

**PERFORMANCE RELATED EMOTION FROM A TASK PERSPECTIVE: AN  
APPLICATION OF 'INDIVIDUAL ZONE OF OPTIMAL FUNCTIONING MODEL  
(IZOF) IN KELANTAN FOOTBALL TEAM**

**BY**

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**RESEARCH PROJECT SUBMITTED  
FOR THE DEGREE OF MASTER OF SCIENCE  
(SPORT SCIENCE)  
FOR THE COURSE CODE GST 508**

**UNIVERSITI SAINS MALAYSIA  
MARCH 2006**

## **ACKNOWLEDGEMENTS**

First and foremost, I thank the Lord Almighty for his blessing conferring me health and time to bring this project into reality. My beloved parents and the rest of my family, thank you for your unconditional supports, sacrifices and love. Without all of you standing behind me, I would not have walked this far.

I express my deepest gratitude and appreciation to the Coordinator of Master of Science (Sport Science) program, Professor Rabindarjeet Singh for his encouragement and guidance throughout this project.

My heartfelt gratitude and special thank to my supervisor, Dr. Jolly Roy. Her excellent guidance, moral support, constant encouragement and expertise knowledge has been instrumental in helping me to successfully complete my research. The sincere gratitude to my co-supervisor, Dr. Mohd Jamil Yaakob for his excellent cooperation for helping me in preparing the research grant and research report.

This research was made possible because of the whole-hearted support and cooperation of the Kelantan Football Association (KFA), Hj. Azman Ibrahim (Deputy President of KFA), Mr. Kamaruddin Mohd Noor (State Football Coach) and active participant of all Kelantan State Football athletes. My sincere thank to them for their valuable contribution to this project.

I would like to specially acknowledge Professor Madya Syed Hatim Noor and Dr. Tengku Norbanee Tengku Hamzah for their help and support in using statistical package to complete this research works.

My special thanks to all the lecturers, staffs and laboratory technologist of Sport Science Unit for their continual help and support.

I am grateful to all the staff in Pusat Bahasa dan Terjemahan USM, Research and Development (R&D) department, Pelantar USM, Institut Pengajian Siswazah (IPS) USM, CAI Lab and USM Library for their rendered at the time of research works.

Last but not least, I am thankful to all my mates (Rahman, Foo, Adnan, Hui Yin and Mei Teng) and all the senior and junior colleagues who lent their helping hands and minds. I also thank all others who have helped me directly or indirectly in my endeavours.

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**Performance Related Emotion from a Task Perspective: An Application of Individual Zone of Optimal Functioning Model (IZOF) in Kelantan Football Team.**

**Abstract**

Emotion is one of the important components of total human functioning which can influence the athlete's performance. The Individual Zone of Optimal Functioning (IZOF) model (Hanin, 2000) holds that athlete's performance related emotion are unique and therefore interventions should be individually designed. The aim of the present study was to examine the idiosyncratic nature of emotion content and intensity among athletes and to find out if the emotion intensity for the athlete is significantly different among individuals playing in similar and different positions. Participants consisted of 23 football athletes aged 21-30 years, who represent Kelantan state at the competitive level. Findings lent support that each athlete within a team has individual emotion content and intensity, which are unique and different from one another. The trend of the result showed significant differences ( $p < 0.05$ ) between athletes playing in similar position and executing similar task, implying idiosyncratic nature of emotion intensity. No significant differences ( $p > 0.05$ ) were observed in emotion intensity, among athletes, playing in different

positions. However, an exception in the case of positive-optimal (P+) emotion was noted. The patterns of emotion intensities reflected that the emotion profiles had specific shape, typical for best (iceberg shape) and worst (cavity shape) performance. Roughly designed optimal zones were made for each athlete so as to help the coach and psychologist in emotion regulation, as part of psychological assistance.

**Hubung Kait Prestasi Dengan Emosi Dari Perspektif Tugas: Suatu Aplikasi  
Dari Model 'Individual Zone of Optimal Functioning (IZOF)' dalam Pasukan  
Bola Sepak Kelantan.**

