing tiger- bodily changes – Interpretation of these changes – Emotions of fear.

Thus, according to them, feeling of fear is the result rather than cause of stirred up state of the body.

- We feel sorry because we cry
- We feel angry because we strike
- We feel afraid because we tremble

And not that we cry, strike or tremble because we are sorry, angry, fearful.

In short, James – Lange theory of emotions proposes that bodily states initiate or determines a person's emotion. Views in support of this theory can be summarized as follows –

Perception – Organic changes – Emotions

The perception of a stimulus evokes an organic response without evoking an emotion. We catch our breath instantly before any articulate idea of danger can arise. There is no emotion intervening between perception and bodily response.

1. If we fancy an emotion and try to extract from it all its bodily symptoms, we find nothing left behind. We cannot think of emotion without organic emotions E.g. We can't think of anger without having of chest expansion of nostrils frowning etc.
2. Suppression of organic expression leads to the suppression of corresponding emotion. E.g. Deep breathing, heart rate normal, fear also comes down.
3. Artificial organic expression produces the corresponding emotion. E.g. actors feel hungry when they express anger or feel sad as they express sorrow.
4. Organic changes due to use of drugs, alcohol and other stimulants and depressants produce emotions.
5. Certain organic disturbances produces certain emotion E.g. nervous diseases produce fear, liver disorders produce gloom , irritability.

Despite strong points to favor this view, yet it was criticized on the basis of the following

1. ORGANIC EXPRESSION DOES NOT CONSTITUTES THE WHOLE EMOTION EXAMPLE – An emotion cannot exist without expressing itself but it is not identical with its expression. There is more to it.
2. EMOTIONS ARE DISTINCT FROM ORGANIC STATES – According to Titchner emotions tend to vanish when they are attended to but organic sensations do not vanish when attended to it.
3. RESPONSE TO STIMULI SHOWS THE VARIATIONS – According to ward response to same stimuli can be different. E.g.- response to a caged bear and a bear at a large would definitely be different.
4. EMOTIONS ARE FELT EVEN WITHOUT VISCERAL AND MOTOR SENSATION – E.g. Sensory nerves of dog carrying information from trunk to brain were cut, yet the dog exhibited anger, fear, joy, disgust.

Canon 1922 criticizes the James- Lange theory on the following grounds –

- a. Roughly similar physiological changes occur in different emotions e.g. fear/rage yet people perceive the two emotions to be different.
- b. If peripheral organs are stimulated through drug- infection, people feel aroused faster, sweating occurs but do not experience emotion.
- c. Viscera are relatively insensitive and hence, incapable of contributing to emotional experience.
- d. If nerves of the peripheral organs are separated from the brain emotions still occur.

However despite such criticism it still holds lot of importance. Theories in favor of peripheral origins of emotions like Waynbaum – a nineteenth century physician and Zajone (1985) propose that different emotions do result from different pattern of physiological activation.

Thus more recently the pendulum of scientific opinion has began to swing in favor of James – Lange theory. Facial feedback hypothesis suggest that changes in our facial expression. Sometimes produce shifts in our emotional experiences rather than merely mirroring them.

THALAMIC THEORY OF EMOTIONS

CANNON – BARD THEORY – In 1920, another theory about the relationship between bodily states and felt emotion was proposed by Walter Cannon who based his approach to emotions on research done by Philip Bard, Cannon (1927) criticized the James – Lange theory of emotions and proposed the thalamic theory of emotions. According to this theory, we first perceive potential emotion producing situations in the external world; then lower brain area, such as the hypothalamus are activated. These lower brain areas then send output into two directions –

1. To the internal bodily organs and the external muscles to produce the bodily expressions of emotions.

2. To the cerebral cortex where the pattern of discharge from the lower brain areas is perceived as the felt emotion.

Thus in contrast to the James – Lange theory, this theory holds that bodily reactions and felt emotion are independent of each others in the sense that bodily reactions are not the basis of felt emotions, Various emotion provoking events induce simultaneously the subjective experiences we label emotions and the physiological reactions that accompany them. The situation stimulates various portions of our nervous system so that both arousal, mediated by autonomic nervous system and subjective feelings, mediated in part by the cerebral cortex are generated.

After perceiving a stimulus, the sensory impulses reach the thalamic hypothalamic regions.

From there they are carried simultaneously to the internal organs of the body and the cerebral cortex.

The cerebral cortex experiences emotion and at the same time, physical changes occurs in the body.

Thus the Cannon- Bard theory maintains that emotions and physiological responses occur simultaneously and not one after another. Thus while James – Lange held that emotional experience is the result of our bodily reactions. Canon – Bard insisted that emotional experience and bodily reactions occur at same time as a result of thalamic and hypothalamic activity. Thus emotional experience depends on processes in the central nervous system rather than peripheral mechanism through the latter may support on supplement it.

Diagrammatically the two theories can be contrasted as follows –

James – Lange: Perception – Motor and Visceral Reaction – Emotional experience

Until the recent decades, most psychologists agreed with Cannon – Band view, which seems to be more consistent with our everyday experience, scientists based their support on the following evidence cited by Cannon and his Co- workers.

1. Surgical destruction of the nerves from the peripheral organs/ sympathetic nervous system did not eliminate emotional reactions.

2. If peripheral organs are stimulated by a drug infection so that the heart beat faster, sweating occurs and so on; people feel aroused but do not experience any strong emotions.
3. If the hypothalamus is removed from animals emotional responses become fragmentary and disintegrated.
4. Electrical stimulation of certain centers in the hypothalamus results in a full fledged rage and attack pattern.
5. Decorticate animals show quick but short emotional responses, which disappear almost as soon as the stimulus withdrawn such responses also lack direction. This shows that the cortex- another CNS organ also plays an important role in emotions.
6. The same physiological activity appears in many, if not all, emotional states even in some non – emotional states. Cannon argued that the some physiological activity underlies such dissimilar experiences as fear, anger and exposure, to heat and cold physical exertion and fever.

Thus physiological activity alone cannot serve as the basis for distinct emotional experiences such as anger, fear, joy or sorrow.

