

**PERFORMANCE PROFILING OF SPORTS MENTAL
TOUGHNESS, IMAGERY AND STRATEGY SKILL
AMONG TRACK AND FIELD ATHLETES
AND SOCCER PLAYERS**

**By
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A THESIS



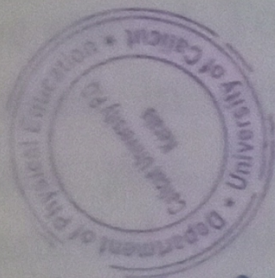
SUBMITTED TO THE UNIVERSITY OF CALICUT THROUGH THE
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DOCTOR OF PHILOSOPHY IN
PHYSICAL EDUCATION

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CERTIFICATE

This is to certify that the thesis entitled "PERFORMANCE PROFILING OF SPORTS MENTAL TOUGHNESS, IMAGERY AND STRATEGY SKILLS AMONG TRACK AND FIELD ATHLETES AND SOCCER PLAYERS" submitted to the University of Calicut, in fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Physical Education is recorded of original research work done by Mr. Saleej KT., during the period of 2014 - 2021 of his study in the Department of Physical Education, University of Calicut, Thenjipalam, under my supervision and guidance and the thesis has not previously formed on the basis for the award of any Degree/Diploma/Associate ship/Fellowship or any other similar title and it represents entirely an independent work on the part of the candidate.



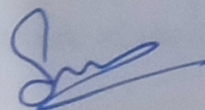
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DECLARATION

I, Mr. Saleej KT., by declare that the thesis entitled “**PERFORMANCE PROFILING OF SPORTS MENTAL TOUGHNESS, IMAGERY AND STRATEGY SKILLS AMONG TRACK AND FIELD ATHLETES AND SOCCER PLAYERS**” submitted to the University of Calicut, in fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Physical Education is recorded of original research work done by me under the supervision and guidance of **Dr. Sakeer Hussain V.P., Director, Department of Physical Education, University of Calicut** and it has not formed before on the basis for the award of any Degree/Diploma/Associate ship/Fellowship or any other similar title.



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Dedication

I dedicate this project to God Almighty my creator, my strong pillar, my source of inspiration, wisdom, knowledge and understanding. He has been the source of my strength throughout this program and on His wings only have I soared. I also dedicate this work to my beloved parents and family members for their whole hearted support and prayers. I also dedicate this work to my athletes and their coaches for their whole hearted support and prayers. I also dedicate this to my wife Ms. Saifuniesa P.K. who has encouraged me all the way and whose encouragement has made sure that I give it all it takes to finish that which I have started. To my child Lena K.T who has been affected in every way possible by this quest. Thank you. My love for you all can never be quantified. God bless you

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It would be an obvious fact of my ignorance if I fail to spread my sincere and heartfelt thanks to my dearest friend`s help, assistance, encouragement and guidance for the thesis would not have been a form of what it is now, no amount of thanks will repay my debts to my friends.

Above all, I thank God Almighty for giving me the strength and wisdom to complete my Dissertation.

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Awards and Honors

1. Secured V Rank in MPEd. Degree examination 2007 (Bangalore University)
2. Secured IV Rank in BPEd. Degree examination 2005 (Bangalore University)
3. Qualified National Eligibility Test with JRF conducted by U.G.C. on 24th December, 2011

Areas of Special Interest

Research & Teaching in Physical Education, Sports Psychology

Additional Qualification

Certificate course of Yoga from Kannur University

Working and Teaching Experience:

Worked as an assistant professor in Physical Education in MES Kalladi College Mannarkkad from July 1st 2019 to March 31st 2020

- Calicut university wrestling team manager for all India inter university tournaments
- Preparation of players for participating state level to international level
- Sub convener of Zonal and Inter Zonal Tournaments Under Calicut University
- Selection Committee Member of Calicut University Basketball
- Criterion member of NAAC Visit

Full Time Research Scholar, Department of Physical Education 2014-2019

As a Full Time Research scholar attached with Department of Physical Education handled different subjects for the different course in Center for Physical Education, University of Calicut from academic year 2014-15 to 2017-18

Subject Handled

- Educational Technology and methods of Teaching
- Research and statistics in Physical education
- Teaching Methods in Physical Education
- Olympic Movement
- Management of Physical Education and Sports
- Sports Psychology and sociology

Working as an Assistant Professor in Physical Education in MES College of Engineering Kuttippuram from June 1st 2012 to March 31st 2014

- Sub convener of Zonal and Inter Zonal Tournaments under Calicut University
- Selection Committee Member of Calicut University Basketball
- Acted as a Discipline Committee Member of College Technical Fest

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1. Authored a book chapter Titled '*Performance Profiling in Sports Psychology*' In the book of '*Research Trends in Physical education and Yoga*' Volume- 3 Edited by Dr.Deba Prasad Sahu with ISBN: paperback 978-93-5335-358-2,E-Book ISBN: 978-93-5335-359-9 By AkiNik Publication 2019

Review board member

1. Review board member of *Journal of Emerging Technologies and Innovative Research from 2019 onwards*

FM Radio interview

1. Attended a radio interview programme related on '*Sports Psychology and Performance profiling*' at *Manjeri FM Yuvavani Programme* on Saturday, JULY 04, 2020, 8:26:34 AM

Journal Publication

1. Published a paper in Journal of Emerging Technologies and Innovative Research Published In JETIR (www.JETIR.org) ISSN UGC Approved (Journal No: 63975) & 5.87 Impact Factor Entitled '*Study on mental toughness and Imagery among soccer player*' Volume No 6 Issue 6 (ISSN-2349-5162)Pages 958-963 June 2019
2. Published a paper in '*Shanlax International Journal of Arts ,Science and Humanities*' A peer-refereed Scholarly quarterly Journal globally indexed with impact factor of 3.025' Entitled '*A study on mental Toughness and Imagery among south Indian Santosh trophy Football Players*' Volume No 8 Special Issue 2 ISSN:2321-788X Pages 1-5 February 2019
3. Published a paper in '*International Journal of Physical education, sports and Health*' A peer-Reviewed Journal, referred Journal and indexed with impact factor of 5.38' Entitled '*Analysis of B.P.Ed curriculum in the Universities of Southern India*' Volume No 6 Issue 1 ISSN online: 2394-1693 Print ISSN 2394-1685 Pages 140-142 2019
4. Published a paper in '*International Journal of Physiology, Nutrition and Physical Education A peer-Reviewed Journal*, referred Journal and indexed with impact factor of 5.43' Entitled '*Psychological Performance Profiling among rural area Cricket Players*' Volume No 3 Issue 2 ISSN : 2456-0057 Pages 792-793 July 2019
5. Published a paper in '*International Journal of Physical Education Fitness Sports* Entitled '*Study on Programmes Facilities and Achievement in USHA School of Athletics*' Volume 4 Issue 2 ISSN online: 2277:5447 Pages 38-45 June 2015

Thesis Experience

1. Submitted a thesis for M.Phil, '*Analysis of BPED curriculum in the universities of southern India*' to School of Physical Education and Sports Sciences, Kannur University.
2. Submitted a thesis for M.P.Ed, '*programmes, facilities and achievement of Usha School of Athletics*' to University College of Physical Education, Bangalore University, 2007.

National level organization

1. Act as a organizing committee member of '*All India Inter University Netball (Men) Championship*' held at University of Calicut from 6/3/2020 to 9/03/2020
2. Act as a Medical Committee Convener in the '*All India Inter University Softball (Women) Championship*' held at University of Calicut from 2/03/2019 to 6/03/2019
3. Act as a Medical Committee Convener in the '*All India Inter University Weight Lifting (Men) Championship*' held at PT Usha Indoor Stadium, University of Calicut.17/09/2108 to 20/09/2018
4. Act as a Medical Committee Convener in the '*South India and All India Inter University Football (Men) Championship 2016-17*' held at CH Muhammed Koya Stadium, University of Calicut from *21/12/2017 December to 05/01/2018 January*
5. Act as a Sub Convener in the '*South India Inter University Volleyball (Women) Championship 2016-17*' held at PT Usha Indoor stadium, University of Calicut from *24th to 28th December2016*
6. Act as a Sub Convener in the '*South India Inter University Basketball (Women) Championship 2016-17*' held at PT Usha indoor stadium, University of Calicut from *10th to 14th December2016*
7. Act as a Convener of accommodation committee in '*Al Abeer Educuity 13th National Youth Athletic Championship*' held at CH Muhammed koya stadium organized by Malappuram district athletic association from *26th to 28th May 2016*
8. Act as a Venue assistant Manager(Pool D) in the '*South India Inter University Football(Men) Championship 2016-17*' held at PT Usha Indoor stadium, University of Calicut from *13th to 22nd December2014*

International conference

1. Presented a paper entitled '*Performance profiling of soccer players with special references to strikers*' in the international conference on '*A Glimpse into the Future of Sports and Allied Sciences Sectors*' Jointly organized by the department of physical education, MES College Marampally, Aluva, Ernakulam and CHMKM Govt. Arts and Science College Tanur, Kerala in Collaboration with *Langford College, Ireland and FA Innovations, United Kingdom from 27 to 29 October 2020*
2. Presented a paper entitled '*A study on Mental Toughness and Imagery among South Indian Santosh Trophy football players*' in three-day Multidisciplinary World Summit on '*Recourse Management and Sustainable Development*' Jointly organized by University of Mysore, UG and PG department of Studies in Economics. Maharani Arts College for Women, James Cook University Singapore and International Council for Development research *Mysore on 22nd to 24th February 2019* at Senate Bhavan, Mysore University.

National seminar

1. Participated in the three day national seminar on '*Rethinking Pedagogy & Curriculum in Psychology*' organized by Department of Psychology ,University of Calicut on *11th to 13th February 2019*.

International workshop

2. Participated as a student Delegate in the one day international workshop organized by Kerala Economic association and the Department of Economics, St.Xavier College for women Aluva on the topic '*Academic writing in the digital environment :A New Perspective*' on *1st August 2016*.

National workshop

1. Participated in the National Workshop on '*How to Carry out Scientific Research in Social sciences*' Organized by the Department Research Forum, Department of Commerce and management Studies, School of Business studies, University of Calicut on *1st to 2nd November 2017*
2. Participated in the Three day National Workshop on '*How to Avoid Plagiarism*' Organised by the Department of Library and Information Science University of Calicut During *23rd to 25th March 2017*

3. Participated in the One day National Workshop on '**Anti-Doping Awareness**' Organised by the Department of Physical Education University of Calicut on **23rd March 2016**

Membership

1. Life member of '**National Association of Physical education and sports science**' (NAPESS) Affiliated to '**International Council of Sports sciences & Physical Education**'(ICSSPE)

Short term course

1. Participated in the '**Six Days Short Term Course on research methodology in Social Science for PhD Scholars**' conducted by the UGC-Human resource development Center from 09/01/2017 to 14/01/2017 and successfully completed the course sponsored by University Grants Commission.
2. Participated in '**Hands on Training on statistical data analysis for Researchers and Students**' organized by Tropical Institute of Ecological sciences affiliated to Mahatma Gandhi University Kottayam during **18th to 20th May 2017**

Online course

1. Completed and awarded **Silver Medal** the Three Month **Certificate Course on Research Methodology (CCRM)** with the topic of '**A Study on Selected Psychological Performance Profiling among Calicut University players**' in the student category conducted from July 2017 to September 2017 by the Alexis Foundation through online Mode

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Chapter I

INTRODUCTION

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INTRODUCTION

The human potentials which determine the achievement of any field through the total participation in the various activities and with full determination and confidence. The target is the sign of development which motivates individuals to achieve in their attempt. Every nation demands fit citizens like physically, mentally and socially etc. The purpose of proper body functions of physical activity plays a major role in everyone on a regular basis. Within the medium of physical activities human development improves through participation both qualitative and quantitative.

Modern world is the universe of competition, which is significant in mental abilities for success. The support in current games is impacted by different physical, physiological, sociological and mental factors. So, presently the games mentors and mentors have begun giving more significance to the mental molding or building the psychological makeup of the players before their contacts in the national and global competition.

Sports

Sports have in this manner encountered a huge consideration subjectively just as quantitatively with positive and negative results. Psychology is a conduct science, which has made its commitment for improving games performance. This mental part of sports is increasing a lot of consideration among sports administrators. The sort and power of pressure they create in sports people is fundamentally not the same as game to wear for example, the manner in which people contending in singular games experience uneasiness is distinctive subjectively and quantitatively from the nervousness facing group game players.

The basic parts of each sport involve four major segments, to be specific: the specialized, strategic, and physiological and psychological. Briefly, the specialized

segments speak to the genuine aptitude important to play a given game. Models remember spilling for soccer, shooting in basketball, passing in football, etc. The strategic perspective alludes to the systems and ideas utilized to exhibit those strategies in rivalry. Physical skills have consistently been the significant focal point of preparation in the activity and sports world, yet more as of late, research has turned its eye to psychology as a device that may encourage the capacity to conquer physical impediments and help performance. Coaches and others both inside and outside of the activity field have regularly recognized the significance of the psychological control of symbolism or representation as a main consideration in improving execution, regardless of whether it is in game and exercise, business or physical recovery.

Athletes ranging from the high school to professional levels are faced with many pressures and temptations, commonly outside the realm of their sport. These pressures can inhibit an athlete's performance substantially; therefore, the pressures need to be dealt with by psychologists. Sports psychology is demonstrated through the fields many theories, applications, and a variety of techniques and procedures.

The modern competitive sports mental readiness of a competitor or a group is as significant as the method of various aptitudes of the game on explicit lines. The competitor and groups are readied not exclusively to play the game, yet to win it. What's more, for dominating the game it isn't just the capability in the aptitudes which bring triumph however progressively significant is the readiness, the soul and the mentality of the competitors with which they play and play out the best in the opposition. Also, to be serious to get to the top, sportsperson and groups need to experience long stretches of difficult preparation in abilities, methods, strategies and methodologies of the games and execution. Nervousness influences mental and physiological working of the living being from numerous points of view. Performance execution in sports is not just requests efficiently preparing to create physical, mental and specialized parts of sports but in addition to requests preparing and thinking of mental qualities for accomplishment in this field.

Modern sports and competition nearly has the applying of psychological principles and mental training. Most of the athletic performance is based on stress management. The improvement of training perspectives is the alternative aspect of sports whether the mind and emotions and physical performance. Psychology is useful within physical activity as it can be used to promote and influence one's perspective on the benefits of health and used within the education system to help encourage all students, despite their physical ability, to participate in a healthy and active lifestyle.

Sports psychology

Sport psychology involves the study of the psychological factors related to participation and performance in sport. Introduction to Sport psychology provides a basic understanding of how the varied aspects of psychology are often applied to sports participation and a bigger understanding of the psychological processes of individual athletes and team dynamics to reinforce sporting performance assessment of personality types will be discussed relating to sports participation. This will be expanded to discuss motivation and leadership contribution to sports participation also because of the relationship between anxiety and arousal with regard to enhancing sporting performance. Psychological skills training will then be demonstrated, including goal setting, team dynamics, imagery, positive self-in-relation to achieving peak sporting performance. The importance of exercise and sport psychology in increasing human potential is seen by observing however it affects high-performance athletes, sports consultants, visual image and the imagery in this discipline. **(Cherry & Mattiuzzi, 2010)**

The specific field of sports psychology has grown quickly and the significance of a games analyst as a vital individual from the training and social insurance groups are broadly recognized. Sports psychologists can instruct aptitudes to assist competitors with improving their learning procedure and engine abilities, adapt to serious weights, adjust the degree of mindfulness required for ideal execution, and remain centered in the midst of the numerous interruptions of group travel and in the serious condition. Mental preparation ought to be a necessary piece

of a competitor's comprehensive preparation process, related to other preparing components. This is best cultivated by a synergistic exertion among the mentor, the game clinician, and the competitor; notwithstanding, a proficient and intrigued mentor can learn fundamental mental aptitudes and give them to the competitor, particularly during real practice.

Sport psychology creates and ensures the attitudinal inspiration and mental spirits among players. The vast majority of the mentors concur that the physical trademark, abilities and preparation of the players are critical however they additionally demonstrate great mental groundwork for rivalry, which is a vital part of achievement. Modern competitive sports of today demand more emphasis on the training of psychological aspects of sports. Present day serious games today request more accentuation on the preparation of mental parts of sports. The elevated level presentation seen in serious games is only an ideal agreeable connection between one's mental readiness and specialized arrangement. Mental factors like toughness, imagery and strategies so forth assume a significant job for better execution in all games.

Comprehension of sports psychology is imperative to accomplish ideal execution and has loads of advantages, for example, it assists with surveying the fit among people and sports and even situations in a group, enables competitors and mentors to esteem their qualities and become increasingly mindful of those territories in which advancement might be justified, enables mentors and competitors in a stressed relationship, to break down the wellspring of the contention and fabricate a methodology to decrease it. It can prompt persuaded and submitted conduct, valuable for the competitor and sports proficient in profession and life arranging.

Sports psychology targets enhancing athletic performance. Coaches and competitors from a wide assortment of sports have started to understand the significance of the psychological side of athletic performance. One mental express that is firmly connected to ideal execution in sport is flow. It has been characterized as the state where individuals are so engaged with an action that nothing else

appears to matter. Experience is exceptionally identified with extraordinary game exhibitions and discovered proof for this in interviews about top exhibitions with global first class level competitors.

Mental preparation for sport is a basic part of fruitful games execution at all levels. The higher the degree of rivalry, the more prominent the mental requests on the performers. Indeed many game analysts would contend that mental preparation for sports execution is the most significant piece of sports performance. Elite sports entertainers utilize mental methods previously, during and after games execution, both deliberately and unconsciously. To adequately recommend methodologies to improve the entertainer's mental outlook an inside and out comprehension of the hypotheses and models supporting mental techniques is essential. Psychological preparation for sport is reliant on a wide scope of variables, which contrast for every individual and group games performer. Therefore, understanding the basic mental standards and models will empower procedures to be adjusted for a wide scope of explicit circumstances.

Most of the psychologists play different roles in the lives of their athletes trained professional psychologist, friend, and sounding board, confidante and advisor are each possible and the relationship that may develop in practice A sports psychologist can facilitate an athlete focus additional on the aspects of the game that are under their management. As there are continuously some uncontrollable things in sports, performance is left up to chance to some extent. To help an athlete get the chance aspect out of their mind some sports teams and athletes have chosen to hire a sports psychologist.

Performance profiling

Behind an athlete or team could be a management team, with their athletes carefully planned towards their success. Sporting excellence needs to understand the planning methods. Performance profiling is widely used by coaches and trainers to enhance the performance level. Performance profiling is when a coach or sports psychologist analyzes the athlete's performances and identifies the strength and

weakness benefits of the performance profiling an athlete can easily identify the strength and weakness that lead the athlete's improvement. Involving the athlete in the creation of the performance profile increases intrinsic motivation. On top of having more motivation, the athlete-coach relationship can be enhanced. **(Richards, 2008).**

Performance profiling is when a coach or sports psychologist analyzes the performance of the athlete so that they can identify the strengths and weaknesses. The systematic method to enhance the performance profiling is helpful to athletes by rating the qualities of individual skills. In the case of performance profiling athletes rate their present feeling about their own performance in relation to their ideals.