**Abstrak**

Emosi adalah satu komponen yang penting dalam fungsi mutlak seseorang manusia dan ia boleh mempengaruhi prestasi seseorang atlit. Model 'Individual Zone of Optimal Functioning (IZOF)' (Hanin, 2000) menerangkan bahawa hubungkait prestasi atlit dengan emosi adalah unik, justeru setiap intervensi haruslah dijalankan secara individu. Kajian ini bertujuan untuk melihat sifat idiosinkrasi bagi kandungan emosi dan intensiti emosi dan juga untuk melihat jika intensiti emosi bagi setiap atlit adalah berbeza antara individu yang bermain dalam posisi yang sama dan berbeza. Peserta terdiri daripada 23 atlit bola sepak berumur antara 21 hingga 30 tahun, mewakili negeri Kelantan di peringkat kompetitif. Keputusan yang diperolehi menunjukkan bahawa setiap atlit dalam satu pasukan mempunyai kandungan dan intensiti emosi yang tersendiri yang unik dan berbeza antara satu sama lain. Corak keputusan yang diperolehi menunjukkan bahawa terdapat perbezaan bagi intensiti emosi antara atlit yang bermain dalam

pengecualian bagi kes emosi positif-optimal (P+) telah dikenalpasti. Corak bagi intensiti emosi yang ditunjukkan dalam setiap profil emosi mempunyai bentuk yang spesifik untuk prestasi terbaik (bentuk seperti 'iceberg') dan prestasi terburuk (bentuk seperti 'cavity'). Zon optimal bagi setiap atlit dilakarkan untuk digunakan bagi membantu jurulatih dan psikologis dalam pengawalaturan emosi atlit, sebagai bantuan dalam aspek psikologi.

# CHAPTER 1

## INTRODUCTION

### 1.1 Emotions in sport

Emotion is a component which is very important in human life. All the individuals use emotion as a way to express their feelings towards something, since the production of it is influenced by multi components of factors which create variables in emotions. Emotion is a reaction to stimulus event either actual or imagined (Deci, 1980), thus it can activate and direct person's behavior. The production of emotion does not occurs spontaneously because there are at least six component of emotions which are inter correlated with each other; cognitive appraisal, subjective experience, thought and action tendencies, internal body changes, facial expression and response of emotions. These components implicate the episodes or series in producing the emotions which are always based on how the people interpret them to the personal goal or well being (Peter *et. al.*, 1995). What elicits emotion in sports consist of an integrative sequences involving antecedents, affect and consequences. Antecedents deal with psychological process that will elicit emotion. It includes the causal role of cognitive appraisal and the impact of motivation on emotion in sport (Hanin, 2000). This affect on the feelings, emotion and mood are always shown by the changes in facial expression and the action of an athlete. The dynamics in feeling and emotions will lead to intrapersonal and interpersonal consequences which can influence the athlete's performance, relation between the team members and interaction with the subjective environment. Emotion also plays a great role in affecting the performance of

players in the game. Emotion-performance relationships are dynamic and bi-directional. It reflects a continuous effect of emotions on performance and the impact of performance on emotions. In other words, it can be explained that pre-event emotion can affect the performance, where as the ongoing performances can affect the dynamic of mid event and post event emotions. Thus, to predict the entire process performance related emotions relationship, it is important to establish the patterns of emotion impact upon performance and performance impact upon emotions (Hanin, 1989). Emotion can be categorized under positive and negative affect based on the hedonic tone (positive-negative) and functional impact of emotion upon athletic performance (optimal-dysfunctional).

According to Individual Zone of Optimal Functioning (IZOF)-based conceptualization of emotion content, either positive or negative emotion can give both harmful and helpful impact which can influence on how the athlete manages their optimal anxiety level across the task demand. In other words, emotions may have facilitating, debilitating or both effects on performance depending on their meaning and intensities (Hanin & Syrjä, 1995a, Hanin & Syrjä 1995b; Hanin & Pesonen, 1995; Syrjä, *et. al.*, 1995). The four global affect categories of emotion are pleasant and functionally optimal emotion (P+), unpleasant and functionally optimal emotion (P-), pleasant and dysfunctional emotion (P-) and unpleasant and dysfunctional emotion (N-) (Figure 1.1).