However more recently the pendulum of scientific opinion has begun to swing the other way and certain aspects of the James- Lange theory have gained increasing acceptance. Research with highly sophisticated equipment indicates that different emotions are indeed associated with different pattern of physiological activity. Additional support for the James- Lange theory is provided by the facial feedback hypothesis which suggest that changes in our facial expressions. Sometimes produce shifts in our emotional experience rather than merely mirroring them. At present both theories are accepted to an extent. Subjective emotional experiences do often arise directly in response to specific external stimuli, as the Cannon- Bard view suggests- However they can also be generated by changes in awareness of our own body states, even it appears, by change in our current facial expressions.

The Cannon- Bard theory seems to have been accurate in its rejection view that physiological arousal alone accounts for emotion.

However it has been criticized on the basis that recent research shows that hypothalamus and the limbic system- not thalamus plays a major role in emotional experience. The fundamental assumption of the theory about simultaneously of physiological and emotional responses has point to be conclusively demonstrated.

Thus neither of these two theories are completely satisfactory to explain the relationship between emotional experience and emotional behavior but neither of the two can be discarded because of their importance in the area of research in emotions. Modern physiological views of emotion may be said to start with Cannon. He was the first to develop a broad and integrated physiological picture of emotion.

Some common emotions – Happy, Sad, Anger, Fear, Disgust, Shame, Surprise.

Graham describes all affections as subsist on a continuum of intensity. Emotions are inheriting and result of Darwinism because they provide problem to a solution which was faced by our ancestor. Emotions can be classified from an amount of agnate assemble aural the acreage of melancholia neuroscience. Subjective representations of emotions are known feelings. Diffuse affective state is moods that mostly curtains substantially lengthier. In addition, emotions have positive and negative influence. Graham distinguishes affections as anatomic or abortive and argues all anatomic affections accept advantage. In Scherer's apparatus processing archetypal of emotions only five emotions abide. These components become integrated for shorter duration of time, directed by evaluation technique. Some theorists make the acceptance that emotions and cognitions are different but connected.

Cognitive Appraisal – provides an evaluation of events and objects.

Bodily Symptom – physiological System

Action Tendencies – motivational component

Expression – facial and vocal expression

Feelings – subjective experience

According to **Paul Eckman** there are six types of emotion fear, happy, sad, anger, disgust, and shame. In 1999, he added a number of emotions in his list.

Robert Plutchik (1980) gives the new category system of emotion during 1980's which is known as "wheel of emotions", which tell us how two emotions mixed together.

The term emotional expression implies that the major role of emotional facial action is to manifest our internal states. Reversing this common-sense view the facial feedback hypothesis holds that our subjective experience of emotion comes from an awareness of our facial expression (**Tomkins, 1962, 1963; Gellhorn, 1964; Izard, 1971**).

A facial announcement is one or added motions of the anatomy below the facial skin. As per the controversial theories, these movements tell us about the emotional state of an individual to the bystander. It is a pattern of nonverbal expression. It helps us to convey social information between humans, mammals and some added animal species.

Human beings can imbibe a facial communication either deliberately or hesitantly, and the neurological counter is responsible for controlling the communication differs in each case. Voluntary facial expressions are culturally habituated and involuntary facial expressions are believed to be inborn.

Amygdala is highly involved in the recognition process. The eyes are often viewed as significant characteristic of facial expressions. Also, eye contact is considered an important aspect of interpersonal communication. However, there are cultural differences in recognizing the facial expression.

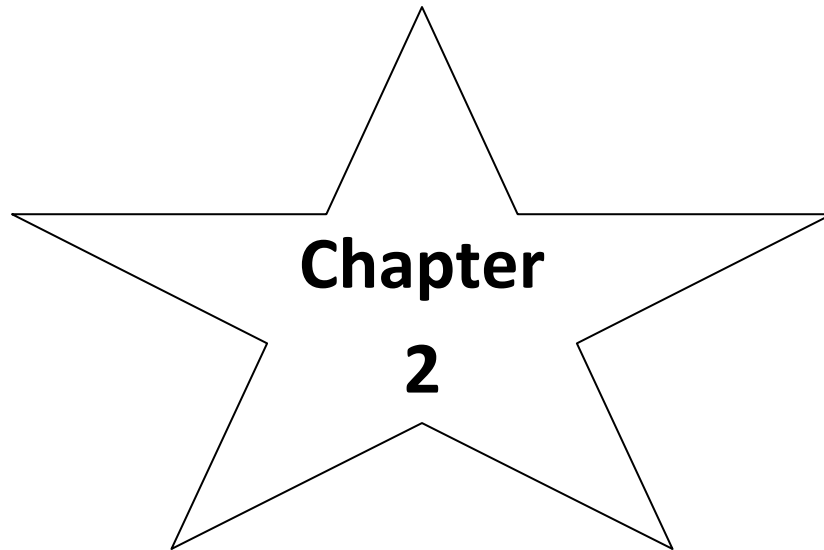
In-Group and Out-Group

In-Group and Out-Group - In Social Sciences in-group is social/cultural group to which a person psychologically identifies as being a member of that group or culture. For example- In a class there may be people from Kashmiri and people from African culture. Now for a Kashmiri individual Kashmiri cultural group is an in-group and African cultural group is an out-group. Thus, an out-group is a social group with which an individual does not identify.

Cross-Cultural

Cross-cultural- Cross-cultural studies are an adjustment of the appellation cross-cultural to call an annex of arcane and cultural studies ambidextrous with added than one culture. Cross cultural call discourses involving cultural interactivity, or to advance (or disparage) assorted forms of cultural interactivity.

Cuban Fernando Ortiz in the 1940s described processes of cultural hybridity in Latin America. The appellation "Cross-Culturalism" became accustomed in cultural studies in the backward 1980s and 1990s. Nevertheless, Cross-Culturalism is a fundamentally aloof term, in that favorable assuming of added cultures or the processes of cultural bond are not capital to the analysis of a plan or biographer as cross-cultural. Cross-culturalism is audible from multiculturalism. Whereas multiculturalism deals with cultural assortment aural an accurate nation or amusing group, cross-culturalism is anxious with barter above the boundaries of the nation or cultural group. Cross-culturalism in arcane and cultural studies is an advantageous explanation for works, writers and artists that do not fit aural an individual cultural tradition. To the admeasurements that cultures are national, the cross-cultural may be advised as overlapping the transnational.