The systematic enhancement of understanding the performance profiling offers how the athletes rate the qualities for achieving the optimum level of performance. Generally, the performance profile is completed by the player about themselves. It is possible for the coach to complete one on the player as well so a comparison can occur. **(Butler et.al, 1993)**

The benefits of performance profiling are the fact that the athlete and coach can clearly identify the strengths and weaknesses of the athlete's performance. This is a benefit as it allows the athlete to work with their coach on improving the weakness. For example, if a Center midfielder in football was weak on his ability to see passes and players runs, then his coach could look at the Performance profiling and work with the footballer on this specific skill. Another benefit of Performance Profiling is that it increases motivation in an athlete. Performance profiling does this as the athlete can clearly identify their weaknesses, this means that they can easily work toward improving the weakness and turning into a strength. Because the athlete's weakness is his vision, he will be motivated to improve. A final benefit of Performance Profiling is highlighting any differences between the coach and the athlete's perception of the athlete's performance. This is a benefit because if both the athlete and the coach do a Performance profiling they may come up with some differences.

Performance profiling provides the athletes and coaches with objective information that helps them understand performance. This process is underpinned by systematic observation, which provides valid, reliable and detailed information relating to performance. Performance analysis will facilitate enhancing the coaching method by providing statistical and video data. This objective data facilitates increased feedback between coaches and athletes. Subsequent interventions will then cause a bigger performance impact. We work closely with coaches, jocks and other service suppliers to make sure that the analysis is effectively integrated into athlete development programmes. Performance profiling provides an insight into however the player views their sport and their ability in it. By discussing each other's perceptions of the player's ability, the coach can seek to question and remove negative, 'irrational' thinking the player has about their ability.

Mental toughness

Mental toughness is closely related to contests and makes differences both winning and losing. Top athletes believe that the psychological factors play an important role as physical attributes and learned skills for the achievement. During the competitions mental toughness appears to carry great psychological significance, when the momentum starts to shift in one direction to another. Athletes remain completely focused based on the different level of situation during the training and competitions. The situational factors are more important for every individual or team athlete. **(Williams, 1998)**

Mental toughness is one of the psychological dimensions that is considered important in performance, achievement and excellence across many domains of life. Mental toughness is a term used throughout the sporting world it resides in common vocabulary of coaches, athletes, fans, and commentators across sporting context. With regards to sport, mental toughness is a term that coaches, athletes and sport psychology consultants use when discussing psychological factors that differentiate between successful and less successful athletes.

Mental toughness is having the natural or developed psychological edge that enables you to generally cope better than your opponents with the many demands like competition, training, and lifestyle that sport places on a performer, and specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure. Mental toughness associated with the peak performance in sports and the necessity in competitive sports. **(Goldberg, 1998)**

Mental imagery

Mental imagery is the process by which, an athlete visualizes himself or herself performing an upcoming task. Mental imagery includes visualizations, mental rehearsal, mental practices and cognitive enactment. Mental imagery has its unique styles in the way it is used to enhance the performance level of the individual and team. The use of mental rehearsal and mental imagery by an athlete prior to a competition results in improved performance in the competition. Many experiments in track and field, volleyball, and golf have been done to test this hypothesis. **(Gregg et.al 2010)**

Imagery is a popular and well-established strategy used to improve performance. Its effect, however, is influenced by an individual's capacity to create and control vivid images. The effectiveness of an imagery intervention increases for those reporting a higher ability to image. Imagery or mental rehearsal means using all senses such as see, feel, hear, taste and smell to rehearse your sport in the mind. Imagery helps the athletes in the way build on their strengths and helps eliminate their weaknesses and focus mentally tough. For getting the skill development athletes can use the imagery skills throughout the career and also stay motivated. **(White and Hardy, 1998)**

Imagery is a psychological control apparatus that is in some cases used to improve execution and strategy, encourage center and motivation. Some consider Imagery to be babble, however it is broadly realized that numerous first class competitors have joined its utilization into their preparation with the expectation that

it will assist them with performing at their best. Perhaps less known, is the way that symbolism is presently being received in active recuperation psychological abilities have for quite some time been viewed as a necessary piece of what makes a competitor fruitful at tip top levels. Perhaps one of the most generally explored and famous mediation methodologies to date has been the utilization of mental symbolism, which has been characterized as a mental movement that brings out physical qualities of any item, individual, or spot that is missing from our observation. **(Hall et.al, 2009)**

Mental imagery includes the competitors envisioning themselves in a particular domain or playing out a particular activity. The pictures ought to have the competitor playing out these things quite well and successfully. Mental symbolism can be valuable in helping you to re-center when the need arises. Mental symbolism is regularly an indispensable piece of the pee-rivalry plan, which helps set the psychological stage for a decent exhibition. The two factors take into consideration the sensory and perspective factors are commonly used. Internal imagery is very natural for us, because this is the way we see the world when we execute a sport skill.

Imagery and visualization is the process of creating pictures or images in mind. It is the use of imagination, seeing with the mind. The recreation of past experiences through mental imagery leads to the preparation of the competition. Visualization is the term that includes the recreation of feelings, sensations and emotions that accompany those images. Visualizations represent the mental reconstructions of individual experiences. Imagery includes the cognitive and motivational functions that make imagery a viable energizer.

The Sports Imagery Questionnaire was the majority of mental imagery research focused on cognitive specific imagery, where certain tasks are rehearsed and performed. Research typically follows three standard conditions: a physical practice condition, a mental imagery condition, and a control condition. Subjects perform a baseline task, practice the task using one of the three conditions, and are

measured on performance of the task following the practice session. **(Williams and Cumming, 2011).**

Elite competitors have ached physical and mental abilities over numerous long stretches of persistent practice and their physiological and mental capacities are probably going to surpass the degrees of beginner, fledgling and recreational athletes. They are meriting consideration in sport brain science research. Elite competitors have been appeared to work at generally high power levels and regularly embrace affiliated techniques in their preparation and serious efforts **(Morris and Spittle, 2005)**

Practice and will ask their players to complete a mental workout at home after the practice is over. The best athletes are those who follow through with the instructions, deeming that more practice leads to success. Imagery helps to enhance the performance level and also impartment to realize that when using imagery that it should be used frequently and practiced regularly.

Performance strategies

A performance strategy improves the player's individual and group's capacity of performance. Here the individual players are aware their aims the role of total team performance. Formulating the strategies will help the players to setting goals and planning and tactical preparations. Previous researchers suggested using imagery, self- talk, and relaxation during practice and competition The athletes who used performance strategies such as self-talk, relaxation and imagery etc had helped in self-confidence and concentration ability **(Frey et al., 2003).**

Specific skills for performing well in sport performance athletes believe that these skills improved through practice. Timely assessment and corrections leads to the proficiency after the various sessions of planning and implementation with various assessment and reassessment progress. Performance strategies proved to be factors that may lead to enhancing performance athletes with more experience in practice and competition. Performance **(Ismail & Ahmad, 2014).**

Performance strategies through goal setting are used to the commitment of individual and team players for better performance. Goal setting focuses on attention and full fills the performance enhancement. Emotional control regulated during the training and competition situations. The motivational aspects athletes help to the goal through emotional control. Automaticity is the specialized form of expert performance that is acquired through a lot of practice and the results improves attention control towards skills and focus of players. **(Thomas et.al)**

Relaxation manages the stress and stress related emotions in the form of anxiety and anger of players. Breathing exercises and progressive muscular relaxation is helpful for players. Self-talk in the form of automatic verbalization, private speech, inner dialog and deliberate speech is covertly a silent voice and the nature of self-talk both negative and positive.

Attention is the capacity of an individual player to select what they pay attention and what they ignore. Attention control is one of the necessary functions to the regulation of goal directed behavior. Positive thinking is an attitude of the players which leads to favorable results and transforms the energy level of players with a positive mind and leads to activation of something physically or mentally with active participation.

Athletics

Athletics is one of the glamorous events in the Olympic Games. Athletics is the term of competitive sports requiring physical skills and the systematic training for and competition. The word “athletic” is derived from the ancient Greek “Athos” meaning contest. Athletics is the collective name for the various types of sporting events involving the competitors such as running, throwing, walking and jumping

Soccer

Soccer is a passing and running match-up erratic and continually changing example requesting an intense attention to different players and capacity to settle on brisk choices and follow up on them without delay. In a worldwide society separated by physical and ideological obstructions, Soccer ubiquity isn't confined by age, sex,

political, strict, social or ethnic limits. The psychological quality must dominate the match, that is the reason it assists with winning the opposition, to upgrade performance. The mental requests of soccer players showed to be the activity powers at which a wide range of exercises during match play are performed. Psychological factors assume a significant job in the best execution.

The literature related the previous studies checked on and with the picking up of hypothetical understandings referenced above it is comprehended that sports brain science and execution profiling caused a constructive effect on the certainty of sports people, which thus influences the opposition execution by and large and furthermore execution in games. In spite of the fact that more investigations have been led on psychological studies in India, no exploration on mental execution performance profiling has been directed up until this point. Thus, the purpose of the study was to assess the ‘performance profiling of sports mental toughness, imagery and strategy skills among track and field athletes and soccer players’

Statement of the problem

The purpose of the study was to assess the performance profiling of sports mental toughness, imagery and strategy skills among track and field athletes and soccer players.

Objectives of the study

1. To assess the psychological analysis of variance among athletes and soccer group
2. To find out the prominent psychological factors of both athletics and soccer group
3. To find out the discrepancy value of psychological skills of both athletes and soccer group

Hypotheses

Based on the research findings, the following hypotheses were framed;

1. H₁ – Hypothesis-It was hypothesized that there would be significant differences in mental toughness perceived rating, self-rating and discrepancy among athletics groups
2. H₂ – Hypothesis-It was hypothesized that there would be significant differences in mental toughness perceived rating, self-rating and discrepancy among soccer groups
3. H₃ – Hypothesis-It was hypothesized that there would be significant differences in mental imagery perceived rating, self-rating and discrepancy among athletics groups.
4. H₄ – Hypothesis-It was hypothesized that there would be significant differences in mental imagery perceived rating, self-rating and discrepancy among soccer groups.
5. H₅ – Hypothesis-It was hypothesized that there would be significant differences in training sub scales of performance strategies perceived rating, self-rating and discrepancy among athletic groups.
6. H₆ – Hypothesis- It was hypothesized that there would be significant differences in training sub scales of performance strategies perceived rating, self-rating and discrepancy among soccer groups.
7. H₇ – Hypothesis-It was hypothesized that there would be significant differences in competition sub scales of performance strategies perceived rating, self-rating and discrepancy among athletic groups.
8. H₈ – Hypothesis-It was hypothesized that there would be significant differences in competition sub scales of performance strategies perceived rating, self-rating and discrepancy among soccer groups.
9. H₉ – Hypothesis-It was hypothesized that there would be prominent mental toughness factors in perceived rating, self-rating and discrepancy among athletics groups.

10. H₁₀ – Hypothesis-It was hypothesized that there would be prominent mental toughness factors in perceived rating, self-rating and discrepancy among soccer groups.
11. H₁₁ – Hypothesis-It was hypothesized that there would be prominent mental imagery factors in perceived rating, self-rating and discrepancy among athletics groups.
12. H₁₂ – Hypothesis-It was hypothesized that there would be prominent mental imagery factors in perceived rating, self-rating and discrepancy among soccer groups.
13. H₁₃ – Hypothesis-It was hypothesized that there would be prominent training and competition performance strategy factors in perceived rating, self-rating and discrepancy among athletics groups.
14. H₁₄ – Hypothesis-It was hypothesized that there would be prominent training and competition performance strategy factors in perceived rating, self-rating and discrepancy among soccer groups.

Delimitation

1. The study was delimited to a total of one hundred and sixty (N=120) players from different regions of Kerala and Karnataka state consisting sixty (N_A = 60) track and field athletes and one sixty (N_S = 60) soccer players subjects were selected.
2. The subjects of the study was delimited to twenty in men category as follows from athletic and soccer group
 1. Athletics
 - a. Sprinters
 - b. Jumpers
 - c. Long distance runners

2. Soccer
 - a. Defenders
 - b. Midfielders
 - c. Strikers
3. The age range of the players delimited in between 19 to 27
4. The study was delimited to the following psychological variables;
 - a. Mental Toughness
 - b. Mental Imagery
 - c. Performance strategies
5. The study was delimited to the following rating ;
 - a. Perceived rating score of each subscales of variables predicted by individual players
 - b. Self-rating score of each subscales of variables evaluated by applying questionnaires and score converted to out of ten with the help of mathematical formula
 - c. The discrepancy score of each subscales of variables calculated with the help of mathematical formula
6. The study will be delimited the following tools for questionnaire method as follows;
 - a. Mental toughness questionnaire by Dr.Alan Goldberg
 - b. Sports Imagery ability by Jennifer Cumming and Sara E Williams
 - c. Test of performance strategies by Thomas et.al

Limitations

The subjects of this study were from various playing position, based on which the following factors were considered as a limitations of the study:

1. Questionnaire used for the research has its own limitations. As such, any bias that might have crept into the subject response on this study would be considered as a limitation of this study.
2. Player's perception towards own behavior may be different. It would be considered as another limitation of the study.
3. The area of the players is not considered for this study. The assessment mainly based on the playing position of groups in soccer and events track and field groups.
4. The questionnaire study has its own limitations. The mood, current state of the subject and the depth of general psychological knowledge against the response for each item of the questionnaire were also considered as limitations of the study.

Significance of the study

The following points are the significance of the study based on performance profiling;

1. The study may give the results of performance profiling variables with perceived rating and self-rating and its discrepancy value
2. The study may give the psychological strength and weakness among athletes and soccer players group
3. The study may give performance profiling of athletes and soccer players for the feedback and its correction of various psychological variables
4. The study helpful for self-monitoring, review of sports performance action plan and psychological training programme for players
5. The study may lead the process of screening and selection process of players
6. Be able to determine the current psychological performance among athletes and soccer players.
7. Be able to set the psychological performance goal after the results of performance profiling.
8. To suggest various types of human psychological performance analysis according to the subject's demand.

9. To suggest the measures for improving the psychological skills among athletes during the practice and competition period.

Working Definition and Explanation of the Terms

Sports

"Sport" means all forms of physical activity which, through casual or organized participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels.

(AASP has adopted the European Sports Charter definition of sport)

Sports psychology

Sports psychology is a science in which the principles of psychology are applied in a sport or exercise setting. These principles are applied to enhance performance. **(Richard H, Cox, 2002)**

Performance profiling

Performance profiling is one of the methods to identify the psychological skills needed for performance of athletes and it maximizes the motivation during the training and competition period. Athletes rate themselves on the qualities identified on a scale of 1 to 10. The rating would give a visual representation of their strength and weakness and potential area of improvements.

Athletics

Athletics is one of the ancient activities in the form of various track and field events. The events categorized such as running, jumping, walking, throwing and combined events. The term athletics is derived from the "Athlon" means a contest and the athlete who takes part in such a contest involves physical activity.

Sprinting

Sprinting is running a short distance in a stipulated period of time and quickly reaching a target or finish. The short distance or dashes mainly in the form of 100 m, 200 m and 400m are largely focused upon acceleration of maximum speed.

Jumping

Jumping is a part of human existence and survives in early ages on earth. Jumping is a natural form of human movement and a suitable type of physical exercises. The category of jumping in the form of long jump, high jump, triple jump and pole vault.

Long distance running

Long distance running and walking are categorized in the form of various long distance running such as 3000M, 5000, M, 10000M, and marathon. In the case of walking the events categorized such as 20 KM and 50 KM.

Soccer

Soccer is the most popular game in the world with number of participant and spectators. The association football or soccer in which two teams of eleven number of players use any part of their bodies except hands and arms and try to reach the goal. Only the goalkeeper is permitted to handle the ball within the penalty area. The team that scores more goals considered as the winners.

Defenders

The defenders are the outfield players to stop attacks during the game and prevent the opposite team from scoring goals. The four types of formation such as center back, sweeper, full back and wing back. The center backs and fullbacks are an essential part in the modern football formation. The sweeper and wing backs are most specialized in formation.

Mid fielders

Midfielders are generally on the field between defenders and strikers. Midfielders are mainly attacking and defending midfielders. Most of the game the play makers comes under the midfielders. Most of the time the ball possessions mainly depend upon the midfielder's performance.

Strikers

Forward players or strikers in soccer games the players who play to the nearest in the opposite team's goal area. The forward players are normally scoring more goals compared to defenders and midfielders. Depending upon team formation the number of forward mainly depend upon the coaches strategies.

Rebound ability

Rebound is an ability that appears on some instants and bounce back from adversity. Rebound is technically a static ability that generates a replacement effect when the card is a spell on the stack. The set back from the obstacles of athletes facing before and during performance.

I've failed over and over and over again in my life and that is why I succeed.

(Michael Jordan)

Ability to handle pressure

I am always fascinated to watch how a guy handles a pressure situation. Some players become animated, some train extra hard, some withdraw -- but the true greats keep their self-belief, trust themselves and continue to work away, knowing that if the foundations have been established, good form will come.

(Australian cricketer Steve Waugh)

Concentration ability

If you have great powers of concentration, that means you're able to focus all your attention on the matter at hand. Concentration can also refer to something that's clustered together or to the density or strength of a solution. A concentration of people means that there are many of them in one area.

Level of confidence

Confidence can be described as a belief in one's self and one's ability to succeed. Striking a healthy balance between too much and too little confidence can be challenging. Too much and you can come off as cocky and stumble into unforeseen obstacles when you overestimate your own abilities or fail to complete projects on deadline because you underestimate the time and effort they require.

Deal with motivation

The term 'motivation' has been derived from the word 'motive'. Motive may be defined as an inner state of our mind that activates and directs our behavior. It makes us move to act. It is always internal to us and is externalized via our behavior. Motivation is one's willingness to exert efforts towards the accomplishment of his/her goal.

Skill imagery

An ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carry out complex activities or job functions involving ideas (cognitive skills), things (technical skills), and/or people (intrapersonal skills).

Strategy imagery

It is an action that managers take to attain one or more of the organization's goals. Strategy can also be defined as "A general direction set for the company and

its various components to achieve a desired state in the future. Strategy results from the detailed strategic planning process”.

Goal imagery

A goal is an idea of the future or desired result that a person or a group of people envisions, plans and commits to achieve. People endeavor to reach goals within a finite time by setting deadlines

Mastery imagery

Mastery motivation as a psychological force that stimulates an individual to attempt independently, in a focused and persistent manner, to solve a problem or master a skill or task which is at least moderately challenging for him or her.

Goal setting

Goal setting is one of the styles of mental training used to the commitment of individual players for the achievements of personal and team goal. by the help of various forms of goal setting such as short, medium and long term the players can encourage the hard work and focus on achieving goals easily through goal setting. The effect of goal setting based on the focus on attention, mobilizes effort in proportion to the task demand, enhancing persistence and to encourage the individual to develop strategies for achieving the goal.