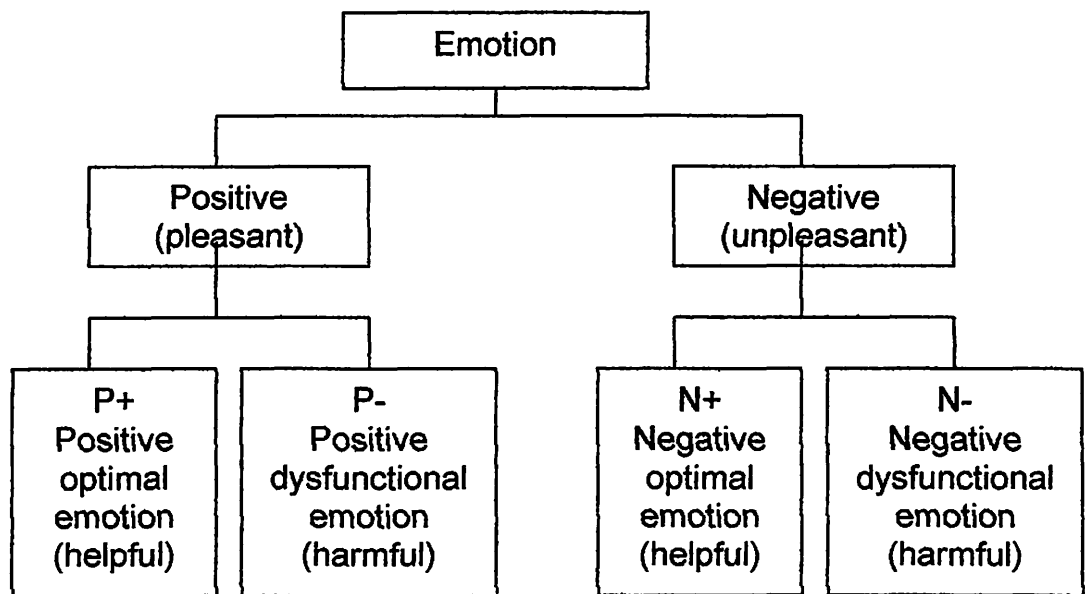
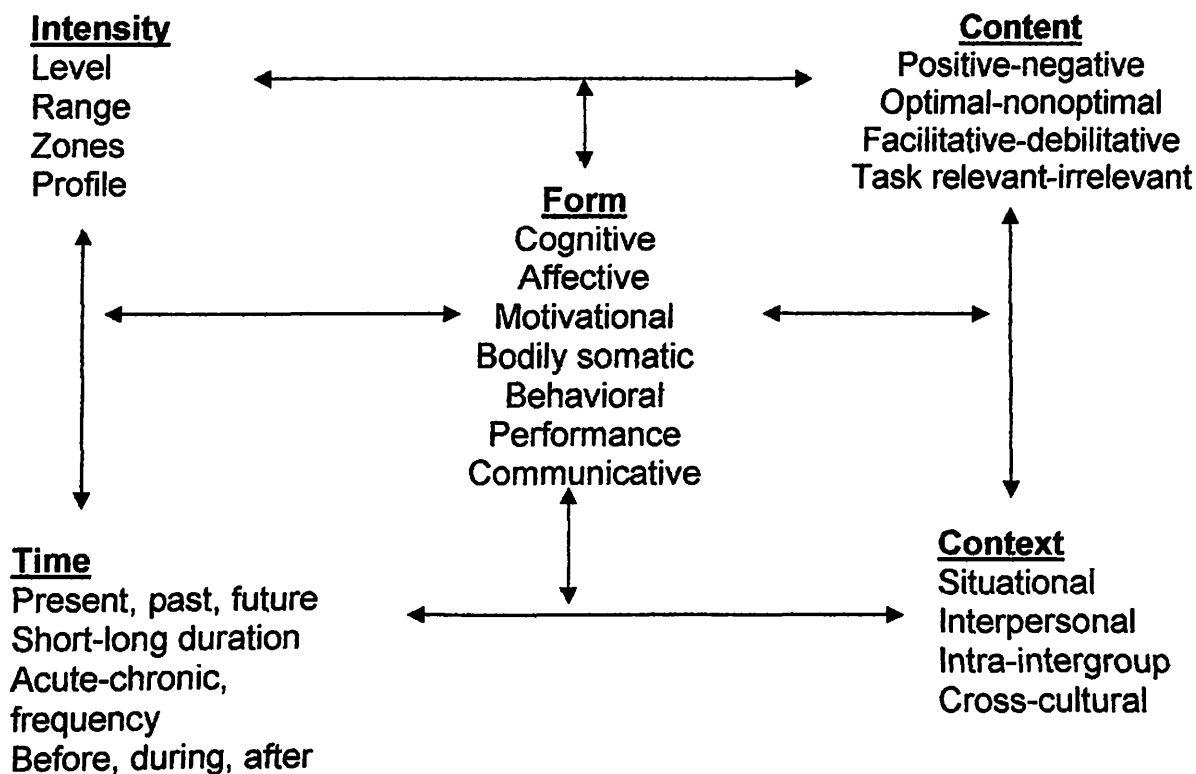