**Chapter
2**



**Review of
Literature**

REVIEW OF LITERATURE

Lim Nangyeon (2016). The study shows the differences in emotional arousal level between the East and the West. There have been many studies conducted to see whether emotions are universal or social. In his study he came with that Westerners experiencing high arousal emotions are valued more than high arousal emotions. Moreover, people in the East actually experience and prefer to experience low arousal emotions. People in the East actually experiencing low arousal emotions are valued more than high arousal emotions.

Guarnera, Maria (2015) The target of this research is to lend to the literature on the ability to diagnose anger, happiness, fear, surprise, sadness, disgust and neutral emotions from facial information. To see whether children show differences in recognizing these expressions from the upper or lower face, and if any differences between specific facial regions depended on the emotion in question. A group of 6-7 year old children was taken. Clients were asked to recognize emotions by using a labeling task with three stimulus types. The decisions seem to reveal that children correctly recognize basic facial expressions when picture represent the whole face, besides a neutral expression, which was identified from the mouth and sadness which was identified from the eyes. Children are also able to recognize anger from the eyes as well as from the whole face. With respect to gender differences there is no female advantage in emotional recognition

Suryawanshi and Rangdala (2015) This study focused on detailed literature survey of the facial expressions and facial expression recognition systems. With growing human-computer interactions, a system for expression recognition would only add the superiority of the relation. Facial expression identifiers with facial muscle tagging to use of linear binary patterns and to state-of-art systems employing advanced machine learning algorithm such as vector machines had been presented in decent details. Moreover, the paper also tried to recollect the applicability of the system to various scenarios, describing its advantages and limitations with core thoughts.

Jiang, Zhongqing (2014) The study shows time pressure inhibits dynamic advantage in the classification of facial expressions of emotion. Here we analyze the differences in the fulfillment of static and dynamic faces under condition of time pressure. A group of 18 participants classified static and dynamic facial expressions (anger, happy, and neutral). At a standstill to increase the goal – directed attention, instructions assert speed and announced time pressure in the interval for the comeback. Participants responded faster and more exactly in the static than in the dynamic condition. The study shows some assets in the processing of static over dynamic facial expressions of emotion when the top- down attention is strengthened.

Wu and Yang (2014) –focused on facial expression recognition from the face detection, feature extraction, classification, and the ethnic expression recognition.

Frith Chris (2009) A recent study, contrasting human and humanoid robot facial expressions, suggests that people can recognize the expressions made by the robot explicitly, but may not show the automatic, implicit response. The emotional expressions presented by faces are not simply reflexive, but also have a communicative component. It seems that we want people to know that we are empathic. Of especial importance among facial expressions are ostensive gestures such as the eyebrow flash, which indicate the intention to communicate. These gestures indicate, first, that the sender is to be trusted and, second, that any following signals are of importance to the receiver.

Anger, Hillary (2004) the study shows that judgment of the left hemisphere of facial expressions shows a greater extent of cultural in – group advantage than judgment of the right hemisphere of facial expressions. The construction of the study held constant various factors other than the facial hemisphere which propose that difference found in the judgment was not the outcome because of the ethnic bias against out – group members, other attributes of judges, such as their relative skill levels and possible use of decoding rules, translation difficulties, ability to speak multiple languages or any

differences across the posers of the emotional expressions. There was no main effect for the accuracy of recognizing right versus left hemifacial composites. The expression using the left hemisphere were not universally more clear or easily recognized but rather they were only relatively more recognizable to members of their own cultural in – group. This study suggests that the left facial hemisphere uses an expressive style that is less universal and more culturally specific than that of the right facial expression.

Jose Angel Soto (2004) the present study tested whether empathic accuracy and physiological linkage during an emotion recognition task are facilitated by a cultural match between rare and target or unaffected. Participants were 161 college students of African American, Chinese American, European American or Mexican American ethnicity. To judge empathic accuracy- to know what other person is feeling – participants used a rating dial to present continuous, real time ratings of the valence and intensity of emotions being experience.

Calder (2003) the study focused on facial expression recognition across the adult life span. Three experiments had been conduct to recognize of emotion from facial expression across the adult life span. As our age increases there is a progressive devaluation in the recognition of fear and to a lesser extent anger. In comparison, older member showed no devaluation in recognition of disgust. The results are discussed in terms of studies from the neuropsychological and functional imaging literature that reveal that different brain regions may control the emotions fear and disgust. Experiment 1 showed that older clients shows excessive problem in recognizing facial expressions of fear. A less marked improvement was also visible for sadness, whereas older clients showed slight progression in recognizing the facial expression of disgust. Experiment 2 shows the fallout of ageing on the recognition of emotion in a larger sample. This

allowed us to address whether the elderly participants reduced recognition of fear reflected a gradual linear decline or sudden onset impairment at a particular age.

Ekman (1971) studied the constants across cultures in the face and emotion. The parameter of the study is whether any facial expressions of emotion are universal. Recent studies showing that members of literate cultures correlate the same emotion concepts with the same facial behaviors could not show that there are some facial expression of emotions which are universal, the cultures comparison had all been open to some of the same mass media demonstration of facial expression, in each culture these as been taught to people to recognize the unique facial expressions of other cultures. To show that participant of a illiterate culture who had marginal exposure to literate cultures would interrelate the same emotion concepts as do members of eastern and western literate cultures, data were gathered in new guinea by telling them a story and showing them three different type of emotional facial expression and asking them to select a face which show appropriate emotion as per the story. This research provides information that the association between particular facial muscular patterns and discrete emotions is universal.

SCOPE OF THE STUDY

As we all know present era is characterized with globalization, privatization and liberalization. Literacy rate all over the world is ever increasing. Developments in almost all fields of science are occurring at appreciable rate. Industrialization and urbanization is on increment. The numbers of multinational organizations are increasing where employees from different cultures are participating to accomplish the works. And that is why it is evident that human travels from one region to another for several reasons, education, employment, tourism, assignments, etc. The role of emotions and related

communication is also increasing as individuals interactions are increasing across the different societies. Particularly, facial emotional expressions become more relevant in human communication.