Emotional control

Emotional control means the regulated mode of each and every athlete emotions especially during the training and competition period. The use of emotions through the way of motivational aspects athletes reaches the goal through emotional control.

Automaticity

Automaticity is the ability of performance and executes skills without any information processing resources. Automaticity is the hallmark of expert

performance that is acquired through learning and extensive practice. The tuning of attention control towards skills and focus leading the automaticity of players.

Relaxation

Relaxation is one of the psychological strategies used by players to manage the stress and stress related emotions in the form of anxiety and anger. In the form of physical symptoms such as tension and increased heart rate during the high pressure situation. The relaxation strategies like breathing exercises and progressive muscular relaxation is helpful for players for the betterment of the performance.

Self-talk

Self-talk means the statements of players address themselves in the form of automatic verbalization, private speech, inner dialog and deliberate speech. Most of the self-talk is covertly a silent voice and the nature of self-talk both negative and positive. The types and structure of self –talk from single words to specific phrases.

Attention control

The capacity of an individual player to select what they pay attention and what they ignore. Attention control is one of the necessary functions to the regulation of goal directed behavior. The common man realized attention control the ability of an individual to concentrate.

Positive thinking

Positive thinking is a mental attitude of the players which leads the favorable results and to creating thoughts and transforms the energy level. Positive mind helps lead to happy endings in various situations. Through positive thinking an individual can improve stress management and health.

Activation

Activation is the ability of an individual to do something physically or mentally with active participation.

Rating

Rating means the ranking of an individual player based on their various achievements, quality and standard assessed by the experts.

Perceived rating

Perceived rating is the prediction value of an individual player or team about their own performance before the completion of actual test especially in the form of decimal method.

Self-rating

Self-rating is the calculated value of an individual player or team about their performance through the actual test through questionnaire scoring.

Discrepancy

Discrepancy is the value related to the perceived and self-rating. The highest value of discrepancy indicates the players need to concentrate more for the better performance.

Descriptive profile

Descriptive statistics is the simple form of and summary of a given data set representing the total population or sample. The measures of frequency mainly based on count, percent and frequency. The measures of central tendency divided mainly based in the form of mean, median and mode. The measures of dispersion or variation are range, variance and standard deviation. The measures of position mainly based on the percentile ranks.

ANOVA

Analysis of variance or ANOVA is a method in statistics using the separation of observed variance data into different parts to use additional tests and measurement. One way analysis of variance is used for three or more groups of data

and its relationship between the dependent and independent variable and used to determine whether there are significant differences between groups.

Factor analysis

Technique for reducing the large number of variables into fewer numbers of factors is called factor analysis. Factor analysis extracts maximum common variance from all variables and puts them into a common score.

The background features a dark teal triangle in the top-left corner and a yellow triangle in the bottom-right corner. A large, semi-transparent yellow trapezoidal shape is centered, containing a faint, light-colored geometric pattern of overlapping rounded rectangles and lines.

Chapter II

REVIEW OF RELATED LITERATURE

Chapter II

REVIEW OF RELATED LITERATURE

Literature review is a comprehensive summary of previous research on a topic. The literature review surveys scholarly articles, books, and other sources relevant to an area of research. The review should enumerate, describe, summarize, objectively evaluate and clarify this previous research. It should give a theoretical base for the research and determine the nature of your research. The literature review acknowledges the work of previous researchers, and in so doing, assures the reader that your work has been well conceived. It is assumed that by mentioning a previous work in the field of study, that the author has read, evaluated, and assimilated that work into the work at hand.

A literature review creates a landscape for the reader, giving her or him a full understanding of the developments in the field. This landscape informs the reader that the author has indeed assimilated many previous, significant works in the field into her or his research. In general, the literature review should include the to provide a context and identify seminal works and scholars in the field. Literature provides acknowledgment of existing theories, points of view, hypotheses, etc. in the field of research. The purpose of the present study was to collect the relative literature from various sources like Google scholar, research gate, academia, slide share and linked in.

Performance profiling

Li et al. (2020) organized to identify potential profiles of personality and emotional traits based on a sample of professional Taekwondo athletes from China and to examine the utility of the profiles in predicting successful athlete performance. Multidimensional scaling profile analysis, two latent profiles of personality and emotional traits were identified that indicate four subtypes of athletes. Regression analyses were conducted to examine how the identified profiles were associated with performance success. The results seemed to suggest that

Taekwondo athletes with more performance success were more likely to have a profile of positive personality and emotional traits, while athletes with less performance success were likely to have somewhat elevated levels of self-control, extraversion, and aggression. Knowledge of athletes' personality profiles will help sport psychologists develop suitable interventions to enhance athletes' performance success. In concluding, the results are discussed in the context of athlete psychosocial development. The study added further evidence about the association between psychological and emotional factors and successful Taekwondo athletes.

Cui et al. (2018a) analyze the match performance of professional female tennis players in different Grand Slams and model the relationships between match performance variables and relative quality to build typical performance profiles for those players in Grand Slams. Data was of a total of 1369 matches were collected within the duration of 2014–2017 four Grand Slams. Higher-correlated variables were used to build players' typical performance profiles via regression-based technique to give percentage evaluation scores, which means the percentage of matches where a performance variable value would be expected to be lower than the observed value considering the RQ of two competing players. Players had more service winners, double faults, return winners and return unforced errors in the Australian Open and US Open, implying a fast – fast serve strategy, and higher dominance ratio and better serving performance in Wimbledon. Distance covered became similar in all Grand Slams.

Carpentier and Mageau (2016a, p. 54) Predicting Sport experience throughout Training: The Role of Change-Oriented Feedback in Athletes' Motivation, self-confidence, and desires Satisfaction Fluctuations. Change-oriented feedback quality is predictive of between-athlete's differences in their sports experience. This study includes these findings by work however coaching-to-training variations in Change-Oriented Feedback quality influence athletes' training expertise whereas dominant for the impact of promotion-oriented feedback. In total, forty-nine athletes completed a diary when fifteen consecutive training sessions to assess Change-Oriented Feedback and promotion-oriented feedback received throughout coaching, as well as situational outcomes. Multivariate multilevel

analyses showed that, when controlling for covariates, Change-Oriented Feedback quality during a specific training session is positively linked to athletes' autonomous motivation, self-confidence, and satisfaction of their psychological needs for autonomy and connection throughout an equivalent session. In contrast, Change-Oriented Feedback quantity is negatively linked to athletes' need for competence. Promotion-oriented feedback quality is a significant positive predictor of athletes' self-confidence and needs for autonomy and competence. Contributions to the feedback and literature and for coaches' training, area units discussed.

Najah and Rejeb (2015a, p. 163) differentiate selected psychological skills of male youth soccer players in different playing positions. This study examined possible positional differences of 180 male youth Tunisian soccer players between the ages of 15 and 19 years old from different clubs of 1st and 3rd Youth Class divisions. The subjects were divided into three playing positions, namely, forward (n = 60), midfield (n = 60) and defense (n = 60), and compared with regard to twelve psychological skills measured by means of the Ottawa Mental Skills Assessment Tool (OMSAT-3) of Durand Bush et al. (2001). Results yielded significant differences between basic and psychosomatic subscale scores of the players in different playing positions. Forward players consistently outperformed the other positional groups in motivation, confidence and activation. Defense players outperformed the other positional groups in relaxation, while midfield players showed the lowest psychological skill levels. The results of the study provided support for the hypothesis that positional differences in terms of psychological skills existed. More specifically, statistical evidence suggested that youth soccer players could be differentiated as a function of psychological skill and the position that they played on the team.

Butterworth et al. (2013a, p. 587) suggested on performance profiling in sports coaching: a review Performance profiles have been developed to provide a collection of information about sports performances. The developments within the area include presentation strategies for profiles and ways in which of decoding performance indicator values among profiles. The types of data of knowledge used

among employment square measures reviewed before performance identification techniques square measure critically examined with relevance employment information wants. The review results in the listing of a group of criteria for performance identification techniques among sports employment.

McGarry et al., (2013) mentioned in the Routledge Handbook of Sports Performance Analysis Sports performance analysis is interdisciplinary in nature and defies accurate definition was the research presented in this handbook stems largely from previous empirical investigations of sports performance with a view on providing objective description of sports behavior action variables in practice and competition. The aim of performance analysis is twofold such as to advance scientific understanding and to assist sports practice by providing the coaching process with augmented information. The process of labeling and recording the identified action variables was commonly referred to as 'notation', influenced by earlier developments in dance notation by Rudolf Laban, resulting then in sports notation analysis in reference to this method. In short, sports notation analysis is the predecessor of sports performance analysis.

Sohrabi et al., (2011) analyzing the psychological profile of athletes in impinging and non-inter-group communication sportswoman. The aim of the present study was to compare clinical pattern and clinical symptoms of personality between athletes in contact and non-contact sports. The variables were assessed with Millon Clinical Multiracial Inventory-III manual and H. J. Eysenck personality questionnaires. Subjects consisted of 200 Male who were selected from 4 groups of college teams (box, karate, swimming, and gymnastics in the West- Azerbaijan in Iran. According to the upshot of this study results, it can be concluded that the groups are distinguished significantly in the majority of variables, indicating that contact athlete's present differentiated psychological device characteristics in comprising non- contact athletes. Results show that contact sport players had heights lots in the theatrical, egotistical, antisocial, negativity and sadistic scales, however in schizoid scale non heritable low scores in comparison non-contact sport players and

there were no significant difference of opinion among groups in personality ingredient.

Ferreira et al. (2007b, p. 345) suggests with disability study examined the pre-competition temporal patterning of competitive anxiety elements in forty-two athletes with a disability who participated at the national level and at the national trials for the Paralympics Games in a variety of sports. Competitive State Anxiety Inventory-2 changed version that measures intensity and direction of the competitive anxiety response on continual three occasions before the competition (1 wk., 2 hr., and 20 min.). The analysis advised that for the psychological feature and physical dimensions athletes with disabilities show an identical pre competition anxiety response to athletes without an in capacity. However, there seem to be some variations, particularly within the intensity of self-assurance, as athletes with an in capacity according to a discount of assurance simply before a competition..

McNeill and Wang (2005a, p. 125) Suggested in the studies of psychological profiles of elite school sports players in Singapore. Sports has become such a powerful global phenomenon that a country like Singapore has set its sights on becoming one of the top ten sporting nations in Asia. A full 'Sport School' will commence in 2004 to achieve these aims and to further entice the commitment of potential young stars, a significant reward system has been created. Results revealed three-distinct clusters with 33% of the sample with an motivated profile, 48% in a 'highly motivated' cluster and 19% in a 'high task-mastery' cluster. These three clusters differed significantly in their beliefs about the purposes of sport. Motivated students were less likely to endorse mastery and physically active lifestyle and 'being a good citizen' as functions of sport compared to the other two clusters. The main difference between the 'highly motivated' and high task-mastery clusters was that the former were more likely to endorse 'gaining social status' as one of the main purposes of sports

Kais and Raudsepp, (2004) analyzed psychological features and physical Anxiety and authority in Athletic Performance of Beach Volleyball. The competitive anxiety and confidence state responses upon athletic concluding of cardinal male

beach volleyball role player completed the translated and changed Competitive State Anxiety Inventory–2 including the initial intensity scale and a direction scale of Jones and Beau. Musician operation was scored from the recording records exploitation customary rating scales. Correlations indicated scores on Direction subscale of changed Competitive State Anxiety Inventory–2 and authority were moderately completely ($r = .27$ to $.51$) related to with totally different accomplishment portion and the totality of ability elements of beach volleyball. Stepwise multiple regressions indicated that, as anticipated, directional perceptions of psychological feature and physical anxiety and confidence was a significant predictor of beach volleyball performance but accounted for beneath forty seconds of the variance. Original Saturation subscales of physical and psychological feature anxiety failed to predict performance. Finding supports the notion that the direction of tension responses should be taken into thought once examining anxiety-performance association within the sports.

(Butler et al., 1993, p. 59) discuss the importance for coaches and sports psychologists to discover the athlete's mental perception of self and performance the athlete's perspectives are illustrated in the form of performance profiling and methodology of developing the profiles is described. The performance profiling application is illustrated with the examples from elite athletes in the range of Olympic level.

Butler et al. (1993a, p. 55) describes the performance profile in practice the versatility of the Performance Profile, a means of exploring and assessing the athlete's perception of performance needs, using tree examples from the sport of amateur boxing. Individual analysis of one boxer's Performance Profile illustrates the influence this had on the coaching and psychological input, by developing a coaching program to meet his perceived needs. Another case analysis shows that monitoring progress with the Performance Profile helps both coach and boxer by indicating to the coaches the perceived strengths to focus on close to competition and where sharpening work might be addressed. Finally, the variance in perception

between coach and boxer, highlighted through individual and group Profiles, can help identify major discrepancies in perception.

Mental toughness

Zeiger and Zeiger (2018a) determine mental toughness profiles via latent profile analysis in endurance athletes and whether associations exist between the latent profiles and demographics and sports characteristics. Endurance athletes >18 years of age were recruited via social media outlets (n = 1245, 53% female). Mental toughness was measured using the Sports Mental Toughness Questionnaire and psychological performance inventory- self-esteem was measured using the Rosenberg Self-Esteem Scale. The data showed that mental toughness latent profiles exist in endurance athletes. High MT is associated with demographics and sports characteristics. Mental toughness screening in athletes may help direct practitioners with mental skills training.

Ponnusamy et al. (2018a) identify the number and type of profiles of elite athletes' use of Psychological skill training and examine differences between these clusters in terms of their self-reported mental toughness. 285 Malaysian elite athletes (170 males, 115 females) aged 15–44 years ($M = 18.89$, $SD = 4.49$) completed measures of various psychological skill training and mental toughness. The results revealed three profiles in both practice and competition settings that were distinguished primarily according to quantitative differences in the absolute levels of reported use across most of the psychological skill training assessed in practice and competition settings, which in turn, were differentially related with mental toughness. Specifically, higher use of PSTs was associated with higher levels of mental toughness. Study concluded as the first analyses of the different configurations of athletes' use of psychological skill training that typify unique subgroups of performers.

Wieser & Thiel, (2014) investigates the hardiness scores of professional footballers and examine the correlation between two questionnaires. It also included a mental hardiness rating of players by two coaches, and examined differences in

hardiness and mental toughness between national and international players. Two self-assessment questionnaires such as modified Sports Mental Toughness Questionnaire and Psychological Performance Inventory were completed by 20 male professional footballers. Two coaches independently rated each player. The independent t-test was used to examine differences between national and international players and the result shows no significant agreement was found between player self-assessments and coaches' ratings. The study concluded as the questionnaires correlated well in their outcome scores. These findings suggest that coaches moderately agree when assessing the level of mental hardiness of football players. There was no agreement between player self-assessment and ratings by coaches. Footballers who play or had played for national teams achieved slightly higher mental hardiness scores.

Gucciardi and Jones (2012, p. 30) identify mental toughness profiles in adolescent cricketers and examine differences between these profiles on developmental assets and negative emotional states. A sample of 226 community cricketers (125 New Zealanders and 101 Australians; male $n = 210$) aged between 10 and 18 years ($M_{age} = 14.41$ years; $SD = 2.11$) completed a multisession, online survey containing measures of mental toughness, developmental assets, and negative emotional states. The results of hierarchical and nonhierarchical cluster analyses revealed three mental toughness profiles characterized by low, moderate, and high levels of all five mental toughness assets. Cricketers with high levels of mental toughness reported possession of more developmental assets and lower levels of negative emotional states when compared with cricketers with the moderate levels of mental toughness. No statistically significant differences existed between the moderate and low levels of mental toughness profiles. The findings recommended preliminary evidence to suggest that mental toughness might be viewed not only from the traditional view of optimal performance but also from a stance that may represent a contextually salient representation of thriving in youth sport settings.

Coulter et al. (2010, p. 705) identifies the self-perceptions of mental toughness profiles of adolescent Australian footballers and to explore the relations

between the mental toughness clusters and achievement goals and sport motivation. A total of 214 non-elite, male Australian footballers aged 16-18 years (mean = 16.8, $s = 0.7$) provided self-reports of mental toughness, achievement goals, and sport motivation. Significant multivariate effects were observed for achievement goals and sport motivation with the high mental toughness group favoring both mastery- and performance-approach goals and self-determined as well as extrinsic motivational tendencies. The results recommended those adolescent Australian footballers' self-perceptions of mental toughness fall within two clusters involving high and moderate forms of all four components, and that these profiles show varying relations with achievement goals and sport motivation.

Mental imagery

Anuar et al. (2017b, p. 1325) Examines whether physical and environmental elements of PETTLEP imagery relate to the ability to image five types of sport imagery (i.e. skill, strategy, goal, affect and mastery). Two hundred and ninety participants (152 males, 148 females; $M_{age} = 20.24$ years, $SD = 4.36$) from various sports completed the Sport Imagery Ability Questionnaire (SIAQ), and a set of items designed specifically for the study to assess how frequently participants incorporate physical (e.g. 'I make small movements or gestures during the imagery') and environment (e.g. 'I image in the real training/competition environment') elements of PETTLEP imagery. Structural equation modeling tested a hypothesized model in which imagery priming (i.e. the best fitting physical and environment elements) significantly and positively predicted imagery ability of the different imagery types (skill, $\beta = 0.38$; strategy, $\beta = 0.23$; goal, $\beta = 0.21$; affect, $\beta = 0.25$; mastery, $\beta = 0.22$). The model was a good fit to the data: $\chi^2(174) = 263.87$, $p < .001$, $CFI = .96$, $TLI = .95$, $SRMR = .09$, $RMSEA = 0.05$ (90% CI = 0.03–0.05). Findings displayed that priming imagery with physical and environmental elements is associated with better skill, strategy, goal, and affect and mastery imagery ability. The findings extend models of imagery use by indicating how athletes' images may influence their imagery ability.

HABACHA et al. (2014a, p. 313) conducted a study on Effects of Gender, Imagery Ability, and Sports Practice on the Performance of a Mental Rotation Task. Mental rotation is one amongst the most spatial skills necessary within the abstraction transformation of mental pictures and also the manipulation of abstraction parameters. Researchers have shown that mental rotation skills dissent between populations looking at many variables. This study uses a mental rotation task to investigate the effects of several factors on the spatial abilities of 277 volunteers. The results demonstrate that high and low imagers performed equally well on these tasks. Athletes outperformed non-athletes despite their discipline, and athletes with greater experience outperformed those with less expertise. The results replicate the antecedently according to finding that men exhibit higher spatial skills than girls. However, with high amounts of practice, the women in the current study were able to perform as well as men.

Butterworth et al. (2013a, p. 577) performance profiling in sports coaching: a review developed to provide a collection of information about sports performances. The developments in the area include presentation methods for profiles and ways of interpreting performance indicator values within profiles. However, performance profiles need to be considered in the context of sports coaching. This paper presents a review of performance profiling techniques within the coaching process. The information needs of coaches attempting to manage this inherently complex process need to be served by performance analysis and performance profiles fulfill part of this role. The types of information used within coaching are reviewed before performance profiling techniques are critically examined with respect to coaching information needs. The review leads to the listing of a set of criteria for performance profiling techniques within sports coaching.