Figure 1.1: IZOF-based conceptualization of emotion content

The IZOF model includes five basic dimensions (form, content, intensity, time and context) which describe performance psychobiosocial state and emotion-performance relationship. There are seven basic form components of total human functioning (Hanin, 1993; Hanin, 1995; Hanin, 1997a; Hanin, 1997b) that provide a complete description of performance state. Cognitive, affective and motivational components represent psychological aspect of a state. Bodily-somatic and behavioral components represent biological or physiological aspect, whereas, performance and communicative reflects a social interactions of a person with the environment. The interactions between all modalities in form dimension provide a framework for describing the factors affecting individual performance (Figure 1.2).



(Hanin, 1993)

Figure 1.2: Performance psychobiosocial states and emotion-performance relationships

The content dimension is a qualitative characteristic of the performance state including conceptualizing the content of emotions. As mentioned previously, the emotion is categorized based on the positivity-negativity (hedonic tone) and facilitative-debilitative effects of sport situation. Thus, it is important to describe the emotion across each category in order to examine the interrelationships with other modalities.



Intensity dimension is a quantitative characteristic of affect of psychobiosocial state. The ratings given by the athletes can be used to determine the optimal zone which reflects the individual psychological resource in each athlete.

The time dimension is a dynamic of emotional experiences based on the time. It can be before, during and after performance of a game task. Within this dimension, the researcher can examine the emotion-performance relationships across different temporal game situation.

Finally, the context dimensions is an environmental characteristic including situational (practices vs. competitions), interpersonal and intragroup antecedents that determine the emotion intensity and content (Hanin, 1997; Hanin, 1989; Hanin, 1992; Iso-Ahola, 1995; McCann, *et. al.*, 1992; Prapavessis & Carron, 1996).

The role of emotion affecting sport performance should not be ignored. The research on emotion related performance is progressing because many have started to realize the important of psychological aspect in developing the athletes.

## **1.2 Basic assumption of IZOF Model**

IZOF model has come out with several basic assumptions regarding the emotion relationship with athlete's performance (Hanin, 2000). The assumptions are:

- 1) Emotions in a person are triggered by their cognitive appraisal and probability in achieving their expected individually relevant goals.

- 2) Performance and emotion patterns gradually develop from the repetitive experiences in the sport activity (The situation such as practice and competition, helps athletes to learn and aware about their emotion and its affect on performances).
- 3) Emotion patterns are specific to the individual, task and setting and it could be expressed in various dimensions of psycho biosocial state such as form, content, intensity, time and context.
- 4) The relationships between emotion and performance are reciprocal. In other words, emotions affect performance and changes in ongoing performance process and intermediate (and final) outcomes produce a shift in emotion content and intensity and thus affect performance. Ongoing appraisals of the performances determine the direction of emotional impact on performances (Apter, 1982; Kerr, 1989; Kerr, 1993; Kerr, 1997; Lazarus, 1991a, Lazarus, 1993).
- 5) Since different emotions can produce optimal or dysfunctional or both effects on performance process (Hanin, 1993, 1997a), a prediction of performance is based on assessment of the interaction effects of these emotions (Gill, 1994; Gould & Tuffey, 1996; Hanin, 1997a; Hanin 1997b; Hardy, 1996; Syrjä, *et. al.*, 1995; Hanin & Tarvonen, 1995).

### **1.3 Theoretical rationale of the study**

In 1908, Yerkes and Dodson described the relation between psychological arousal and performance as an inverted U. According to the Inverted-U-hypothesis, as the arousal increase, the performance will also increase and when the arousal is below

or beyond the optimal level, they are likely to create poor performance. Performance decrements will occur if arousal levels either exceed or fall below the moderate range (Cox, 1994).

Oxendine (1970) proposed that the optimal arousal varies as a function of task characteristics. When there is a difference in the level of specificity between one task with another, the athletes experience arousal based on the task at hand. Thus, each sport has an optimal level of arousal for best performance.

The emphasis of Inverted-U-hypothesis in determining the level of arousal is based on the complexity of the motor task. In other words, athletes performing similar tasks are more likely to exhibit similar emotion intensity (arousal). The emphasis is on the task and the subjective experience of the individual athlete is ignored. Ebbeck and Weiss (1988) suggested that it is not yet possible to prescribe task specific optimal arousal level and that it would be advisable for the coach to identify optimal levels for each athlete. Thus, many alternative models were proposed. One such model is Hanin's (IZOF). The emphasis here is on performance related emotion and idiosyncratic nature of emotion which is individually relevant to the athletes.