The present research examined the benefits of in-group advantage in terms of correct recognition of facial emotional expressions by the members of different societies. In present attempt researcher focused on seven types of emotional facial expressions. In addition, the group differences among male and female participants with regard to in-group advantage are explored. Understanding of in-group advantage in identification of facial expression facilitates the human decision-making and behavior not only in day-to-day activities, but in work life also. The quality of interpersonal relationship in personal or professional life is dependent on the accuracy and latency of identification of emotional expressions, especially, the facial expressions.

In the above literature it is observed that researchers have focused on the facial emotional expressions by studying participants' behavior from different regions of the world. However, there is lack of scientific evidence for Indian sample when they are compared with other cultural societies group. More interestingly, within India there are differences of culture from one corner to another that's why this seems to be relevant to study Indian participant's performance on emotional facial expression in terms of in-group advantage. At the same time to develop an insight into in-group advantage it is better to study more cultural groups' responses along with Indian

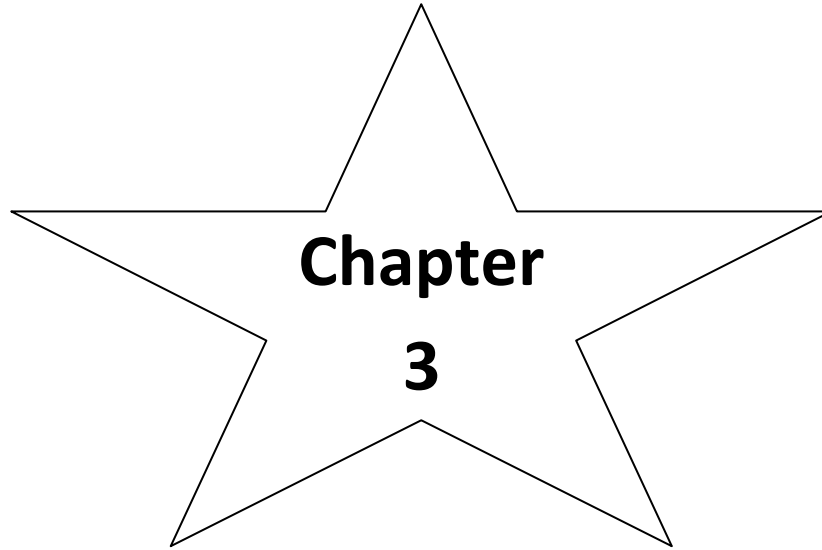
OBJECTIVES

In the light of above literature review following objectives was achieved in the present research:

- To examine the in-group advantage in terms of correct recognition of facial emotional expressions by the members of different cultures, i.e., Indian, Nigerian and Chinese.
- To study the in-group advantage in connection with the time taken in correct recognition of facial emotional expressions by the participants.
- To investigate the group differences among male and female participants with regard to in-group advantage in facial emotional expressions recognition.
- To yield the differences across seven types of emotional expressions with regard to in-group advantage.

HYPOTHESES

- There were no significant differences among the participants of different cultural groups (Indian, Nigerian and Chinese) in terms of in-group advantage in correct recognition of facial emotional expressions.
- There were no significant differences among the participants of different cultural groups in terms in-group advantage in time taken for correct recognition of different facial expressions.
- There were no significant differences among male and female participants groups with regard to in-group advantage in facial emotional expressions recognition.
- There were no differences across seven types of facial emotional expressions with regard to in-group advantage for Indian, Nigerian and Chinese participants.



**Chapter
3**



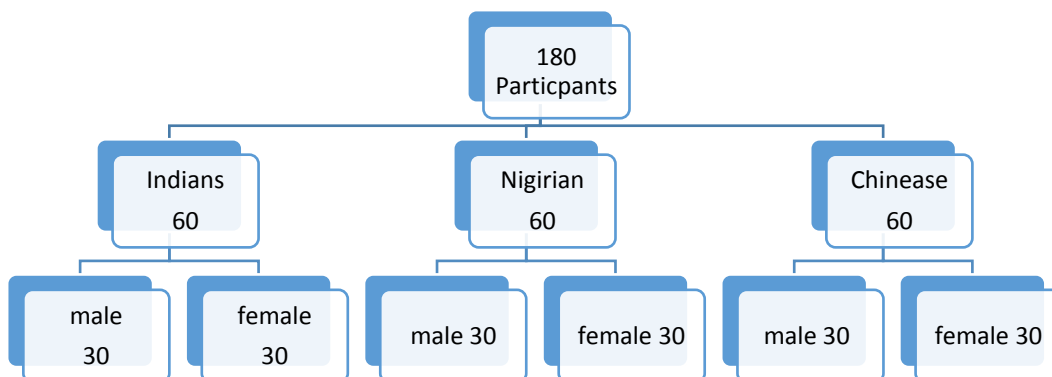
**Research
Methodology**

Research Methodology

This study had been conducted by using explorative method. In the course of the study convenience selection of the sample had been applied. The sample included a group of Nigerian, Indians and Chinese adults of age 20-30years as per the distribution shown in Sampling section. To present the seven types of facial emotional expression of male and female face from Indian, Nigerian and Chinese communities, competent computerized software was developed. The responses in terms of accuracy and time taken to respond were recorded by the software. To control the expectancy responses by the subjects, the face photo were presented in computer generated random order. The Statistical analysis had been computed for the collected data and the results are demonstrated by preparing the graphs.

Sampling

For the present study a sample 180 adults participants from three different societies (Indian, Nigerian and Chinese) in the age range of 20-30 years had been taken. Further, the participants were distributed among male and female groups for every cultural group. The distribution of sample is shown in the figure given below:



Sampling Techniques:

The convenience sampling technique was used for the sample selection from the three cultural groups, i.e., Indian, Nigerian and Chinese.

Sample Area:

The sample was collected from Phagwara and Jalandhar districts. The distribution of sample is:-

1. The participants were selected from colleges, universities and offices and from Lovely Professional University, Punjab.

Type of data

Primary and secondary data are two major types of data. Primary data are fresh and first-hand data collected by the researcher. Secondary data are available from the earlier studies, govt. sources, statistical data sets, and websites. These are already recorded. In the present study, data collected are primary, recorded through computerized software to present the facial expressions of male and female face across the seven types of emotions.