Kizildag and Tiryaki (2012a, p. 749) categorized a study on mental imagery Use of Athletes in Individual and Team Sports that need open and closed ability. This study compared the use of images in elite male and feminine athletes in open and closed and individual or team sports. a complete of fifteen elite Turkish athletes ages 15 to 29 years recent (males' M age = twenty.7 yr., SD = 3.3; females'

M age = twenty.0 yr., SD = 3.5) from open-team sports (n = 66), open-individual sports (n = 26), and closed-individual sports (n = 59) completed the game mental imagery form. a big variable impact of sport sort was found. Univariate analyses indicated that male and feminine athletes in team open-skill sports and individual closed-skill sports used a lot of psychological feature General–Mastery mental imagery than did athletes in individual open-skill sports.

Gregg et al. (2011, p. 140) investigated the content of young athletes' imagery use. The participants were 7-8 (n = 24), 9-10 (n = 30), 11-12 (n = 35), and 13-14 (n = 21) year-old male and female athletes competing in both team and individual sports. Sixteen focus groups, two for each age category and gender, were used as the method of data collection. Each focus group consisted of 6-8 participants grouped by gender and age and was structured to assess what they image in sport. Emerging from the focus groups were five content categories of imagery including imagery sessions, the effectiveness of imagery, the nature of imagery, the surroundings, and the type of imagery. These categories support previous imagery research conducted with adult athletes (Munroe, Giacobbi, Hall, & Weinberg, 2000). Imagery with respect to age and gender are discussed.

Williams and Cumming (2011a, p. 425) developed and provides initial validation of the Sport Imagery Ability Questionnaire. The questionnaire assesses athletes' ease of imaging different types of imagery content. Following an extensive pilot study, 375 athletes completed a 20-item. Exploratory factor analysis revealed a 4-factor model assessing skill, strategy, goal, and affect imagery ability. Confirmatory factor analysis established this four factor structure in Study 2 (N = 363 athletes). In Study 3 (N = 438 athletes), additional items were added to create a fifth mastery imagery subscale that was confirmed through confirmatory factor analysis. Study 4 (N = 220 athletes) compared the to the Movement Imagery Questionnaire-3. Significant bivariate correlations ($p < .05$) confirmed the sports imagery ability questionnaire concurrent validity but demonstrated differences in imagery ability of different content. Overall, the questionnaire demonstrates good factorial validity, internal and temporal reliability, invariance across gender, and an

ability to distinguish among athletes of different competitive levels. Findings highlight the importance of separately assessing imagery ability of different content.

Ruiz and Watt (2012, p.73) examine the psychometric properties of the Spanish version of the Sport Imagery Questionnaire which assesses cognitive and motivational functions of imagery use. The participants were 361 athletes (234 male and 127 female) with a mean of age of 24.29 ± 7.76 yrs. Athletes were recruited from 31 sports across three competitive levels the results shows the confirmatory factor analyses of the 30-item five factor sports imagery questionnaire model revealed adequate fit to the data and multivariate analyses of variance revealed that athletes of higher competitive level reported significantly higher levels of cognitive general and cognitive specific imagery. The overall results provide further support for the claim that the sports imagery questionnaire has a reproducible factor structure and internal consistency for measuring imagery use in Spanish athletes.

Watt et al. (2006a, p. 113) examine the reliability and factor structure of the Finnish version of the Sport Imagery Questionnaire, a measure which examines cognitive and motivational functions of imagery. The final sample comprised 231 participants drawn from 34 sports and ranging in age from 14 to 49 years ($M = 20.9$, $SD = 5.8$). Internal consistency and confirmatory factor analyses were undertaken to evaluate the reliability and factorial validity of the scale. Fit indices and modification data generated from examining the 30-item five-factor model were equivocal, suggesting minor amendment and categorization of several items rather than major adjustment to the proposed latent factor structure. Cronbach coefficient alpha indicated the scale is reliable. Overall, these results provide positive additional support for the claim that the Sport Imagery Questionnaire has a reproducible factor structure and is a reliable test for measuring imagery use in Finnish athletes.

Performance strategies

Álvarez-Kurogi et al. (2019a) analyze the psychological characteristics and profile related to sports performance of top-level young futsal players, according to the offensive or defensive role. A total of one hundred sixty-seven young promising

futsal players participated in this study and have been chosen to play in the Championship of Spain Selections. The Psychological Characteristics related to sports performance for soccer players Questionnaire was used, and one-way ANOVA test was performed based on the playing position such as goalkeeper, defender and defender-wing, wing and wing-defender, pivot and wing-pivot, and universal. The results indicate that goalkeepers had the best psychological profile and characteristics related to sports performance. Pivots and wing-pivots had less self-confidence, and universals players, less stress control in relation to the rest of the playing positions ($p < 0.05$). The main findings revealed that the psychological characteristics and profile related to sports performance in young promised futsal players are different according to the playing position, and this study suggest the inclusion of psychological-training programs in order to improve the psychological abilities of players, especially for players with offensive role who seek to score goals.

Lourido et.al (2018) translates and analyse the Test of Performance Strategies three competition subscales to the Spanish context. The items included in the original test in English were translated using a double-back method, and the test was completed by a sample of 1,003 Spanish athletes of both sexes. Analyses of the factorial validity, reliability and invariance of the measurement model were carried out. The results reveal favorable evidence was obtained for a measurement model comprising 36 items grouped in 9 factors, similar to the original model. Model fit was reasonable for both individual parameters and overall. Evidence was also favorable for sex-based measurement model invariance. The study concluded the adaptation is satisfactory and fit for use by sports psychology researchers and professionals in assessing the psychological skills employed by athletes in competition.

Lourido et al., 2018) describing the psychological characteristics of athletes play a key role in sport performance and may moderate and mediate the influence of technical, tactical, and physical abilities athletes show. This paper was aimed at describing the psychological profiles of two cycling sports such as triathlon and road cycling. One hundred and twenty-nine male and female professional and amateur

cycling athletes (35.74 years old average age ± 12.79 ; 14.94 average numbers of years practicing cycling ± 11.20) were assessed on different psychological characteristics. The Psychological Characteristics related to the Sport Performance Questionnaire and the Psychological Skills Inventory for Sports was used as a questionnaire method. Results indicate the significant differences among triathlon and road cyclists stress control, influence of performance evaluation, motivation and mental skills. There were no significant differences between men and women though there were differences among pros and amateur athletes. Triathlon professionals, compared to amateurs, showed higher scores in all the psychological dimensions assessed such as stress control, influence of performance evaluation, motivation, and mental skills. The results of this descriptive study contribute to establishing a model of optimal psychological profiling applied to the different cycling groups that can be used by sport psychologists, trainers, and coaches in order to promote peak performance of these athletes.

Jigmat (2012) examine possible differences in the use of performance strategies of college going athletes of different type of sports and gender. The sample consisted of 68 athletes from Lakshmibai National University of Physical Education Gwalior, (36 males, 32 females) aged 21.04 ± 1.75 years, with different team sport and individual sport. Test of Performance Strategies questionnaire was used during the competition season of 2011-12 sessions. The results showed that there were significant differences in performance strategies used by male and female athletes during competition and practice condition, further there are significant differences in performance strategies used by athletes of team sports and individual sports during practice and competition condition. During both practice and competition condition female athletes were better compared to male athletes in emotional control, whereas male athletes perform better than female athletes in goal setting, Self talk, imagery and attention control in practice condition and automaticity, self-talk, imagery, attention control and activation during competition condition. Individual sports athletes had better emotional control than team sports athletes during practice and competition condition whereas team sports athletes were better than individual athletes in relaxation and activation during practice condition.

The differences between athletes of different sports and gender could be considered from coaches and sport psychologists in order to help athletes improve their athletic performance.

Hardy et al. (2010b, p. 32) analyzing with Test of Performance Strategies: Instrument refinement using confirmatory ingredient depth psychology. A recent confirmatory factor depth psychology of the check of Performance strategies by Lane, Harwood, Terry, and Karageorghis provided only mixed reinforcement for structural wholeness of the Crown. The objectives of the present paper were to further examine the instrument's structural unity and enhance it if necessary. The methods and outcome show in, in a pilot field, a sample distribution of North American language jock completed the TOPS. Results revealed poor fits throughout analysis of the competition and observed subscales. In Study 1, a variety of recent things were developed, and a refilling competition subscale introduced, to address the problems identified and create the TOPS 2. CFAs of responses from a sample of Australian, North American and British jock provided much stronger sustenance for the factorial rigor of the TOPS 2 stock. In Study 2, the factorial validity of the TOPS 2 was confirmed on a new sample of Australian athletes. The TOPS 2 appears to be an improvement over the TOPS. Implications of the results for practitioners are discussed, and hereafter research ways are recommended.

Summary of review literature

The researcher has gone through the available literature, which are relevant to the studies, findings and facts including interpretations and explanations from the published literature and have been included in this chapter. Collected 30 reviews of relevant to these studies. It has been ordered chronologically .The researcher also collected the latest literature relating to this study through the websites like academia registration with proper analytics of related publication journals and book chapter. **(Appendix X)**



Chapter III

METHODOLOGY

Chapter III

METHODOLOGY

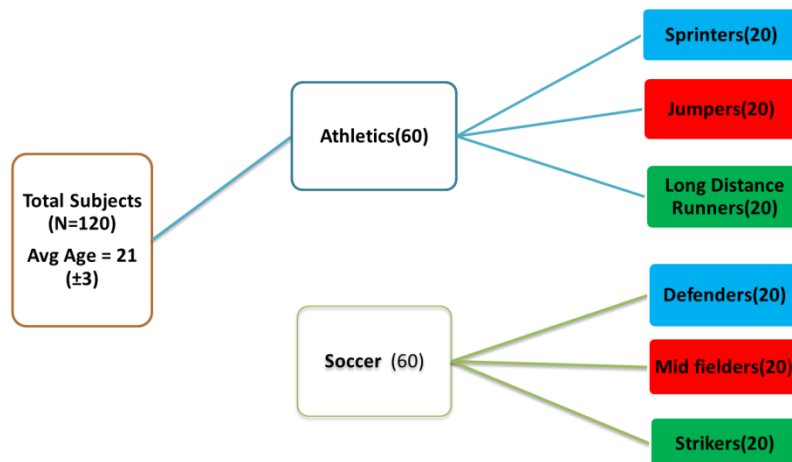
The methodology is an important aspect which should be given due consideration. This chapter describes a clear picture of how the study is conducted based on the nature of selection of subjects, selection of variables, collection of data, description of tools, the procedure for administration of test items, procedure of scoring and the methods employed for statistically treatment of data are described.

Selection of subjects

The purpose of the study was to analyse the performance profiling of sports mental toughness, mental imagery and performance strategies of athletes and soccer players. To achieve the purpose a total 120 male national and state level athletes and soccer players were selected as the subjects who represented national level. The age ranged between 18 to 27. The subjects are divided into three from athletics such as sprinters, jumpers and long-distance runners. In the case of soccer players three groups such as defenders, midfielders and strikers.

Figure 3.1

Selection of subjects



Selection of variables

The three psychological variables selected for the study such as mental toughness, mental imagery and performance strategies. The tool was selected for the study such as mental toughness questionnaire in sports, sports imagery ability questionnaire and test of performance strategies. Mental Toughness in sports has five sub-variables such as rebound ability, ability to handle pressure, concentration ability, level of confidence and deal with motivation. The sports imagery ability has the subscales of skill, strategy, goal, and affect and mastery imagery ability.

Test of performance Strategies has eight each subscale from both practice and competition subscale. In the case of test performance strategies practice subscales, the sub variables such as goal setting, emotional control, automaticity, relaxation self-talk, imagery, attention control and activation. The competition subscales of test of performance strategies same as the practice subscale instead of the sub scale attention control the positive thinking are mentioned.

Collection of data

The investigator explains the psychological performance profile variables and its application. The subjects fill each statement and predict the decimal scoring for each sub variable. (**Appendix I**) Here the results mainly based on prediction of players are under the perceived rating. The self-rating is the result of scoring questionnaire and sub scales. The discrepancy value mainly depends upon the perceived rating and self-rating. The results categorized such as descriptive profiling, analysis of variance, factor analysis of perceived rating, self-rating and discrepancy value. There was no separate comparative study between athletes and soccer players group in descriptive profiling, analysis of variance. But in the factor analysis and performance profiling was clearly indicating the prominent factors of perceived rating, self-rating and discrepancy value of both athletes and soccer players. Investigator prepared the digital form of questionnaire for further studies with Google form link and QR code scanning of questionnaire and perceived rating sheet.

The factor analysis and discrepancy value of variables differ from perceived rating and self-rating. Here the prominent factors from out of three factors need to concentrate more. The mathematical formula leads to the results of discrepancy value indicating the highest discrepancy value needs more concentration.

Mental toughness in sports

The questionnaire was developed by Dr. Alan Goldberg. Mental toughness questionnaire was used to assess the level of mental toughness of players. The questionnaire on mental toughness has thirty statements based on the subscale of rebound ability, ability to handle pressure, concentration ability, level of confidence and deal with motivation. The subjects were instructed to respond to the self-evaluation of each subscale and to fill the questionnaire generally related into the competitive situations. Each statement has two responses i.e., true or false. The scoring based on the answer key and the subscale value converted into decimal forms for the purpose of performance profiling discrepancy value. **(Appendix II)**

Table 3.1

Sub-variables and key of mental toughness in sports

Sl No	Sub variables	Statement numbers
1.	Rebound ability	1,2,3,4,5 and 6
2.	Ability to handle pressure	7,8,9,10,11 and 12
3.	Concentration ability	13,14,15,16,17 and 18
4.	Level of confidence	19,20,21,22,23 and 24
5.	Motivation	25,26,27,28,29 and 30

Table 3.1 shows that the total numbers of six questions included in each subscale out of thirty statements.

Table 3.2

Model excel calculation of mental toughness

Player	No: Statement	Score of Statement	Maximum Marks	Secured Marks	<i>SR</i>	<i>PR</i>	<i>D</i>
Total	30	1	30	30	10	10	0
MT I	6	1	6	5	8	9	18
MT 2	6	1	6	4	7	8	24
MT 3	6	1	6	3	5	7	35
MT 4	6	1	6	2	3	6	42
MT 5	6	1	6	1	2	4	32
Total	30	5	30	15	34	34	80
Average	6	5	6	3	6.8	6.8	16

Table 3.2 The Model table indicates that the total numbers of six questions included in each subscale out of thirty statements. Table also indicates the model of total score and averages of each subscale.

Note: Code of sub variables such as mental toughness **MT**, Self rating as *SR*, Perceived Rating as *PR* and Discrepancy and *D*.

Sports imagery ability questionnaire

Sports imagery ability questionnaire is designed to the measurement of the ability to imagine the different levels of sports. The level of skill, strategies, goals, feelings, emotions and mastering the difficult situations. Sports imagery ability to evaluate the athletes may change in different situations. In various studies, the sports imagery ability questionnaire proved as good content of factor and correlated values. Sports imagery ability questionnaire has good internal stability and reliability. **(Appendix III)**

Table 3.3

Sub-variables sports imagery ability

SI No	Sub Variables	Statement Numbers
1.	Skill imagery ability	3+8+12/3
2.	Strategy imagery ability	1+6+13/3
3.	Goal imagery ability	5+9+14/3
4.	Affect imagery ability	4+7+11/3
5.	Mastery Imagery Ability	2+10+15/3

Table 3.3 shows that the total numbers of three statements included in each subscale out of total fifteen statements.

Table 3.4

Model excel calculation of mental imagery

Players	No: Statement	Score of Statement	Maximum Marks	Secured Marks	SR	PR	D
Total	15	7	105	105	10	10	0
MI I	3	7	21	20	9.5	9	4.5
MI 2	3	7	21	19	9	8	8
MI 3	3	7	21	18	8.6	7	9.8
MI 4	3	7	21	17	8.1	6	11.4
MI 5	3	7	21	16	7.6	5	14.4
Total	35	35	35	90	42.8	35	48.1
Marks							
Average	7	7	7	18	8.56	7	9.62

Table 3.4 model table that the total numbers of three statements included in each subscale mental imagery out of fifteen statements. Table also indicates the model of total score and averages of each subscale

Note: Code of sub variables such as mental Imagery **MI**, Self rating as **SR**, Perceived Rating as **PR** and Discrepancy and **D**.

Test of performance strategies

The test of performance strategies is a tool for measuring athletes in both training (**Appendix IV**) and competitive situations. (**Appendix V**) Based on strategies each subscale measures each individual athlete and team. The test of performance strategy in studies has good content and factor the test of performance strategies among athletes has good stability and internal reliability.

Table 3.5

Practice subscales key of performance strategies

Sl No	Sub Variables	Statement Numbers			
1.	Goal setting	1	37	53	58(R)
2.	Emotional Control	20	39	60	61
3.	Automaticity	10	23	29	48
4.	Relaxation	5	6	15	27
5.	Self-talk	2	16	47	51
6.	Imagery	3	12	42	64
7.	Attention Control	4(R)	19	45	50(R)
8.	Activation	35	38	44	49

Table 3.5 clearly indicates the total numbers of questions included in each subscale of performance strategies training along with indicating the questions of scoring in reverse order.

Note: The **R** indicates the reverse order of scoring

Table 3.6

Model excel calculation of performance strategies training

Players	No: Statement	Score of Statement	Maximum Marks	Secured Marks	SR	PR	D
Total	32	5	160	160	10	10	0
PST I	4	5	20	19	9.5	9	4.5
PST 2	4	5	20	18	9	8	8
PST 3	4	5	20	17	8.5	7	10.5
PST 4	4	5	20	16	8	6	12
PST 5	4	5	20	15	7.5	5	12.5
PST 6	4	5	20	14	7	4	12
PST 7	4	5	20	13	6.5	3	10.5
PST 8	4	5	20	12	6	2	8
Total	32	40	160	124	62	44	78
Average	7	5	20	15.5	7.75	5.5	9.75

Table 3.6 model table indicates that the total numbers of four statements included in each subscale of performance strategies training out of thirty two statements. Table also indicates the model of total marks and averages.

Note: Code of sub variables of Performance strategies training as **PST**, Self- rating as **SR**, Perceived Rating as **PR** and Discrepancy and **D**.

Table 3.7

Competition subscales performance strategies

SI No	Sub Variables	Question Numbers			
1.	Goal setting	2	22	26(R)	46
2.	Emotional Control	24	31	62	63
3.	Automaticity	11	30	41	54
4.	Relaxation	8	17	25	43
5.	Self-Talk	21	33	36	57
6.	Imagery	18	34	55	59
7.	Positive Thinking	9(R)	14(R)	32	56(R)
8.	Activation	13	28	40	52

Table 3.7 clearly indicates the total numbers of questions included in each subscale along with indicating the questions of scoring in reverse order.