If the argument of similar task similar arousal holds, then athletes playing in similar positions and executing similar tasks in a game should have same emotion content and intensity (arousal). Research fails to substantiate this contention. Thus,

Hanin's argument of idiosyncratic nature of emotional experience and consequent emotion intensity attracts researcher's attention.

#### **1.4 Scope of the study**

The study attempt to seek the idiosyncratic nature of performance related emotion of the athletes executing different task in a team sport. The impact of emotional experiences from a task perspective is also being considered as it still has to receive attention from recent researchers (Ebbeck & Weiss, 1988; Raglin, 1992). This study was designed to find out the idiosyncratic emotions in elite athlete of Kelantan state. From the IZOF perspective, each athlete may exhibit individual emotion and intensity which are appropriate for them in order to deliver their best action in the performance. Thus, analysis of individual emotion profile based on the subjective experience will show the idiosyncratic nature of emotion

The results of the study would throw light on the need for individualized approach while dealing with elite state level athlete. The findings would form the basis for research based practices in the applied settings. It would facilitate social psychological determinants of emotional experiences and response patterns in sports activity of Malaysian athletes.

#### **1.5 The game of football**

Football is a well known sport played by people around the world. It was named as football because it is a game played with the foot, as a means of advancing the ball. Football or in American countries known as soccer (to distinguish from

American football) is not an invented game but one that went through a process of evolution (Waters *et. al.*, 1961). The origin of football is difficult to trace. Many know that football originated from England. Historically, there are four countries which recognized themselves from where football originated. The countries are Rome, China, Greece and Japan. China was said as the first country to introduce football. It was believed that the first football match was between Japan and China about 2000 years ago. No standard rule and law were legislated until 1846 when England started to set the football rules for all footballers. The England Football Association was established in the year of 1863, and the football rules were refined which became official rules for all countries (Waters *et. al.*, 1961).

In Malaysia, football was first introduced by the British army in early 1920. In 1926, the first foundation stone for the Football Association of Malaya (FAM) was laid before it was officially founded as a national body in 1933. The seriousness towards the game was noted following the birth of the Malaya Cup competition. This competition elevated football to a higher level in the country with several states forming associations. Football Association of Malaysia (FAM) is a responsible organization to govern all the football clubs and teams in Malaysia. Nowadays, there are many football cups and leagues in Malaysia such as Super League, Premier League, FA Cup, Malaysia Cup and President Cup which involved all football clubs and teams in Malaysia.

Football is a team game. It is played by 11 players in a team. The basic purpose of playing football is to score the ball into the opponent's goal. The team is declared

winner when their goal score is more than opponent's team. Each player can use their foot and other body parts when dealing with the ball, but they are strictly not allowed to use hand except for goalkeeper. The standard time for playing football is 90 minutes, consisting of two half time (each half time is 45 minutes) with 10 to 15 minutes rest in between. The winning team is declared when the game is finished. However, if the result is tie, another 15 minutes is added referred as 'sudden death'. After the sudden death, if the result is still tie, penalty kick is used to determine the winner of the match.

#### **Position in the football:**

There are four basic positions in a football team which are 1) goalkeeper, 2) striker/attacker/forward, 3) defender/back and 4) midfielder. Players within each position have their own roles, skills and techniques which they have to generate when playing football. The basic roles are as follows:

- 1) Goalkeeper: defend the goal.
- 2) Defender: defend the ball from entering penalty area.
- 3) Striker: attack and score the goal.
- 4) Midfield: leads the attack from back to forward area.

The arrangement of the position is made based on the tactic used by the team. The most common position used are 4-4-2, 4-3-2-1, 4-5-1, 3-4-3 and 3-5-2. The positions will always changes according to playing strategies and situation in the match.

## **1.6 Objectives of the study**

- 1) To find out the similarity and dissimilarity of 'emotion content' among the team members.
- 2) To determine if there are differences in 'emotion intensity' of athletes performing similar task.
- 3) To find out if there are differences in 'emotion intensity' among athletes playing in different position executing different task in a team.

## **1.7 Limitations of the study**

- 1) Only the state athletes were considered.
- 2) The researcher had to totally depend upon the athlete's awareness of their subjective experiences.
- 3) The researcher had to rely totally on the recall abilities and perceived ratings of individual athletes.