Tools

Keeping in view the aim and nature of the study and variables to be measured appropriate study design was prepared. The seven types of facial emotional expressions had been presented through computerized presentation on display. The software was designed in such a way that every time the sequence of picture had been changed randomly to avoid any expectancy response. With every facial picture seven emotions options were coming to respond by the participant. The correct or incorrect responses of the participants were recorded in each trial. As a second measure, the time taken to respond was recorded by

the software automatically. When subject click on one of the seven options the next picture appeared and same process was repeated for all the seven types of faces from three cultures. In this manner there were 42 trials for one subject.

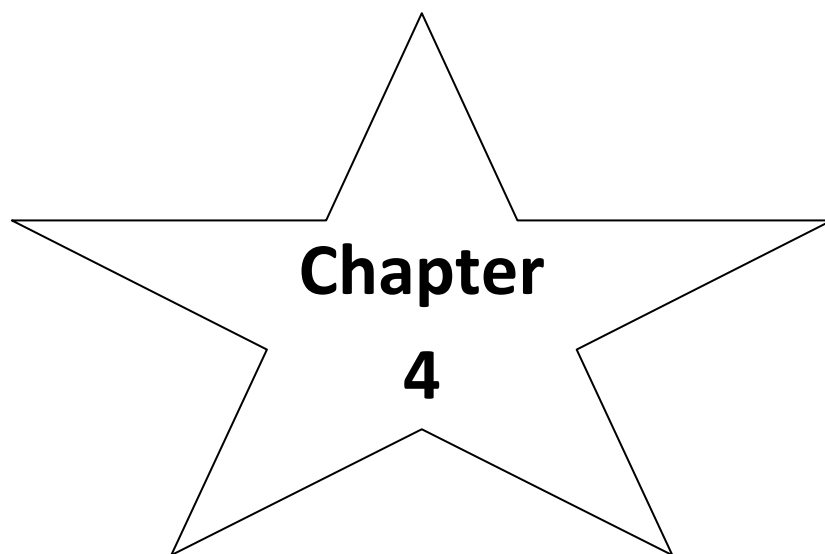
A password control interface was arranged to process the data recorded by the software in which four columns were designed of all the 42 trials. Demographic information was also recorded in the software interface. Thus, accuracy and time taken in recognition of facial emotional expression were taken as measures for in-group advantage analysis.

Statistical Techniques

Following statistical techniques were used in order to analyze the recorded data.

1. Frequency, percentage
2. Mean (central tendency), Analysis of Variance (ANOVA)
3. Chi- square statistics

The statistical analyses reflect the difference among participants from three cultural groups for their patterns of in-group advantage. Also male and female participants with regard to in group advantage were examined. Graphical presentation of the findings facilitated the understanding of results.



**Chapter
4**



**Results and
Discussion**

Results and Discussion

Results and Discussion chapter represents the statistical analysis on obtained data on variables undertaken in the study. The analysis is interpreted in accordance of the objectives of the study. In any research analysis of data is careful and essential step to obtain the trends of findings. Logical interpretation is based on the statistical indexes available after analysis. Distribution of different characteristics of sample and understanding of variables is only possible through results of analysis and relevant discussion by the investigator. The current study analyzed the recorded data with frequency, percentage, mean, SD, and Chi-square statistics to bring out the in-group advantage trends inside the responses of the respondents in different groups. Findings were tabulated and demonstrated by plotting the results in graph as shown in the following section.

Table No.1: Total number of correct and incorrect recognitions of three types of facial emotional expressions by different cultural groups.

	Cultural Groups				
Recognition		Chinese	Nigerian	Indian	Total
Incorrect	Count	1928	1793	1164	4885
	%	39.5%	36.7%	23.8%	100.0%
Correct	Count	660	869	1146	2675
	%	24.7%	32.5%	42.8%	100.0%
Total	Count	2588	2662	2310	7560
	%	34.2%	35.2%	30.6%	100.0%

The above Table shows that total number of emotional facial expression presented were 7560. Each participant was shown 42 different emotional facial expressions by computer generated software in a random order. Out of 7560 trials presented only 2675 emotional

facial expressions were correctly recognized by the participants. Further results were analyzed only for correct recognition of facial emotional expressions to find out the extent of in-group advantage in recognition by the participants of cross-cultural societies.

Objective 1 –To examine the in-group advantage in terms of correct recognition of facial emotional expressions by the members of different cultures, i.e., Indian, Nigerian and Chinese.

Table 2: In-group advantage in terms of correct recognition of facial emotional expression by the members of three cultural groups.

Group	Facial Emotional Expressions			Total
	Chinese	Indian	Nigerian	
Chinese	182	208	270	660
	27.6%	31.5%	40.9%	100.0%
Nigerian	257	287	325	869
	29.6%	33.0%	37.4%	100.0%
Indian	282	470	394	1146
	24.6%	41.0%	34.4%	100.0%
Total	721	965	989	2675
	27.0%	36.1%	37.0%	100.0%

The above Table tells us about in-group advantage in terms of correct recognition by the members of different cultures. It is observed that Indian participants were able to detect correctly more emotional facial expressions of Indian people (41.0%) comparatively to Nigerian (33.0%) and Chinese (31.5%) face. Nigerians were seeing having the in-group advantage as they are able to detect rightly more emotional facial expressions of their

cultural group (37.4%) in comparison to Indians face (33.0%) and Chinese (29.60%) face. However, Chinese participants failed to show any in-group advantage in their correct detection responses in the above Table. All the three cultural groups were noticed showing significant differences (Chi Square = 23.33, df=4 p=<.05) among their response on correct detection of facial expressions. The findings are exhibited in the following figure:

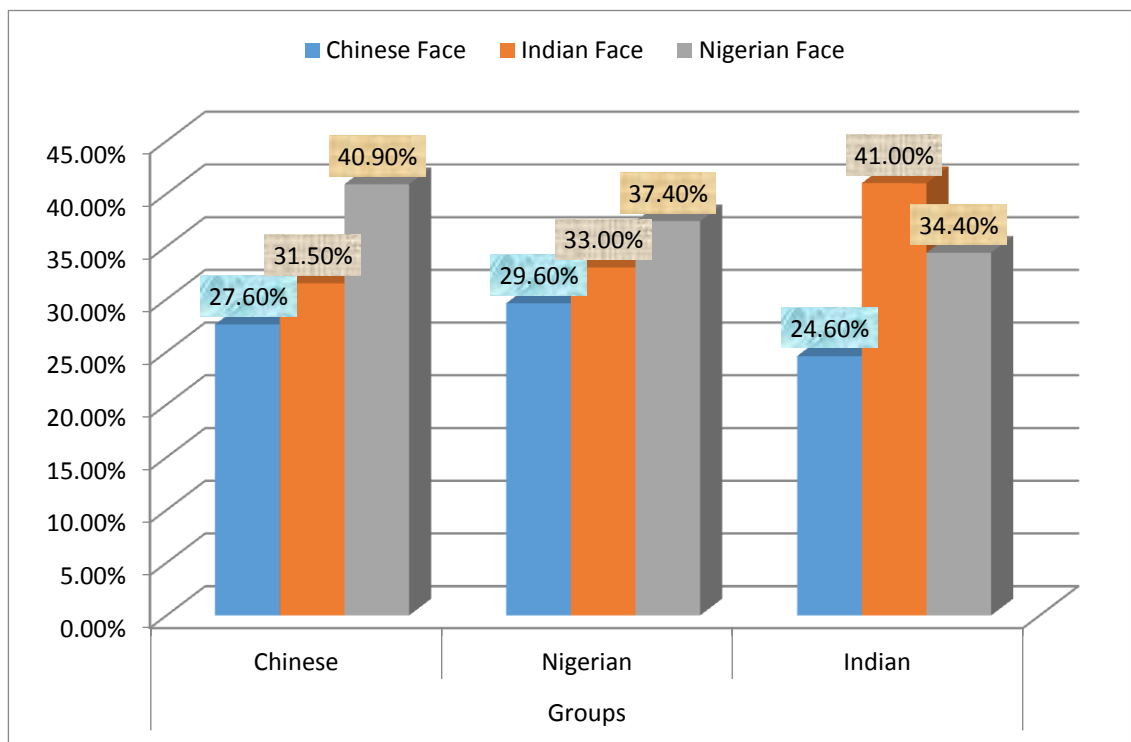


Figure 1: In-group advantage in terms of correct recognition of facial emotional expression by the members of different cultural groups.

Objective-2 To study the in-group advantage in connection with the time taken in correct recognition of facial emotional expressions by the participants

Table 3: In-group advantage in connection with the time taken in correct recognition of facial emotional expression by the participants of three cultures.

Groups	Facial Expressions	N	Mean	SD
Nigerian	Chinese	257	3.19	2.809
	Indian	287	3.75	3.214
	Nigerian	325	3.29	2.804
	Total	869	3.41	2.953
Chinese	Chinese	182	3.10	2.994
	Indian	208	3.34	2.674
	Nigerian	270	3.59	3.989
	Total	660	3.38	3.353
Indian	Chinese	282	5.94	4.885
	Indian	470	4.37	2.426
	Nigerian	394	5.61	4.536
	Total	1146	5.18	3.976

Summary ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Time Taken * Groups	Between Groups	(Combined)	2082.875	2	1041.437	84.123	.000
	Within Groups		33079.359	2672	12.380		
	Total		35162.234	2674			

The above table demonstrate us the in-group advantage in connection with the time taken in correct recognition of facial emotional expression by the participants. It was analyzed that Chinese participants took less time in recognizing their emotional facial expressions (M=3.10, SD=2.994) in comparison to Indians (M=3.34, SD=2.674) and Nigerians (M=3.59, SD=3.989). Also, Indian participants took less time in recognizing Indian emotional facial expressions (M=4.37, SD=2.426) in comparison to the face different from Indian culture. However, Nigerian participants took more time in recognizing the emotional facial expressions of their own group. We can see there is significance difference between time taken and correct recognition of emotional facial expressions in cross cultural society. ($F=84.123$ (2, 2672) $p<.05$). Above findings are demonstrated in the Figure given below:

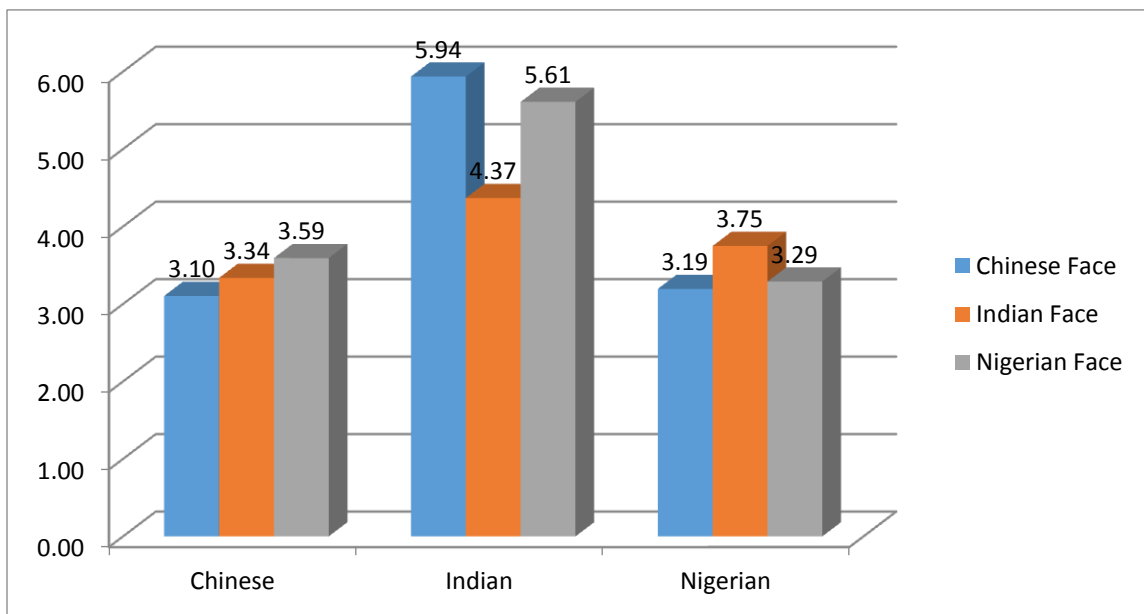


Figure 2: In-group advantage in connection with the time taken in correct recognition of facial emotional expression by the participants of three cultural groups.