Note: The **R** indicates the reverse order of scoring

Table 3.8

Model excel calculation of performance strategies competition

Players	No: Statement	Score of Statement	Maximum Marks	Secured Marks	SR	PR	D
Total	32	5	160	160	10	10	0
PSC 1	4	5	20	19	9.5	9	4.5
PSC 2	4	5	20	18	9	8	8
PSC 3	4	5	20	17	8.5	7	10.5
PSC 4	4	5	20	16	8	6	12
PSC 5	4	5	20	15	7.5	5	12.5
PSC 6	4	5	20	14	7	4	12
PSC 7	4	5	20	13	6.5	3	10.5
PSC 8	4	5	20	12	6	2	8
Total	32	40	160	124	62	44	78
Average	7	5	20	15.5	7.75	5.5	9.75

Table 3.8 shows that the total numbers of four statements included in each subscale of performance strategies competition out of thirty two statements. Table also indicates the model of total marks and averages.

Note: Code of sub variables of Performance strategies competition as **PSC**, Self rating as **SR**, Perceived Rating as **PR** and Discrepancy and **D**

Statistical techniques used

1. Descriptive profile

In the case of a descriptive profile based on the various results such as mean standard deviations, lower quartile deviation and upper quartile deviation was considered for both athletic and soccer groups.

2. Analysis of variance

The analysis of variance results indicating the variance among groups such as athletic and soccer groups. One way ANOVA was calculated in psychological variables in perceived, self and discrepancy value. The result indicates the mean differences and post hoc analysis of athletics and soccer groups.

3. Factor analysis


The factor analysis indicates the prominent factors based on perceived, self and discrepancy value. The correlation matrix analysis and its principal component analysis un-rotated factor loading were used.

4. Performance profiling

The performance profiling results based on mean value of descriptive profile of perceived rating and self-rating. The results indicate ranking in the form of perceived rating, self-rating and discrepancy of both athletic and soccer groups. The performance profiling table indicates the ranking of psychological variables based on the lowest value of discrepancy of each group such as sprinters, jumpers and long distance runners from athletic groups and defenders, midfielders and strikers from soccer groups. The results were sorted with excel formula for the purpose of ranking. The sub variables are coded for the easy identification of psychological variables.

Performance profiling assessment mainly based on mathematical calculation of perceived rating, self-rating. The result leads to a discrepancy value the formula

was = **(10-ASA) (APA)**. Here ASA stands for the athletes self-rating. The self-rating was the result of questionnaire scoring converted into decimals forms. APA stands for the perceived rating of athletes that was the own predicted decimal scoring of each player based on the variables and its subscales. The final results of performance profiling are sorted with excel such as best ten and last ten of athletic group, soccer group and both athletic and soccer group. The plagiarism checking results attached **(Appendix VI- IX)**



Chapter IV

**ANALYSIS OF DATA
AND RESULT OF STUDY**

Chapter IV

ANALYSIS OF DATA AND RESULTS OF THE STUDY

Analyzing the collected data is an important and exciting step in the performance analysis. By doing in-depth data analysis to identify relationships between various data that will help you understand more and guide towards better decisions.

The purpose of the study was to analyse the selected psychological variables among athletic and soccer groups. The data collected on psychological variables such as mental toughness, mental imagery and performance strategies of both perceived and self-rating. Research scholar drawn the following objectives for the study; to assess the psychological analysis of variance among athletes and soccer group, to find out the prominent psychological factors of both athletics and soccer group, to find out the discrepancy value of psychological skills of both athletes and soccer group

Findings

The following results are categorized based on the variables such as mental toughness, mental imagery and performance strategies. The two groups such as athletics and soccer subdivided into three sub groups. In athletics there were sprinters, jumpers and long distance runners. In the case of soccer the group was divided such as defenders, midfielders and strikers.

For the purpose of analyzing data here the investigator categorized the results descriptive profile, analysis of variance, factor analysis, and performance profiling calculations. The result from the descriptive profile indicates the mean, standard deviation, lower quartile and upper quartile deviation of psychological variables such as mental toughness, mental imagery and performance strategies. For the purpose of getting the performance profiling discrepancy value the results categorized perceived rating and self-rating.

Mental toughness of athletic group

Table 4.1

Descriptive profile and ANOVA of mental toughness perceived rating of athletes

Group	Sprinters			Jumpers			Long distance			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Rebound Ability	7.70	7.00	9.00	7.60	6.00	9.00	7.05	6.00	9.00	2,57	0.53	0.59
Ability to Handle pressure	1.42			2.11			2.70					
Concentration Ability	6.90	6.00	8.00	6.90	6.00	8.00	6.40	3.50	9.00	2,57	0.37	0.69
Level of Confidence	1.25			2.00			2.84					
Deal with Motivation	7.05	6.00	8.00	6.95	6.00	8.00	6.45	3.75	8.75	2,57	0.48	0.62
	1.23			1.76			2.87					
	7.55	6.25	9.00	7.20	6.00	9.00	6.45	4.25	8.75	2,57	1.30	0.28
	1.67			1.82			2.91					
	7.60	6.25	8.75	8.10	7.00	10.00	6.65	3.75	9.00	2,57	1.88	0.16
	157			2.25			3.13					

**The mean difference was significant at the 0.05 level*

The table 4.1 shows the descriptive profile of mental toughness perceived rating of athletic groups such as sprinters, jumpers and long distance runners. The obtained F values from ANOVA are not significant differences because the variables are lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes similar mental toughness in perceived rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig**.

Figure 4.1

Mean comparison on mental toughness perceived rating of athletes

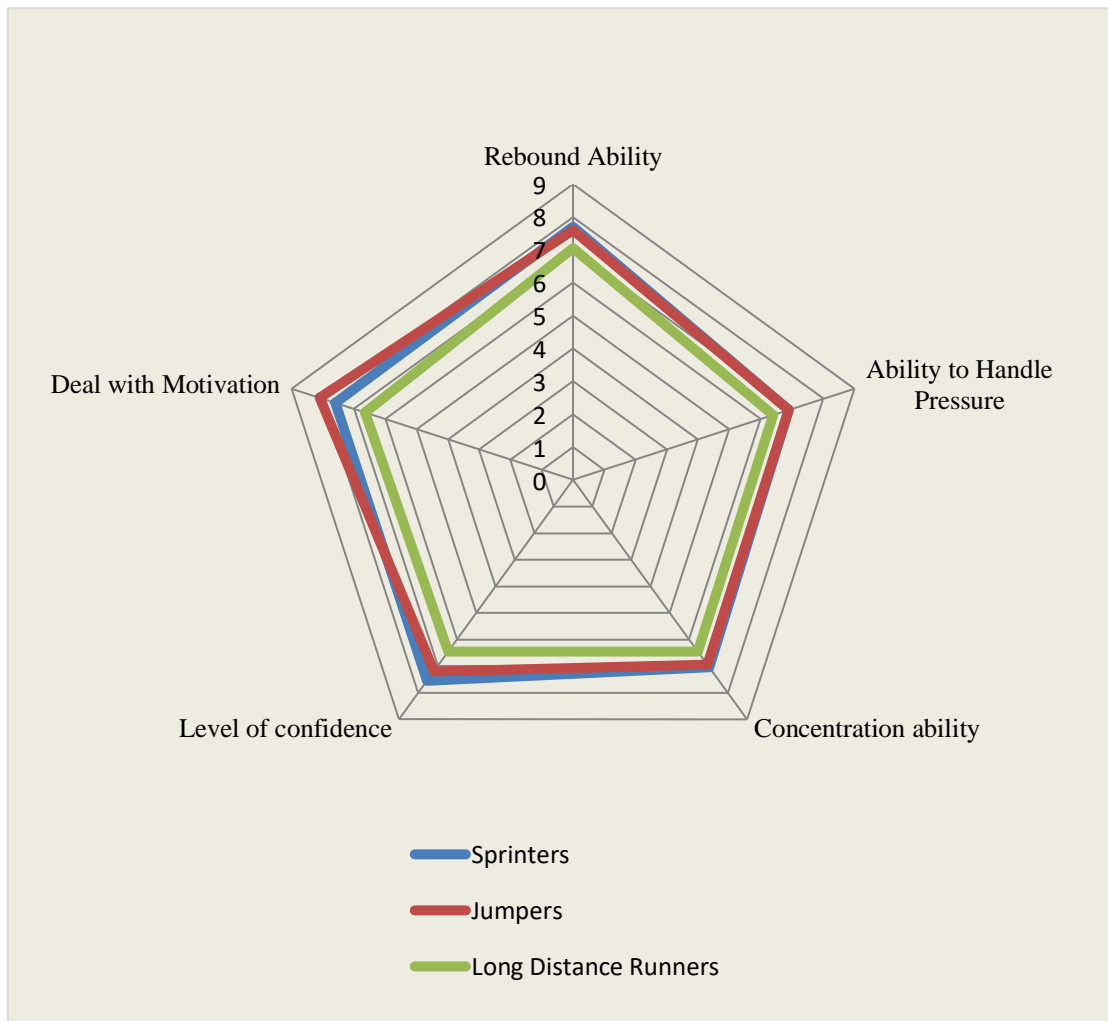


Table 4.2

Descriptive profile and ANOVA of mental toughness self-rating of athletes

Group	Sprinters			Jumpers			Long distance			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Rebound Ability	4.00	3.00	5.00	4.55	3.00	6.75	5.15	3.00	7.00	2,57	1.47	0.24
	2.13			2.11			0.48					
Ability to Handle	4.50	3.00	6.50	5.65	3.50	7.00	4.70	3.00	7.00	2,57	1.81	0.17
Pressure	1.93			1.87			0.51					
Concentration	5.15	3.00	7.00	4.05	3.00	5.00	4.85	3.00	7.00	2,57	1.49	0.24
ability	1.81			2.24			0.49					
Level of	5.80	5.00	7.00	5.50	5.00	7.00	6.35	5.00	7.00	2,57	1.09	0.34
confidence	1.64			1.76			0.47					
Deal with	6.80	5.00	8.00	6.75	5.00	8.00	7.35	7.00	8.00	2,57	0.88	0.42
Motivation	1.44			1.97			0.28					

**The mean difference was significant at the 0.05 level*

The table 4.2 shows a descriptive profile of mental toughness self-rating of athletic groups such as sprinters, jumpers and long distance runners. The obtained F values are not significant differences because variables are lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar mental toughness in self-rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig.**

Figure 4.2

Descriptive profile of mental toughness self-rating of athletes

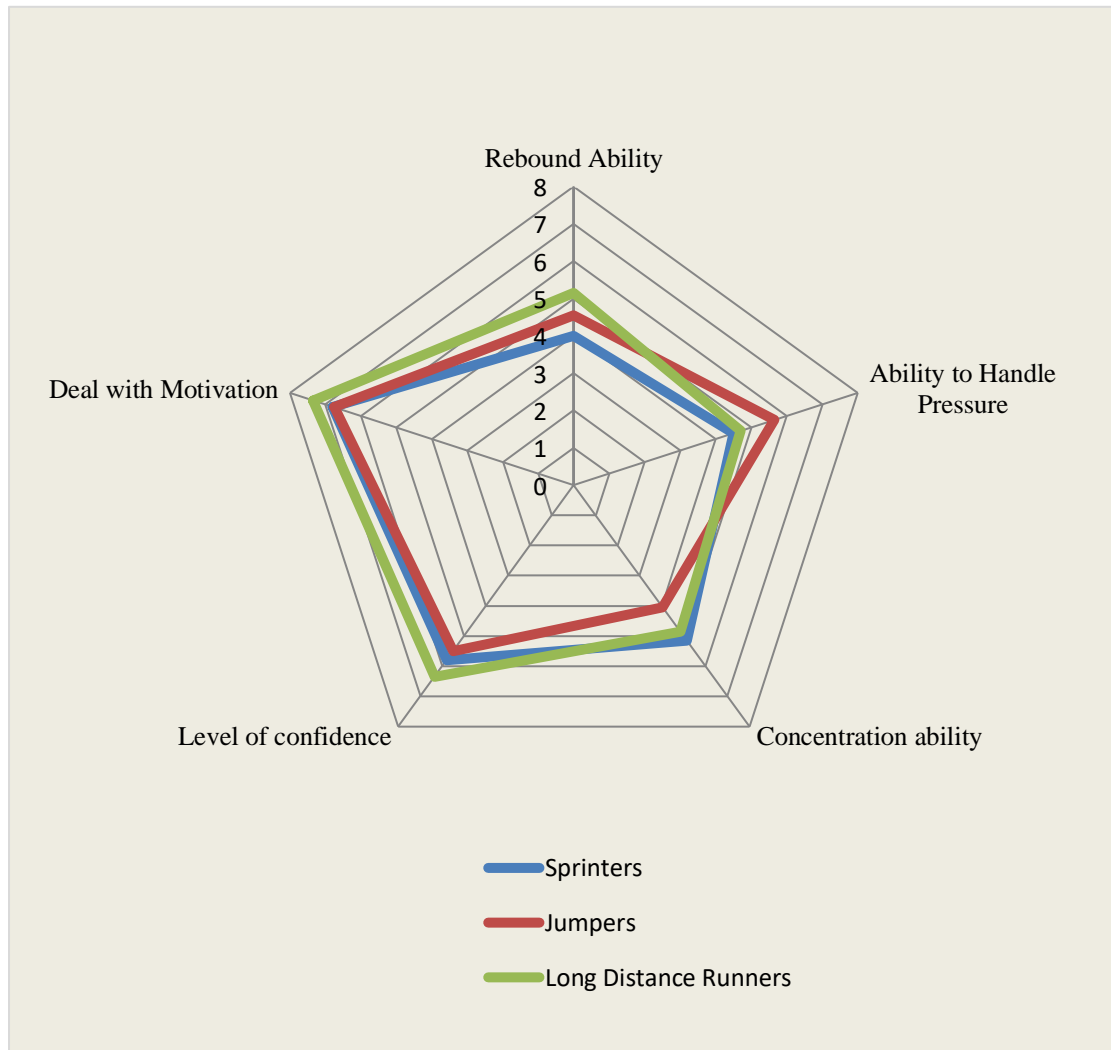


Table 4.3

Descriptive profile and ANOVA of mental toughness discrepancy value of athletes

Group	Sprinters			Jumpers			Long distance			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Rebound Ability	46.35	31.25	56.75	41.30	30.00	58.25	35.40	14.75	52.25	2,57	1.31	0.28
Ability to Handle pressure	21.53			20.65			22.02					
Concentration Ability	38.25	24.75	51.50	30.45	16.25	46.50	32.15	13.50	49.00	2,57	1.05	0.36
Level of Confidence	15.34			16.39			21.48					
Deal with Motivation	34.20	24.00	40.00	41.90	30.75	53.00	31.25	13.75	49.25	2,57	1.85	0.17
	15.28			19.83			18.89					
	32.15	23.50	43.75	33.30	24.00	43.75	24.15	8.25	29.25	2,57	1.66	0.20
	13.28			16.91			20.83					
	24.15	15.50	32.25	25.45	12.75	38.75	18.40	4.00	29.25	2,57	1.33	0.27
	11.45			17.54			13.96					

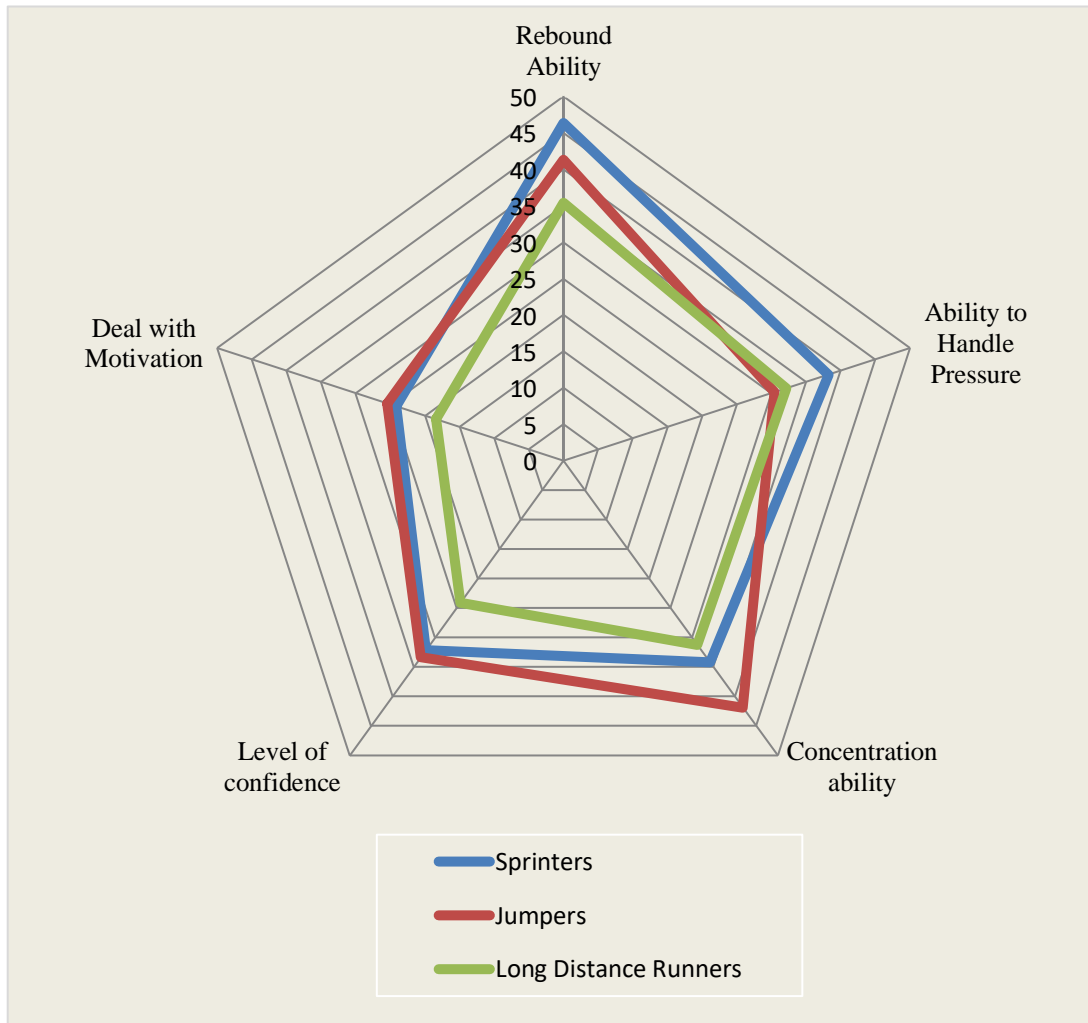
**The mean difference was significant at the 0.05 level*

The table 4.3 shows a descriptive profile of mental toughness discrepancy value of athletic groups such as sprinters, jumpers and long distance runners. The obtained F values are not significant differences because the variables are lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes similar discrepancy values in mental toughness.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as *M*, standard deviation as *SD*, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom *df*, F values as **F** and level of significance as **Sig.**

Figure 4.3

Mean comparison on mental toughness discrepancy value of athletes



Mental imagery of athletic group

Table 4.4

Descriptive profile and ANOVA of mental imagery perceived rating of athletes

Group	Sprinters			Jumpers			Long distance			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	SD			SD			SD					
Skill imagery	7.30	6.00	8.00	6.95	6.00	8.00	5.80	5.00	7.00	2,57	3.58*	0.03
	1.30			2.06			2.09					
Strategy imagery	7.10	6.00	8.00	7.00	6.00	8.00	6.25	4.25	7.75	2,57	1.34	0.27
	1.29			1.78			2.20					
Goal imagery	7.85	7.00	9.00	7.55	7.00	9.00	7.30	7.00	9.00	2,57	0.49	0.62
	1.31			1.79			2.11					
Affect imagery	7.75	7.00	9.00	7.30	5.25	9.00	6.90	5.25	9.00	2,57	0.91	0.41
	1.41			2.25			2.22					
Mastery imagery	7.40	6.00	9.00	7.25	6.00	9.00	6.85	6.00	8.00	2,57	0.35	0.71
	2.01			2.55			1.87					

**The mean difference was significant at the 0.05 level*

The table 4.4 indicates a descriptive profile of mental imagery perceived rating of athletic groups such as sprinters, jumpers and long distance runners. The obtained F value 3.58 of skill imagery ability was significant because the sub variable greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar mental imagery ability except skill imagery ability in perceived rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig**.