## **1.8 Operational definitions**

### **Athletes**

Any individual playing football in competitive level is referred to as an athlete.

### **Performance related emotion**

Emotion is a component of psychobiosocial state characterized by individual's subjective emotional experiences.

### **Best performance**

Best performance is the performance where the athlete perceives that he has delivered his best effort to play in the game.

### **Worst performance**

Worst performance is the performance where the athlete perceives that he failed to deliver his effort to play the game.

### **Emotion intensity**

Intensity is a quantitative analysis of emotions related to the perceived effort of performance process.

### **Emotion content**

Emotion content provides information of subjective emotional experiences of the performance state. It is qualitative in nature.

### **Optimal Zone**

Optimal zone explains a range within which an individual's emotional state compliments performance processes.

### **Optimal performance**

A state in which an athlete experiences best internal psychological conditions, resulting in a total involvement for performing the task.



## CHAPTER 2

### LITERATURE REVIEW

Individual Zone of Optimal Functioning (IZOF) Model emphasizes on performance idiosyncratic emotional experiences. The model tries to identify, the emotion content relevant to performance from an athlete's perspective (Fehr & Russell, 1984; Cantor *et al.*, 1982). In IZOF model, the content dimension is qualitative in nature. Emotion content is critical to functionally interpret performance-emotion relationship. Due to the nomothetic approach (group oriented) prevalent in the study of different aspects of sport including emotions, performance-emotion relationships have attracted least attention (Hanin, 1993; Bejek & Hagtvvet, 1996; Hanin, 1992).

Basic to emotion-performance relationships is the form dimensions which are the way a phenomenon is manifested. The form (modality) dimension is well substantiated in the literature on measurement of emotion components (Eysenck, 1975; Krause, 1961) and a conceptualization of a multimodal approach to interventions (Davis & West, 1991; Burton, 1990). The IZOF model includes seven basic component of total human functioning (Hanin, 1993; Hanin, 1995; Hanin, 1997a; Hanin, 1997b) that provide a relatively complete description of a performance state. The analysis of emotion to the performance should correlate between athlete's subjective experiences with other modalities of the psychobiosocial state. Emotions are thought to influence performance through

generation and utilization of psychophysical energy needed to execute the task (Hanin & Syrjä, 1997; Hanin & Syrjä, 1995a)

Emotion content is categorized in terms of facilitative/debilitative effects of emotion in sport situation. Athletes may perceive their positive and negative emotion as helpful or harmful for their performances. Facilitating-positive emotions are expected to help performers in originating energy and organizing functions. On the other hand, facilitating-negative emotions would serve more in energy production than in energy utilization. Inhibiting-positive emotions would determine energy loss or ineffective resource utilization. Finally, inhibiting-negative emotions would be responsible of inadequate energy production and utilization (Hanin, 1997; Hanin, 2000b; Hanin & Syrjä, 1995a; Hanin & Syrjä, 1995b).

A great deal of earlier research reported in the sport psychology literature was mainly concerned with the debilitating consequences of anxiety and other negative emotions (Robazza *et al.*, 2000) specifically, in the development of affect idiographic profiles, both positive and negative emotions are assumed to exert beneficial or detrimental effect on the task, depending on individual. Therefore, in the emotion profiling procedures, the athlete is encouraged to identify positive and negative emotions facilitating or inhibiting performances (Robazza *et al.*, 2000).

Emotion intensity is quantitative characteristics. Earlier assessments were contrasted at group level between athlete and across different samples.

Assessment of emotion intensity of individual emotions in athletes is not very widely investigated (Hardy, 1996; Hardy *et al.*, 1997). Recently, intra individual analysis being an important study approach as nomothetic research designs have often shown no significant finding; intra individual variability may be a contributing factor (Hassmen *et al.*, 2004). Study by Hassmen *et al.*, (2004) among elite golfers had revealed that each individual athletes display variability in their state anxiety and self confident which are dissimilar from one to another. This finding had provided one possible explanation as to why individuals differ in their zones of optimal functioning.

Studies among the volleyball referees had indicate that each participant displayed individual differences in affect pattern reflected in selection of idiosyncratic items with individually specific intensity levels and ranges (Bortoli & Claudio, 2002).

Low, moderate or high optimal and dysfunctional intensity levels vary for similar and dissimilar emotions across athletes (Hanin & Syrjä, 1995a; Hanin & Syrjä, 1995b; Syrjä *et al.*, 1995a; Syrjä *et al.*, 1995b)

.There is an increased awareness of a need for individualized approach considering the intraindividual dynamics of emotions. Ebbeck and Weiss, (1988) suggest that it is not yet possible to prescribe task-specific optimal arousal levels and therefore it would be advisable for the coach to ascertain arousal levels individual to each athlete.