Objective-3 To investigate the group differences among male and female participants with regard to in-group advantage in facial emotional expressions recognition

Table-4. Distribution of male and female participants with regard to the facial emotional expressions recognition of the cultures.

Responses * Photo National Code * Gender * Groups Cross tabulation					
Groups		Facial Emotional Expressions			Total
		Chinese Face	Indian Face	Nigerian Face	
Nigerian	Male	122	156	173	451
		27.1%	34.6%	38.4%	100.0%
	Female	135	131	152	418
		32.3%	31.3%	36.4%	100.0%
Chinese	Male	96	98	125	319
		30.1%	30.7%	39.2%	100.0%
	Female	86	110	145	341
		25.2%	32.3%	42.5%	100.0%
Indian	Male	158	250	209	617
		25.6%	40.5%	33.9%	100.0%
	Female	124	220	185	529
		23.4%	41.6%	35.0%	100.0%
		721	965	989	2675
		27.0%	36.1%	37.0%	100.0%

The above Table demonstrates the in-group advantage among male and female participants in recognizing the emotional facial expressions. We are able to see the in-group advantage as males and female of Nigerian group both are able to detect more of Nigerian emotional facial expressions (male=38.4%,female=36.4%) comparatively to Indian faces (male=34.6%, female=31.3%) and Chinese faces (male=27.1%, female=32.3%). Same can be seen on the Indian group they are also able to detect more of Indian emotional facial expressions (male=40.5%, female=41.6%) comparatively

Nigerian (male=33.9%, female=35.0%) and Chinese (male=25.6%, female=23.4%). As Chinese male and female participants as they both are able to detect more right in Nigerian faces (males=39.2%, female=42.5%) and less Chinese faces (male=30.1%, female=25.2%). The findings are exhibited in the figure given below:

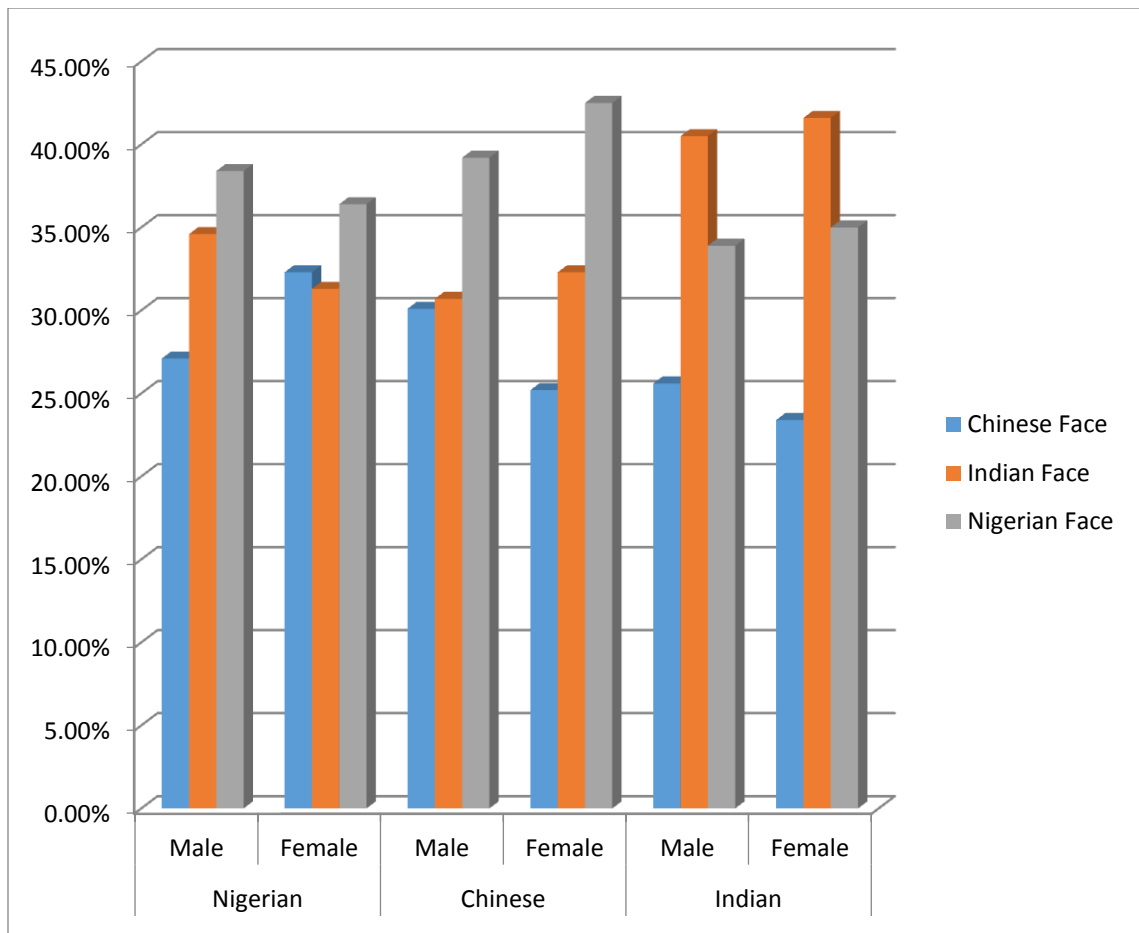


Figure 3: In-group advantage in male and female participants with regard to correct recognition of facial emotional expressions of three cultural groups.