Table 4.5

Analysis of variance of skill imagery ability of athletes in perceived rating

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Skill imagery	Between Groups	24.63	2	12.32	3.58*	0.03
	Within Groups	196.35	57	3.45		

Table 4.5 indicates the obtained F value of 3.58 was significant since it was greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are not similar in skill imagery ability in perceived rating.

Table 4.6

Post hoc analysis of skill imagery ability of athletes in perceived rating

Sprinters	Group mean		Mean Difference	Sig.
	Jumpers	Long distance		
7.30	6.95		0.35	0.55
7.30		5.80	1.50*	0.01
	6.95	5.80	1.15	0.06

**The mean difference was significant at the 0.05 level*

Table 4.6 indicates the post hoc analysis of the mean difference values of 1.50 when sprinters are compared with long distance runners proved significant since these p values were less than the significant level of 0.05.

Figure 4.4

Mean comparison on skill imagery ability of athletes in perceived rating

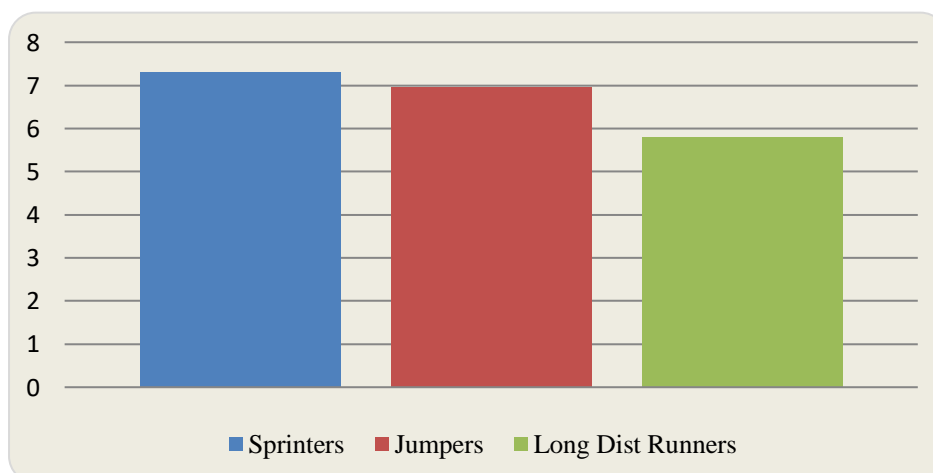


Figure 4.5

Mean comparison on mental imagery perceived rating of athletes

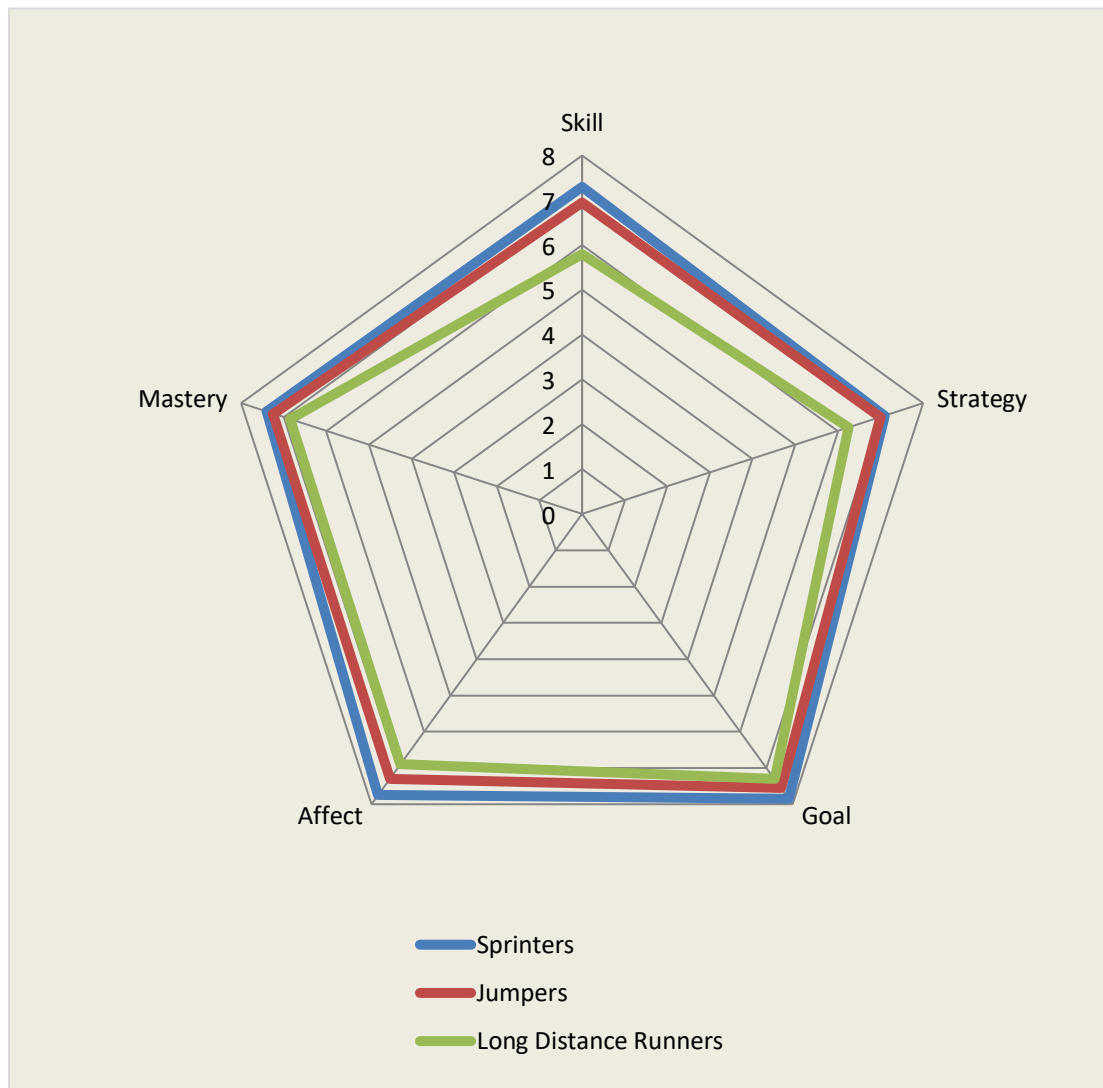


Table 4.7

Descriptive profile and ANOVA of mental imagery self-rating of athletes

Group	Sprinters			Jumpers			Long distance			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Skill imagery	6.95	6.00	8.00	5.95	5.00	7.00	6.05	5.00	7.75	2,57	2.77	0.07
	1.19			1.54			1.67					
Strategy imagery	6.55	5.25	7.75	5.95	4.25	7.75	5.35	4.25	6.00	2,57	2.33	0.11
	1.32			1.90			1.98					
Goal imagery	6.95	6.25	8.00	6.00	4.00	7.00	6.65	5.25	8.00	2,57	1.35	0.27
	1.67			2.00			1.93					
Affect imagery	7.35	7.00	8.00	6.85	6.00	8.00	6.80	5.00	8.00	2,57	0.59	0.56
	1.39			1.69			2.14					
Mastery imagery	7.05	6.25	8.00	6.35	5.00	7.75	5.80	4.00	7.75	2,57	1.96	0.15
	1.76			1.76			2.42					

**The mean difference was significant at the 0.05 level*

The table 4.7 shows a descriptive profile of mental imagery self-rating of athletic groups such as sprinters, jumpers and long distance runners. The obtained F values are not significant differences because variables are lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar in mental imagery ability in self-rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig.**

Figure 4.6

Mean comparison on mental imagery self-rating of athletes

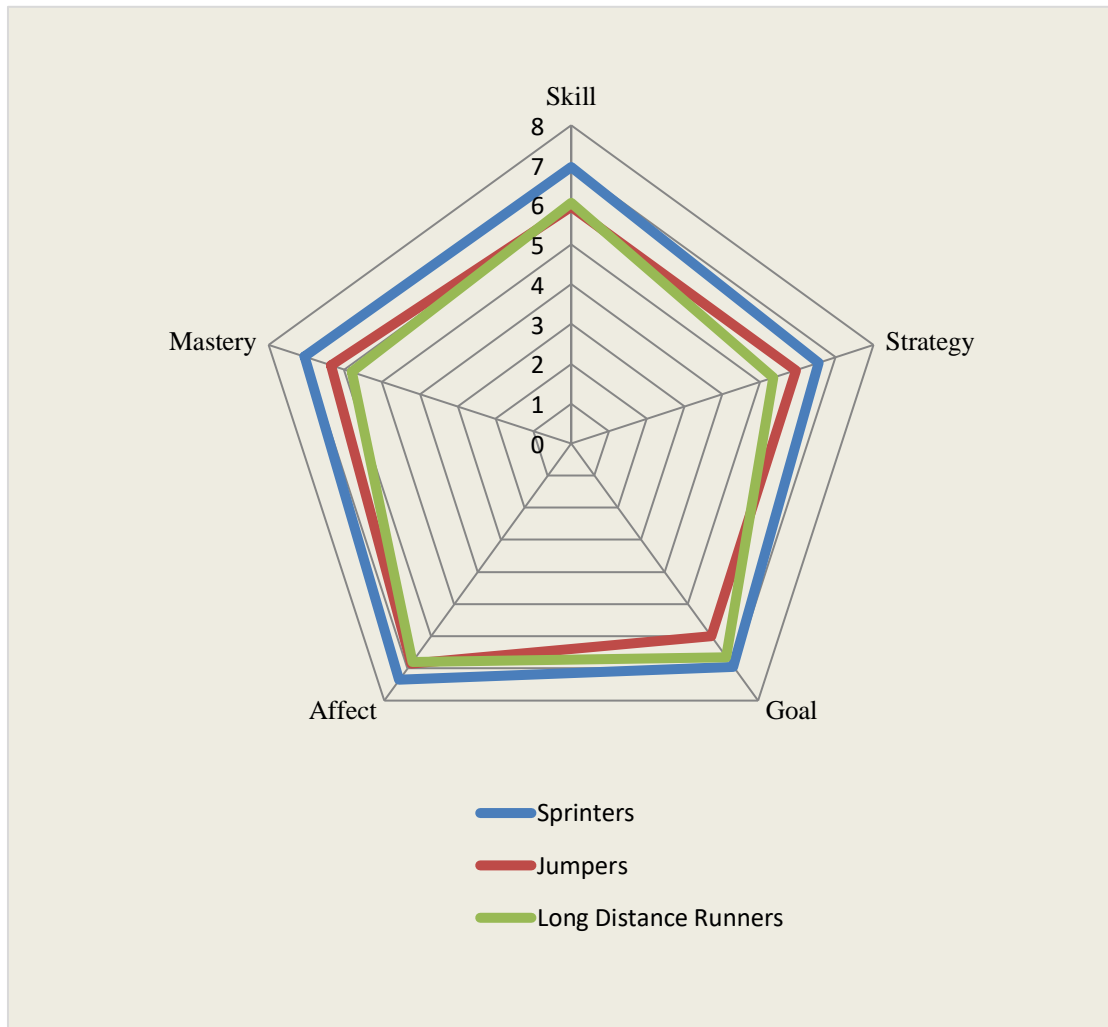


Table 4.8

Descriptive profile and ANOVA of sports imagery discrepancy value of athletes

Group	Sprinters			Jumpers			Long distance			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Skill imagery	21.85	17.00	26.75	26.80	17.75	36.25	21.40	13.00	26.75	2,57	1.95	0.15
	7.01			10.95			10.32					
Strategy imagery	25.00	15.50	33.00	27.25	15.50	38.00	28.55	19.00	38.50	2,57	0.41	0.66
	10.93			13.23			13.15					
Goal imagery	24.30	14.75	32.25	30.05	17.75	40.00	24.90	11.25	36.75	2,57	0.93	0.40
	13.77			14.90			15.25					
Affect imagery	21.30	17.00	25.50	21.90	13.25	29.75	21.30	11.00	32.25	2,57	0.02	0.98
	9.27			11.30			12.82					
Mastery imagery	22.05	13.25	30.00	24.40	15.00	33.00	27.80	17.75	38.50	2,57	1.01	0.37
	13.12			11.06			14.14					

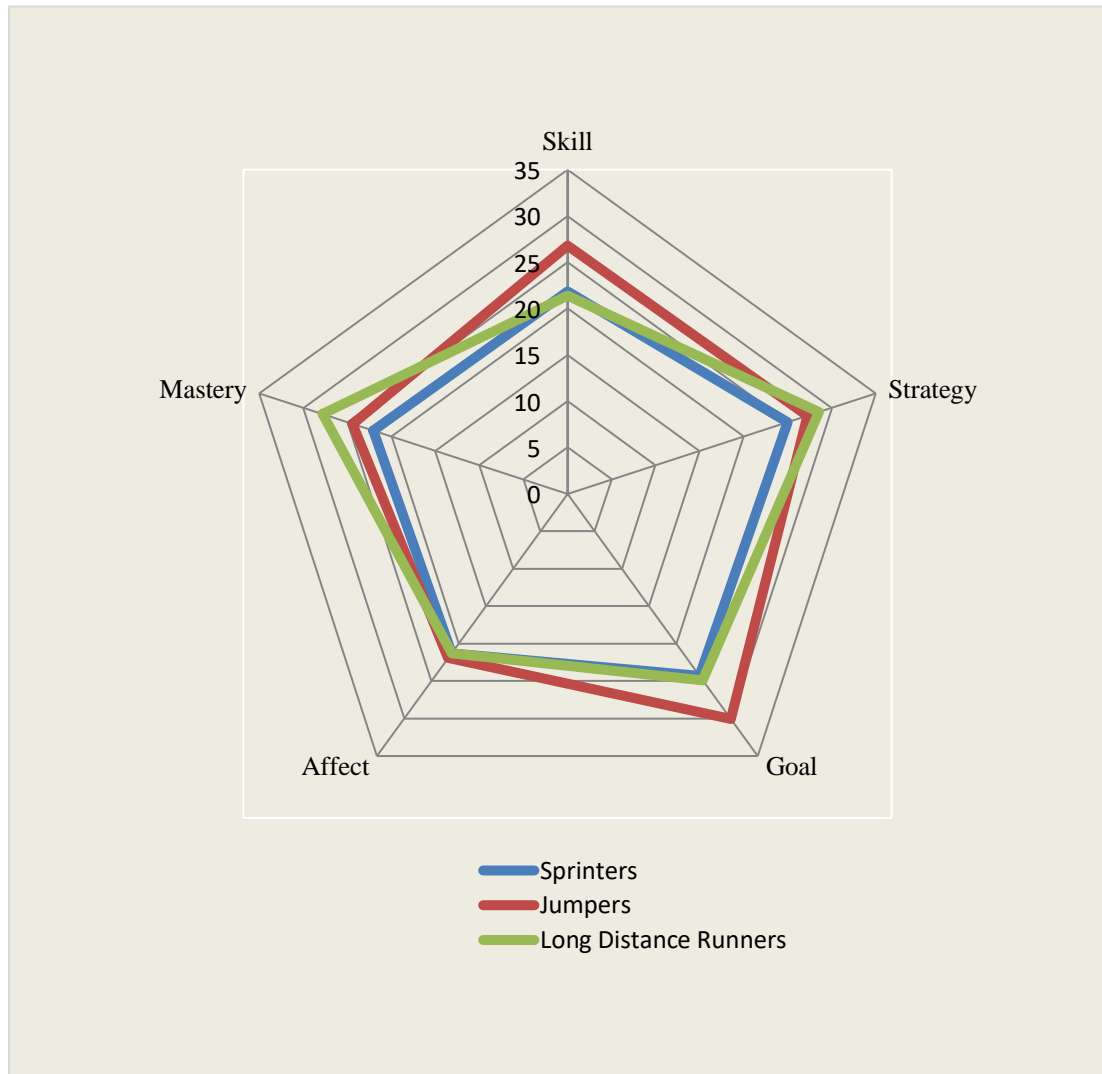
**The mean difference was significant at the 0.05 level*

The table 4.8 shows a descriptive profile of mental imagery discrepancy value of athletic groups such as sprinters, jumpers and long distance runners. The obtained F values are not significant because the variables are lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes similar discrepancy value in mental imagery ability.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as *M*, standard deviation as *SD*, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom *df*, F values as **F** and level of significance as **Sig.**

Figure 4.7

Mean comparison on mental imagery discrepancy value of athletes



Training performance strategies of athletic group

Table 4.9

Descriptive profile and ANOVA of training strategies perceived rating of athletes

Group	Sprinters			Jumpers			Long distance			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Goal Setting	6.05	5.00	7.00	5.75	5.00	6.00	5.85	5.00	6.00	2,57	0.47	0.63
	1.15			1.02			0.81					
Emotional Control	6.25	6.00	7.00	6.45	6.00	7.00	6.55	6.00	7.00	2,57	0.71	0.50
	1.02			0.83			0.51					
Automaticity	6.20	6.00	7.00	6.00	6.00	6.75	5.85	5.00	6.75	2,57	0.55	0.58
	1.24			1.03			0.88					
Relaxation	5.40	5.00	6.00	6.35	6.00	7.00	6.00	5.25	6.75	2,57	5.80*	0.01
	0.94			0.99			0.73					
Self-Talk	5.85	5.25	6.00	6.40	6.00	7.00	6.30	6.00	7.00	2,57	1.76	0.18
	1.04			1.05			0.86					
Imagery	5.55	5.00	6.00	6.10	6.00	7.00	5.95	6.00	6.00	2,57	2.11	0.13
	1.05			0.91			0.60					
Attention Control	5.55	5.00	6.00	6.00	5.00	7.00	5.85	5.25	6.00	2,57	1.21	0.31
	1.05			1.08			0.59					
Activation	5.20	4.00	6.00	5.10	4.00	6.00	5.60	5.00	6.00	2,57	1.11	0.34
	1.32			1.07			0.94					

**The mean difference was significant at the 0.05 level*

The table 4.9 indicates descriptive profile training strategies perceived rating of athletic groups such as sprinters, jumpers and long distance runners. The obtained F value 5.80 was significant because the sub variable greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar training strategies except relaxation in perceived rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig.**

Table 4.10

Analysis of variance of training relaxation perceived rating of athletes

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Relaxation	Between Groups	9.23	2	4.62	5.80*	0.01
	Within Groups	45.35	57	0.80		

Table 4.10 reveals that the obtained F value of 5.80 is significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar training relaxation in perceived rating.