Oxendine suggested classification of sport activity based on specificity of tasks. Accordingly, one can locate the sport task on a continuum of low arousal to high arousal. However, the person and individual relevant subjective experiences of emotions were largely ignored

IZOF model holds that emotion intensity of optimal zone is not always influenced by the sporting task or the skill level. IZOF posits that emotion patterns are specific to individual, task and settings. This idiosyncratic nature of performance related emotions needs to be assessed using individualized procedures (Butler, 1997; Hanin, 1997; Hanin, 2003).

Most studies concentrated on general sports. Hanin and Syrjä investigated 12 elite Finnish cross country skiers during racing, hardwork training and skill training. The result supported the basic assumption of IZOF. The findings showed that the emotion contents differed in their degree of similarity. Similarity for words chosen for competition and hard training was relatively greater than between those for competition and skills training. Emotion content for two types of training showed the least content overlap. Significant difference was reported in emotion intensities for similar positive facilitating and negative debilitating emotions. His study also reported optimal positive emotion for competitions were more intense than those for hard training. Within individual comparison, significant differences in emotion intensity and dysfunctional emotion are reported. In the negative affect, the

intensity of optimal emotions was reported to be significantly lower than dysfunctional emotions.

The findings of this study are on line with previous empirical IZOF research (Hanin, 1994; Hanin & Syrjä, 1995a; Hanin & Syrjä, 1995b; Syrjä *et al.*, 1995a). The trends contradict the hypothesis that the optimal level of arousal exist for an athlete for given activity (Oxendine, 1970). It has been argued that low arousal helps to achieve optimal performance in complex fine motor task such as golf putting while high arousal is beneficial when simple gross motor tasks such as running are performed (Cox, 1990).

According to Hanin (1978, 1986) significant numbers of athletes indicate that high levels of anxiety are optimal for performance, and research with North American athletes has replicated this finding using recall. According to Morgan *et al.*, 1987, 30% of a sample of elite U.S women distance runners reported performing best when anxiety was significantly elevated. The percentage was even greater in a study of college track and field athletes, also using recall (Raglin & Turner, 1993); 51% of men and 48% of women reported best performances with high levels of anxiety.

Previous studies were conducted to show that athletic performance is not characterized by complexity of the task, but personal factor was emphasized. Imlay and his colleagues (1995) had found that most of the subjects were reported

a moderate level of anxiety prior to best and worst performance. They conclude that the result did not support inverted-U as poor performance would be characterized by either low or high level of anxiety. The task type (which contributes to best and poor performance) could not be considered as a factor which determines the anxiety level of the athletes.

In some studies, there were suggested that the unique individual zones of each athlete was derived from the cognitive orientation style and appraisal which influence the predicted and actual levels of competition arousal. A significant difference between the predicted and actual pre competition values was found in the softball athletes who were grouped by cognitive orientation style. However, no significant differences were found when they were grouped based on the task (easy or difficult game) (Wilson & Steinke, 2002). This indicates that athletes function according to personal orientation rather than task specific.

Various studies were done to test the prediction of athlete performance by using IZOF model. Study done in a female elite archer revealed that athlete performed poorly (poor shooting scores) when most of the emotion intensities were near to the recalled poor performance scores (Robazza & Bortoli, 2000). Salminen *et al.*, (1995) also did a study among Finnish athlete where the finding support the hypothesis that athletes within the optimal anxiety ranges, would perform better in the competitions than athletes outside of their optimal zones.

In the light of above reported studies, the goal of this study was to explore the similarity and dissimilarity among players playing in different position, assuming that playing position in football require the athlete to perform specific tasks, within the general nature of the game.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 Introduction**

The study aims to find out the similarity and dissimilarity in the subjective experiences of the emotion content and intensity of athletes playing in similar position and executing similar tasks. The researcher aimed to seek the idiosyncratic nature of emotion, in performance-emotion relationship. The study also intended to profile the emotion intensities of each athlete and develop an individualized optimal zone for future emotion regulation.

#### **3.2 Research design**

This was an exploratory study, which was designed to examine the performance related emotion of the athlete among Kelantan state football athletes. A pre test study was carried out before the actual study. A group of school athletes (n=30) were involved in this pretest study. This was done to ensure the validity and reliability of the emotion stimulus (Malay version) used in the test session.