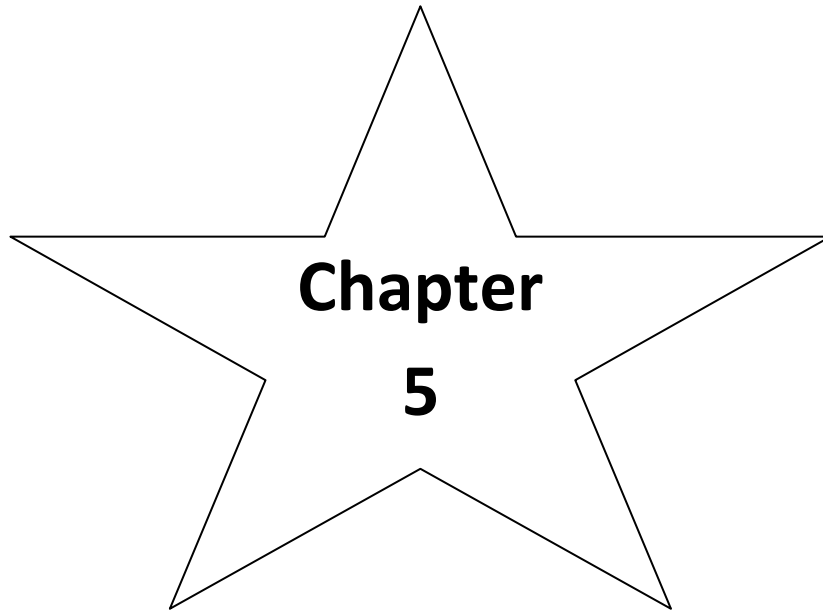
Objective-4 To examine the differences across seven types of emotional expressions with regard to in-group advantage.

Table 5: Correct recognition of facial expressions across seven types of emotions with regard to in-group advantage.

Responses * Emotion Code * Photo Nati Code * Groups Cross tabulation									
Groups		Emotion Code							Total
		Anger	Disgust	Fear	Happy	Sad	Shame	Surprise	
Nigerian	Chinese Face	13	19	14	78	52	48	33	257
		5.1%	7.4%	5.4%	30.4%	20.2%	18.7%	12.8%	100.0%
	Indian Face	40	17	9	88	58	37	38	287
		13.9%	5.9%	3.1%	30.7%	20.2%	12.9%	13.2%	100.0%
	Nigerian Face	36	36	20	86	53	40	54	325
		11.1%	11.1%	6.2%	26.5%	16.3%	12.3%	16.6%	100.0%
Chinese	Chinese Face	12	19	4	53	42	26	26	182
		6.6%	10.4%	2.2%	29.1%	23.1%	14.3%	14.3%	100.0%
	Indian Face	30	16	21	64	32	22	23	208
		14.4%	7.7%	10.1%	30.8%	15.4%	10.6%	11.1%	100.0%
	Nigerian Face	27	32	10	70	49	28	54	270
		10.0%	11.9%	3.7%	25.9%	18.1%	10.4%	20.0%	100.0%
Indian	Chinese Face	8	30	27	78	59	41	39	282
		2.8%	10.6%	9.6%	27.7%	20.9%	14.5%	13.8%	100.0%
	Indian Face	85	39	41	98	77	71	59	470
		18.1%	8.3%	8.7%	20.9%	16.4%	15.1%	12.6%	100.0%
	Nigerian Face	50	51	25	94	56	40	78	394
		12.7%	12.9%	6.3%	23.9%	14.2%	10.2%	19.8%	100.0%
Total		301	259	171	709	478	353	404	2675
		11.3%	9.7%	6.4%	26.5%	17.9%	13.2%	15.1%	100.0%
		Anger	Disgust	Fear	Happy	Sad	Shame	Surprise	

The above Table reflects the highest correct recognition scores percentage for Happy facial expressions (26.5%) followed by Sad (17.9%) and Surprise (15.1%) expressions. However, people from all the three cultural groups could recognize correctly the Disgust (9.7%) and Fear (6.4%) emotional expressions in a limited amount. Whereas Anger (11.3%) and shame (13.2%) facial expression were comparatively in the middle range of correction recognition. In this manner the Happy, Sad, Surprise emotional expressions were correctly recognized in majority in comparison to the Disgust, Fear and Anger correct recognitions.

Furthermore, the in-group advantage in emotional facial expression was observed for Nigerian participants in recognising the expressions of disgust (11.1%), fear (6.2%) and surprise (16.6%) in comparison to other cultural group's facial expressions. Among Indian participants, anger (18.1%), fear (8.7%), happy (20.9%) and shame (15.1%) facial expressions are visible with in-group advantage that Indians were not equally successful to recognize other culture facial expressions. Chinese participants were unable to show in-group advantage in any of the seven emotions. Similar findings were also presented by Calder (2003) that as the age increases there is a progressive devaluation in the recognition of fear and to a lesser extent anger.



**Chapter
5**



Conclusions

Conclusions, Limitations and Suggestions

To raise the important aspects of study and summarize the thoughts as well as to guide the future researches it is essential to summarize the research report with conclusions. The conclusions of current research on in-group advantage in recognition of facial emotional expressions across cross cultural societies. In today's ever changing world when globalization, urbanization and migration of population are more common, cross cultural studies are more relevant. The findings of the current research exhibited the in-group advantage in correct recognition of facial emotional expressions by the individuals of different societies. Desired recognition of facial emotional expressions helps the person in communication and behavior towards others.

Interestingly, Nigerians and Indians were found to detect correct facial emotional expressions of Nigerian and Indian faces respectively with higher percentage rather than faces different from their own culture. The facial expressions on Chinese faces were too poor to recognize correctly even by the Chinese participants. The reason behind the poor facial expression was noticed the flat facial structure. Also the mixture of facial features and movements on the face during expressions were not clear to recognize correctly. The findings are helpful in the development of insight on humans' tendency towards recognizing the facial emotional expressions. Humans have the advantage of more accuracy and less time to identify their own cultural group emotions in comparison to the facial emotions of cultures other than their own group. Therefore, in their personal and professional life they are suggested to judge and regulate their behaviour accordingly. In recent times, there are managers from different cultures and the employees are from other groups, similar in the industries, like aviation, tourism, medical, education, there are relationships among individuals from various cultural groups. Thus, the above findings provide significant insight to improve the behaviour towards better performance.

Limitations:

- The current study was conducted with limited time options and could not explore more on emotional facial expressions.
- Only seven emotional expressions of three cultural communities were analyzed because of availability of these communities.

Implications for future research:

This is well known fact that research is a continuous process. One research solves some current queries but raises many other future queries. More useful future cross cultural research may be taken up in the area of emotions and more particularly, facial expressions.

- Facial expressions with a larger range of emotions can be studied for their correct recognition and behavior accordingly.
- More communities across various cultures in the world can be taken as subject to study the facial expressions.
- The study can be extended at higher levels to cover the larger population on the topic.



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