Table 4.11

Post hoc analysis on training relaxation perceived rating of athletes

Sprinters	Group mean		Mean Difference	Sig.
	Jumpers	Long Distance		
5.40	6.35		-0.95*	0.00
5.40		6.00	-0.60*	0.04
	6.35	6.00	0.35	0.22

**The mean difference was significant at the 0.05 level*

Table 4.11 shows that the mean difference values of 0.95 when jumpers are compared with sprinters and the mean difference values of 0.60 when long distance runners are compared with sprinters proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.8

Mean comparison on training relaxation perceived rating of athletes

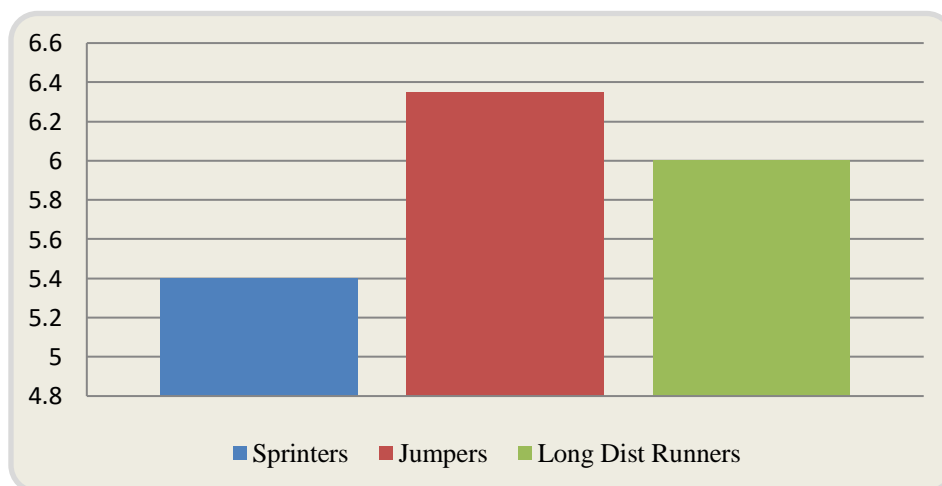


Figure 4.9

Mean comparison on training strategies perceived rating of athletes

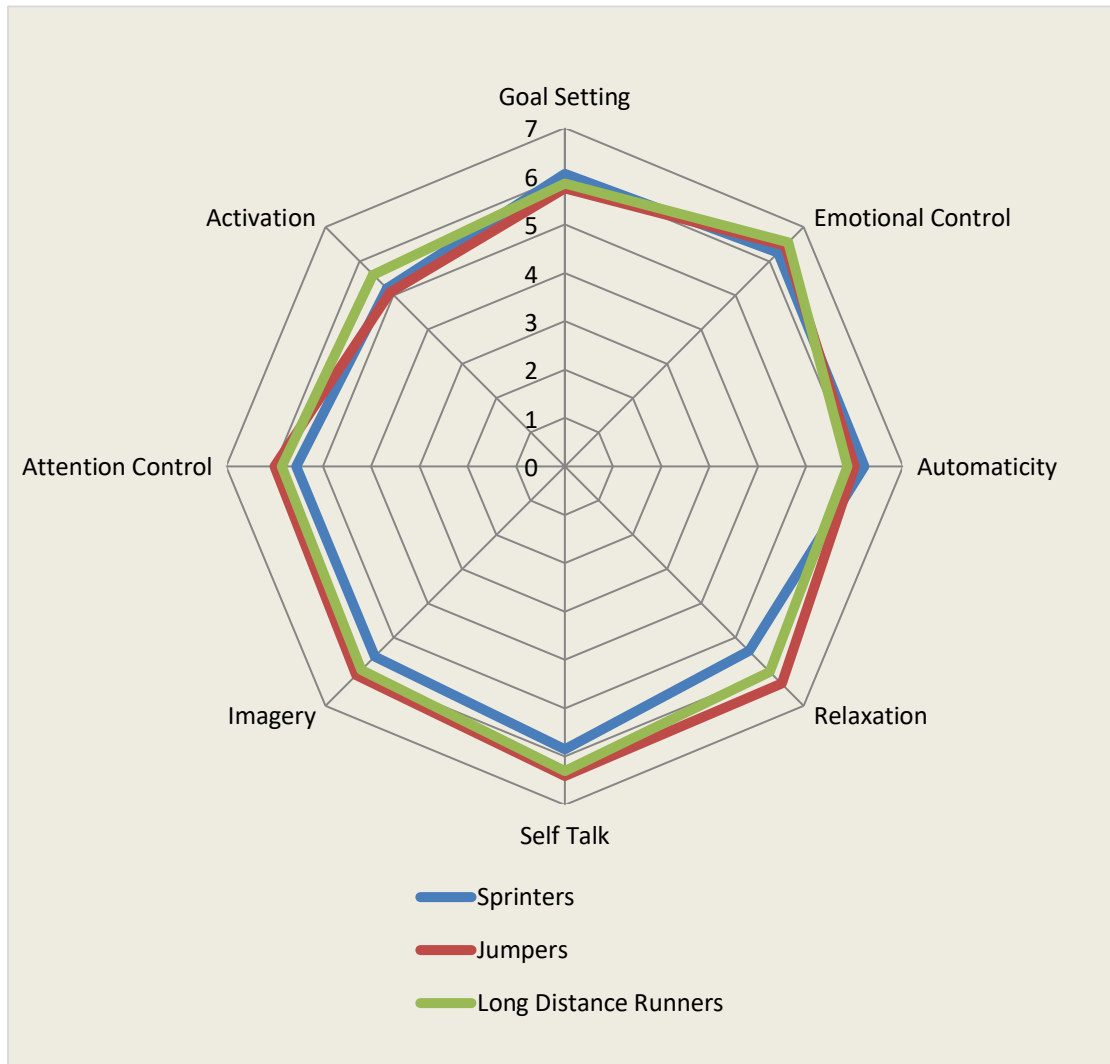


Table 4.12

Descriptive profile and ANOVA of training strategies self-rating of athletes

Group	Sprinters			Jumpers			Long distance			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	SD			SD			SD					
Goal Setting	6.25	5.00	6.00	6.05	5.00	6.00	6.15	5.00	6.00	2,57	0.34	0.71
	0.64			0.76			0.88					
Emotional Control	6.00	6.00	7.00	6.15	6.00	7.00	5.95	6.00	7.00	2,57	0.57	0.57
	0.65			0.59			0.60					
Automaticity	5.80	6.00	6.75	6.10	6.00	6.75	6.00	5.00	6.75	2,57	0.72	0.49
	0.70			0.85			0.86					
Relaxation	6.10	6.00	7.00	6.95	6.00	7.00	5.85	5.25	6.75	2,57	7.11*	0.00
	0.79			0.76			1.27					
Self-Talk	5.80	6.00	7.00	5.90	6.00	7.00	5.95	6.00	7.00	2,57	0.24	0.79
	0.70			0.72			0.69					
Imagery	6.10	6.00	7.00	6.00	6.00	7.00	6.05	6.00	6.00	2,57	0.13	0.88
	0.72			0.65			0.51					
Attention Control	6.40	5.00	7.00	5.95	5.00	7.00	6.25	5.25	6.00	2,57	1.69	0.19
	0.68			0.89			0.79					
Activation	5.95	4.00	6.00	5.85	4.00	6.00	6.05	5.00	6.00	2,57	0.33	0.72
	0.83			0.67			0.83					

**The mean difference was significant at the 0.05 level*

The table 4.12 indicates descriptive profile training strategies self-rating of athletic groups such as sprinters, jumpers and long distance runners. The obtained F value 7.11 was significant because the variable greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar training strategies except relaxation in self-rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig.**

Table 4.13

Analysis of variance of relaxation self-rating of athletes in training

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Relaxation	Between Groups	13.30	2	6.65	7.11*	0.00
	Within Groups	53.30	57	0.94		

Table 4.13 reveals that the obtained F value of 7.11 was significant since it is higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are not similar training relaxation in self-rating.

Table 4.14

Post hoc analysis on relaxation self-rating of athletes in training

Sprinters	Group mean Jumpers	Long Distance	Mean Difference	Sig.
6.10	6.95		-0.85*	0.01
6.10		5.85	0.25	0.42
	6.95	5.85	1.10*	0.00

**The mean difference was significant at the 0.05 level*

Table 4.14 shows that the mean difference value of 1.10 when jumpers are compared with long distance runners and value of 0.85 jumpers compared with sprinters proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.10

Mean comparison on relaxation self-rating of athletes in training

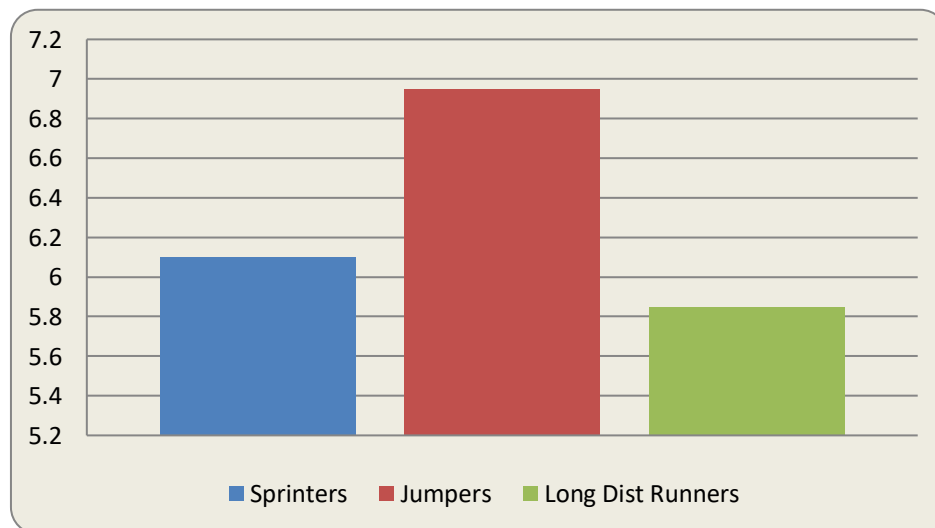


Figure 4.11

Mean comparison on training strategies self-rating of athletes

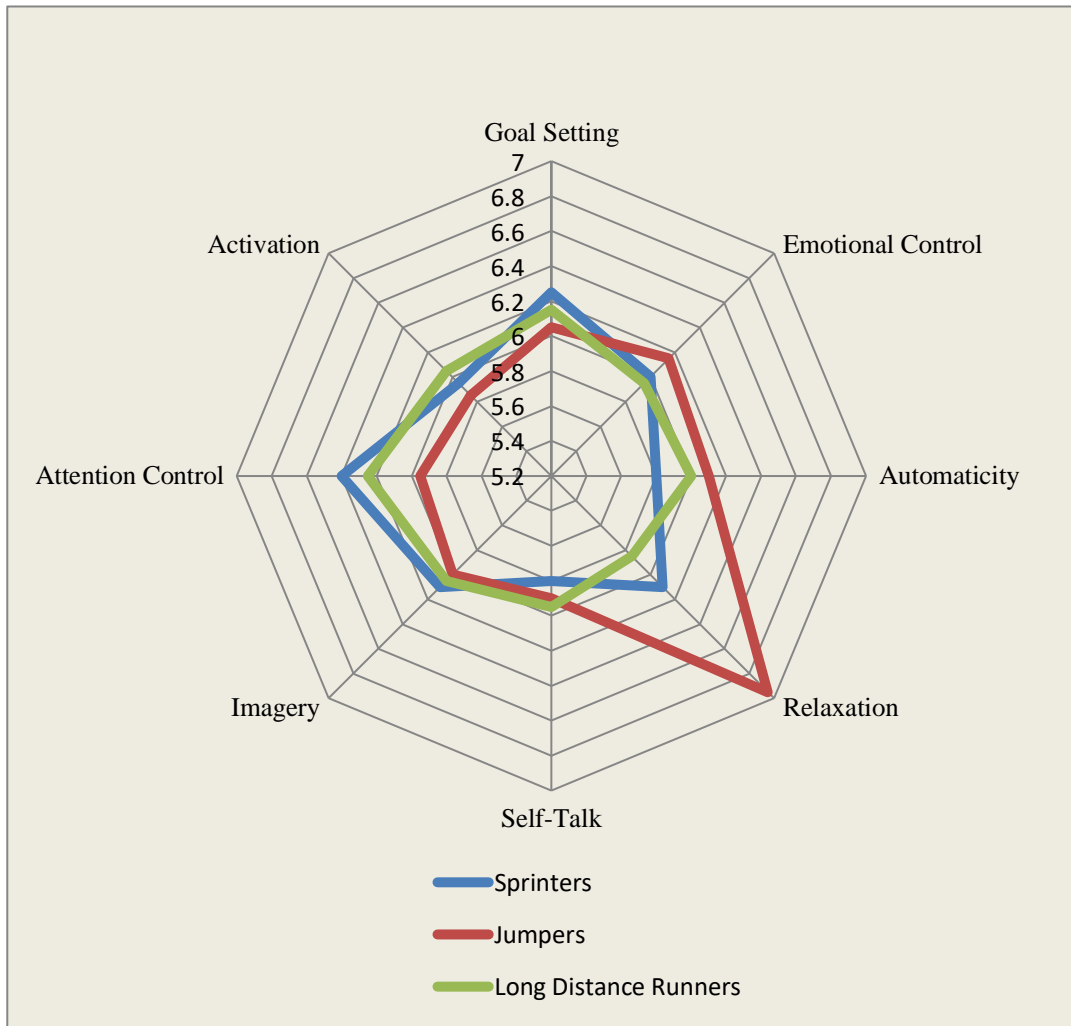


Table 4.15

Descriptive profile and ANOVA of training strategies discrepancy value of Athletes

Group	Sprinters			Jumpers			Long distance			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Goal Setting	27.00 8.75	20.00	32.25	24.20 5.63	20.25	27.75	24.00 5.53	21.00	28.75	2,57	1.22	0.30
Emotional Control	26.05 5.90	21.50	31.50	25.85 4.72	21.75	28.00	28.85 5.10	24.25	32.00	2,57	2.03	0.14
Automaticity	28.20 8.59	23.25	34.50	24.65 4.64	21.00	27.75	24.40 7.13	20.00	30.00	2,57	1.86	0.17
Relaxation	22.80 5.90	18.00	28.00	20.55 3.95	18.00	23.25	26.05 7.29	20.25	32.25	2,5	4.43*	0.02
Self-Talk	25.30 4.26	23.25	27.75	27.90 6.76	24.00	32.00	28.00 6.14	21.50	32.75	2,57	1.39	0.26
Imagery	25.65 5.92	21.00	29.50	24.90 6.66	23.00	28.00	25.05 3.02	23.00	27.00	2,57	0.11	0.90
Attention Control	19.25 5.77	15.00	22.50	25.35 6.49	20.25	29.50	24.20 5.60	18.75	28.00	2,57	5.91*	0.01
Activation	21.95 6.56	16.00	27.75	21.95 5.83	16.00	26.50	23.60 5.77	20.00	27.00	2,57	0.49	0.61

**The mean difference was significant at the 0.05 level*

The table 4.15 indicates descriptive profile training strategies discrepancy of athletic groups such as sprinters, jumpers and long distance runners. The obtained F values of 4.43 of relaxation and 5.91 of attention control were significant differences because the variables are greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar training strategies in discrepancy value except relaxation and attention control.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as *M*, standard deviation as *SD*, and lower quartile as *LQ* and upper quartiles as *UQ*. The ANOVA results coded such as degree of freedom *df*, F values as **F** and level of significance as **Sig.**

Table 4.16

Analysis of variance of training relaxation discrepancy of athletes

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Relaxation	Between Groups	305.83	2	152.92	4.43*	0.02
	Within Groups	1969.10	57	34.55		

Table 4.16 reveals that the obtained F value of 4.43 is significant since it is higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are not similar training relaxation in discrepancy value.

Table 4.17

Post hoc analysis on training relaxation discrepancy of athletes

Sprinters	Group mean		Mean Difference	Sig.
	Jumpers	Long Distance		
22.80	20.55		2.25	0.23
22.80		26.05	-3.25	0.09
	20.55	26.05	-5.50*	0.00

*The mean difference was significant at the 0.05 level

Table 4.17 shows that the mean difference values of 5.50 when Jumpers are compared with long distance runners are significant since these p values are higher than the significant level of 0.05. In the case of discrepancy the lowest mean value is best.

Figure 4.12

Mean comparison on training relaxation discrepancy of athletes

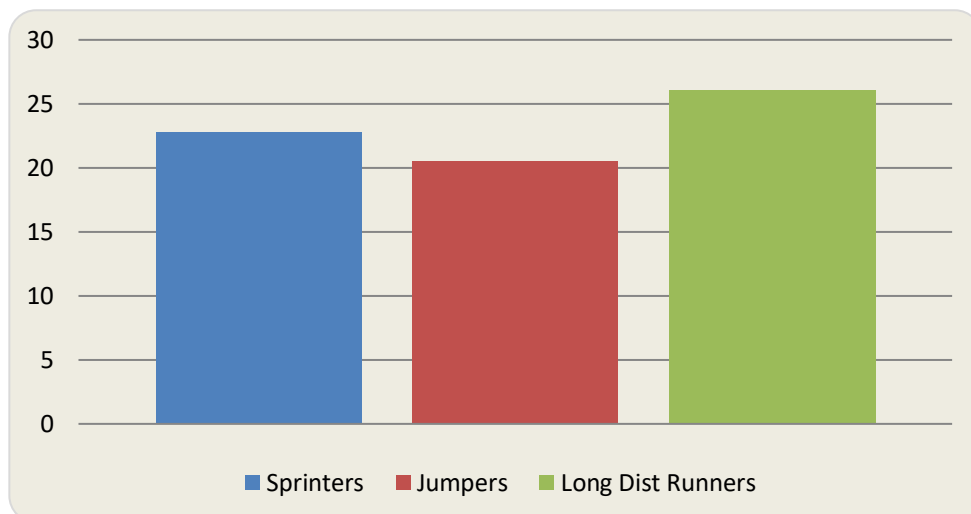


Table 4.18

Analysis of variance of training attention control discrepancy of athletes

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Attention control	Between Groups	420.23	2	210.12	5.91*	0.01
	Within Groups	2027.50	57	35.57		

Table 4.18 reveals that the obtained F value of 5.91 is significant since it is higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are not similar training attention control in discrepancy value.