#### **3.3 Research Instrument**

The psychological assessment in this study was done by using IZOF based emotion profiling forms. The instrument consist of stimulus list which includes positive (pleasant) emotion (P+, P-) and negative (unpleasant) emotion (N+, N-). The positive and negative affect (PNA) scales (Hanin, 1993; Hanin, 1994; Hanin,



1995; Hanin, 1997a; Hanin & Syrjä, 1996) is used to describe interactive effects of positive and negative emotions using athlete generated items. Individual intensities are identified for each emotion labels (content) for functionally optimal and dysfunctional emotions.

Language experts translated the entire stimulus list in the questionnaires to Bahasa Melayu (Malay Language) to enable the subjects to understand the words and then responded accurately. Translation of the emotion stimulus was also done to establish the reliability. The original English version of the emotion stimulus were translated to Malay by people who proficient in English and Malay at the Department of Language and Translation (Unit Bahasa dan Terjemahan), School of Medical Sciences, Universiti Sains Malaysia, Health campus in Kubang Kerian.

The translated version was then distributed to the experts (psychologist/sport scientist/coaches) and some modifications were made to choose the closest meaningful words. This was again given back to the other group of people and they translated the words without looking at the original English version. The final version of the stimulus list was again given to the experts (psychologist/sport scientist/coaches) to determine the content validity and they agreed that the words for emotion stimulus investigated in the Malay version, measures the degree to which the emotion labels is a representative of performance related emotions which the test was originally designed to measure.

The reliability of the IZOF profiling form was determined based on pretest study among 30 subjects (current state athletes) from Sekolah Menengah Putra, Kota Bharu, Kelantan. The athlete's average age was 15 years old. The athletes were chosen on voluntary basis. Before distributing the IZOF profiling form to the 30 athletes, they were briefed regarding the procedures. Once they had responded, the forms were collected.

The result from pre test study was analyzed for reliability by calculating Cronbach alpha coefficient, the value of 0.6 was obtained across four emotion scale P+ (positive optimal emotion), P- (positive dysfunctional emotion), N+ (negative optimal emotion) and N- (negative dysfunctional emotion) in both best and worst recalled performance situation.

The instrument used in this study was IZOF-Based Individualized Emotion-Profiling Forms by Hanin, 2000. The questionnaire consist of stimulus list, intensity scale and response sheet. There are 46 stimulus lists representing positive effects while 50 stimulus list representing negative emotion descriptors in the form. This emotion list was compiled from items from 10 global affect scales described by Watson and Tellegen, (1985). Words such as 'happy', 'confident', 'excited' and 'pleasant' are example of positive emotion while 'afraid', 'lazy', 'worried' and 'disturbed' are some example of negative emotions. In order to develop individualized emotion scales, athletes had selected 4 or 5 positive emotions and 4 or 5 negative items that best describe their emotions related to past successful (good) and poor performance (worst). The reliability of individualized emotion scales had been established in a

study among high-level soccer athletes (Hanin & Syrjä, 1996), mean intraindividually Cronbach alpha ranged from 0.76 to 0.90 for various subscales. This showed that the emotions which were generated from the stimulus list are reliable to assess the emotional scales of the athletes.

The intensity levels for each selected emotion were determined using modified Borg scale (Borg, 1998). The athletes have to indicate a level of intensity as to 'how much they feel that the emotion is helpful (or harmful) for their performances in competition'. Intensity level/range was measured using Borg's Category Ratio (CR-10) scale (Borg, 1982; Borg, 1998), which allows ratio comparisons of intensities as well as determinations of direct intensity level. The participants had to select the intensity from the score 0 (nothing at all), 0.5 (very, very little), 1 (very little), 2 (little), 3 (moderate), 5 (much), 7 (very much), 10 (very, very much) and '●' (maximal possible). (Figure 3.1).

Modified Borg CR10 Scale (CR10 Scale)	
0	nothing at all
0.5	very, very little
1	very little
2	little
3	moderate
4	
5	much
6	
7	very much
8	
9	
10	very, very much
.	maximal possible

Figure 3.1: Modified Borg Category Ratio-10 Scale (CR-10 Scale)

(Borg, 1998)

Response sheet was provided to allow the athletes to write down the emotion contents for each emotion categories (P+, P-, N+, N-) and intensity level. In this response sheet, the subjects had to fill up the identified personally relevant emotions and intensity in their best ever and worst ever competition respectively.