Table 4.19

Post hoc analysis on training attention control discrepancy of athletes

Sprinters	Group mean		Mean Difference	Sig.
	Jumpers	Long Distance		
19.25	25.35		-6.10*	0.00
19.25		24.20	-4.95*	0.01
	25.35	24.20	1.15	0.54

*The mean difference was significant at the 0.05 level

Table 4.19 shows that the mean difference values of training attention control 6.10 when jumpers are compared with sprinters and the mean difference values of 4.95 when long distance runners compared with sprinters proved significant since these p values are higher than the significant level of 0.05.

Figure 4.13

Mean comparison on training attention control discrepancy of athletes

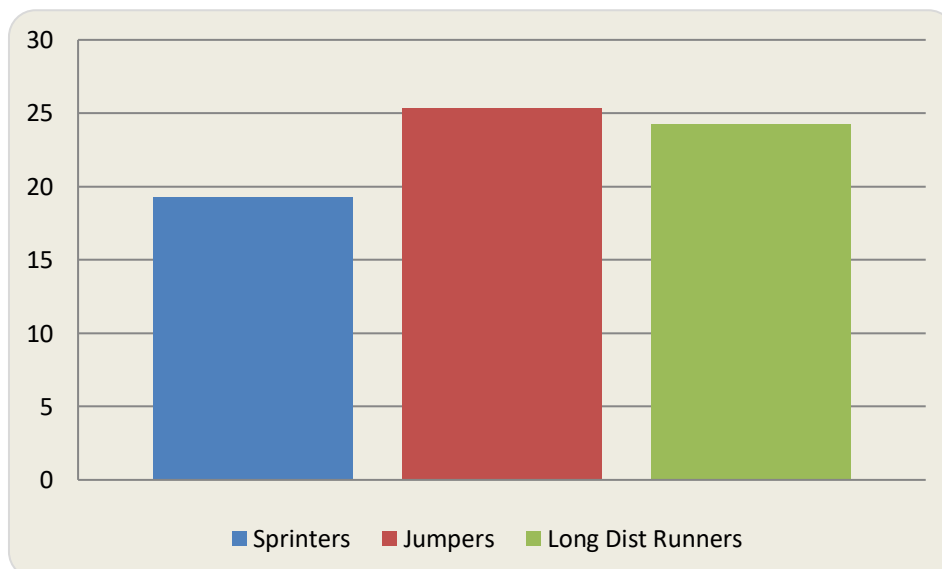
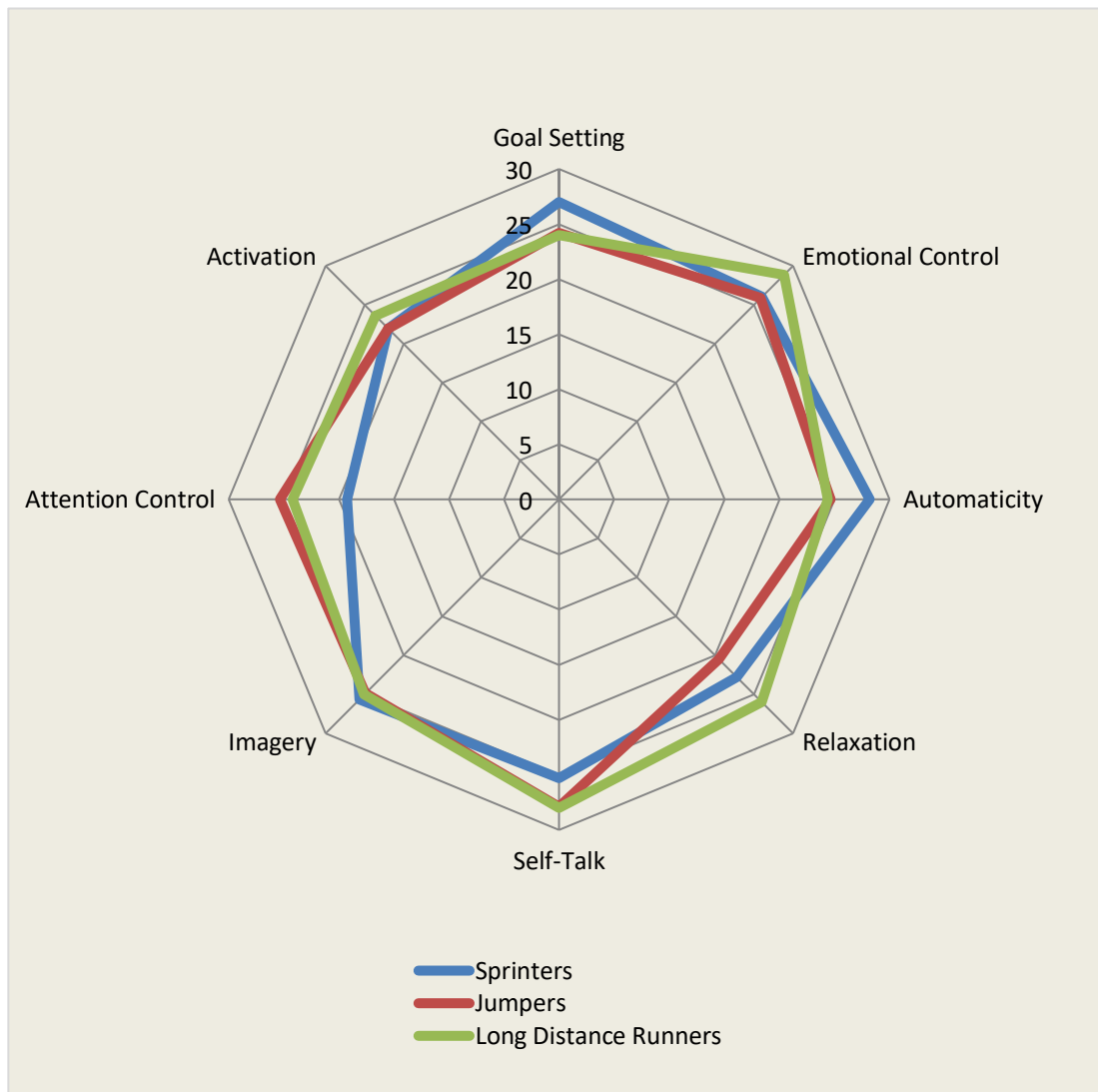


Figure 4.14

Descriptive profile of training strategies discrepancy value of athletes



Competition performance strategies of athletic group

Table 4.20

Descriptive profile and ANOVA of competition strategies perceived rating of athletes

Group	Sprinters			Jumpers			Long distance			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Goal Setting	6.55	6.00	7.75	6.40	6.00	7.00	6.25	6.00	7.00	2,57	0.36	0.70
	1.15			1.23			0.97					
Emotional Control	6.20	6.00	7.00	6.05	5.25	6.75	6.15	6.00	7.00	2,57	0.16	0.85
	0.95			0.83			0.75					
Automaticity	6.30	5.25	7.00	6.10	6.00	7.00	5.95	5.25	6.00	2,57	0.82	0.45
	1.03			0.85			0.69					
Relaxation	5.90	5.00	7.00	6.05	5.25	6.75	5.80	5.00	6.00	2,57	0.43	.65
	1.07			0.83			0.62					
Self-Talk	6.25	6.00	7.00	6.05	5.00	7.00	5.75	5.00	6.00	2,57	1.79	0.18
	0.97			0.83			0.72					
Imagery	5.90	5.00	6.00	5.85	5.00	6.00	5.80	5.25	6.00	2,57	0.09	0.91
	0.91			0.75			0.52					
Positive thinking	5.85	5.00	6.00	5.90	5.00	6.75	5.80	5.00	6.00	2,57	0.09	0.91
	0.81			0.79			0.62					
Activation	5.60	4.00	6.75	5.25	4.25	6.00	5.30	5.00	6.00	2,57	0.49	0.61
	1.54			1.12			0.86					

*The mean difference was significant at the 0.05 level

The table 4.20 shows descriptive profile competition strategies perceived ratings of athletic group such as sprinters, jumpers and long distance runners. The obtained F values are not significant because the variables are less than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar competition strategies in perceived rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as *M*, standard deviation as *SD*, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom *df*, F values as **F** and level of significance as **Sig.**

Figure 4.15

Mean comparison on competition strategies perceived rating of athletes

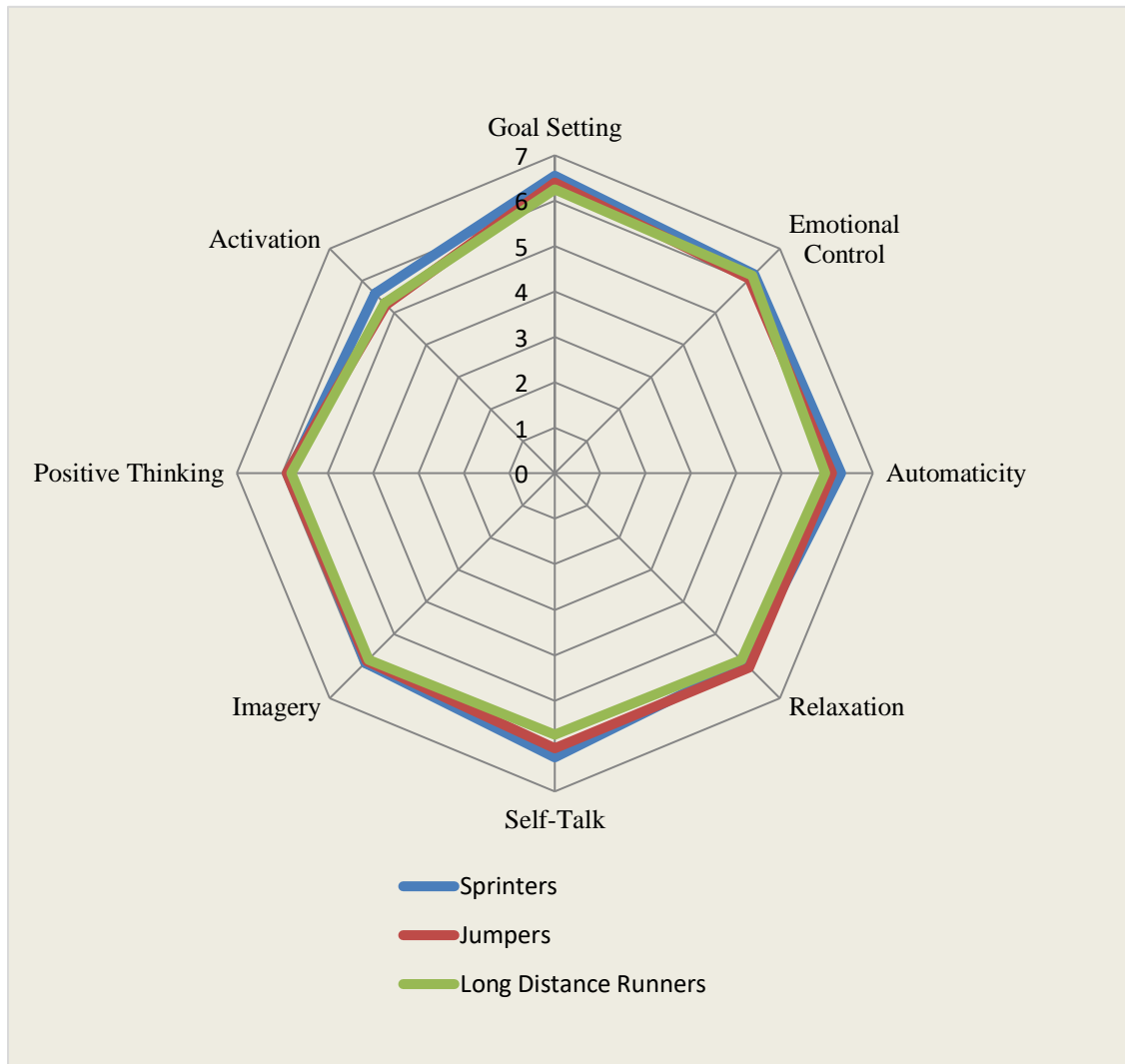


Table 4.21

Descriptive profile and ANOVA of competition strategies self-rating of athletes

Group	Sprinters			Jumpers			Long distance			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Goal Setting	6.00 1.08	5.00	7.00	6.30 0.86	6.00	7.00	6.35 0.93	6.00	7.00	2,57	0.77	0.47
Emotional Control	6.05 0.69	6.00	6.00	6.10 0.64	6.00	7.00	5.59 5.85	5.25	6.00	2,57	0.86	0.43
Automaticity	5.70 0.73	5.00	6.00	5.60 0.60	5.00	6.00	5.90 0.79	5.25	6.00	2,57	0.92	0.40
Relaxation	6.40 1.05	5.25	7.00	6.65 1.14	6.00	8.00	6.40 0.94	6.00	7.00	2,57	0.38	0.68
Self-Talk	6.05 0.51	6.00	6.00	6.00 0.65	6.00	6.00	5.75 1.02	5.00	6.75	2,57	0.90	0.41
Imagery	5.95 0.83	5.25	6.75	5.90 0.72	5.00	6.00	6.00 0.92	5.00	7.00	2,57	0.07	0.93
Positive thinking	7.00 1.12	6.00	8.00	6.55 0.83	6.00	7.00	6.85 0.75	6.00	7.00	2,57	1.26	0.29
Activation	6.20 0.77	6.00	7.00	5.85 0.88	5.00	7.00	6.10 0.55	6.00	6.00	2,57	1.17	0.32

*The mean difference was significant at the 0.05 level

The table 4.21 shows descriptive profile competition strategies self-rating of athletic groups such as sprinters, jumpers and long distance runners. The obtained F values are not significant because the variables are less than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar competition strategies in self-rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig.**

Figure 4.16

Mean comparison on competition strategies self-rating of athletes

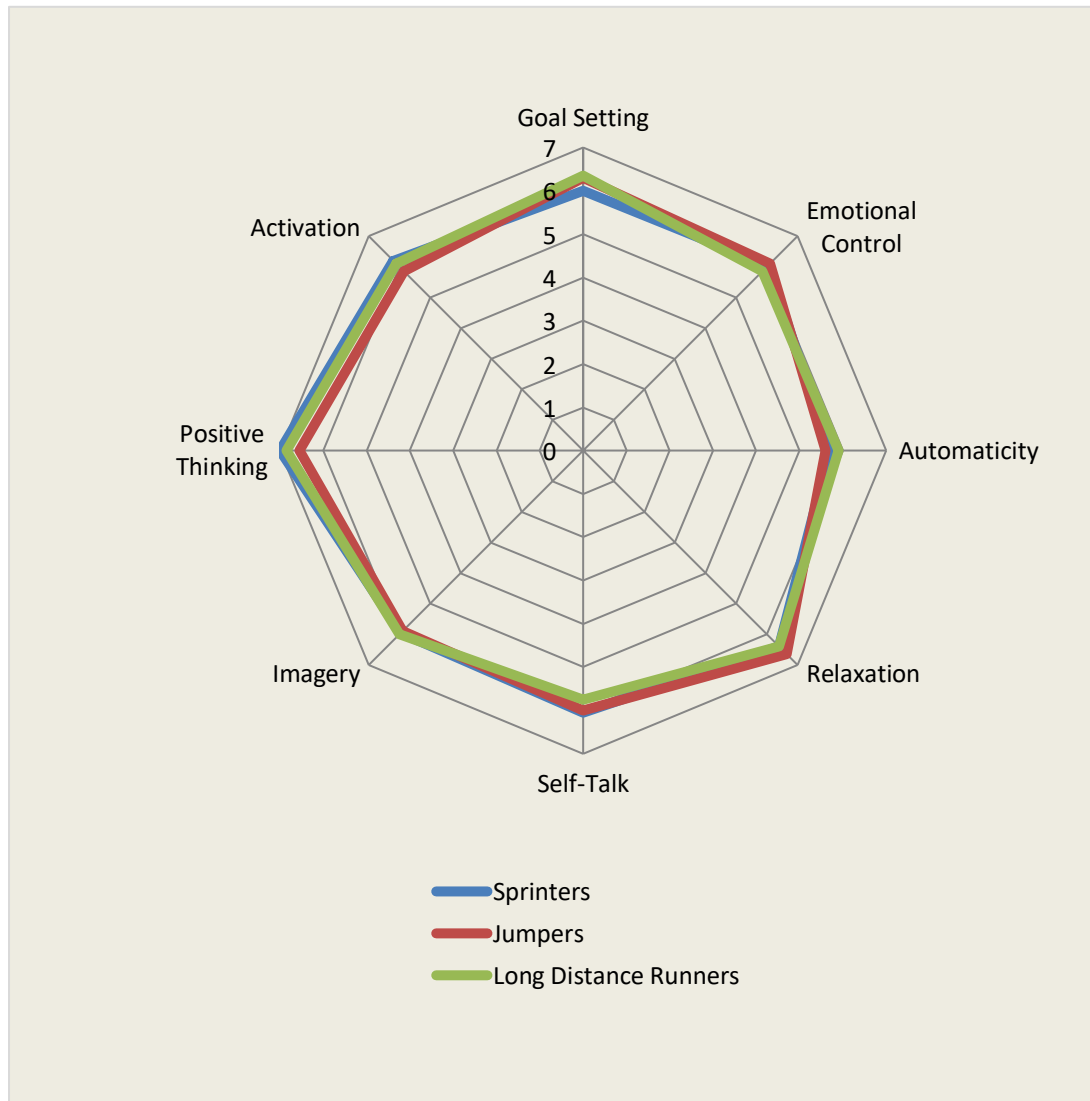


Table 4.22

Descriptive profile and ANOVA of competition strategies discrepancy of athletes

Group	Sprinters			Jumpers			Long distance			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	SD			SD			SD					
Goal Setting	27.00 8.75	20.00	32.25	25.45 6.84	21.00	31.50	25.00 7.46	21.00	31.00	2,57	0.37	0.69
Emotional Control	26.05 5.90	21.50	31.50	24.85 4.77	20.25	27.75	27.20 4.18	24.00	30.00	2,57	1.10	0.34
Automaticity	28.20 8.59	23.25	34.50	28.40 5.12	24.00	32.00	26.40 3.95	23.25	30.00	2,57	0.63	0.54
Relaxation	22.80 5.90	18.00	28.00	21.35 6.49	15.00	27.25	23.30 6.55	18.75	27.00	2,57	0.51	0.60
Self-Talk	25.30 4.26	23.25	27.75	25.60 4.63	21.75	29.50	25.70 6.48	20.00	30.00	2,57	0.03	0.97
Imagery	25.65 5.92	21.00	29.50	25.20 4.26	23.00	27.75	24.45 4.94	21.00	28.75	2,57	0.28	0.75
Positive thinking	19.25 5.77	15.00	22.50	22.75 5.45	18.00	27.00	20.15 4.21	17.25	22.50	2,57	2.46	0.09
Activation	21.95 6.56	16.00	27.75	23.80 7.13	18.50	27.75	22.35 5.16	18.50	27.00	2,57	0.47	0.63

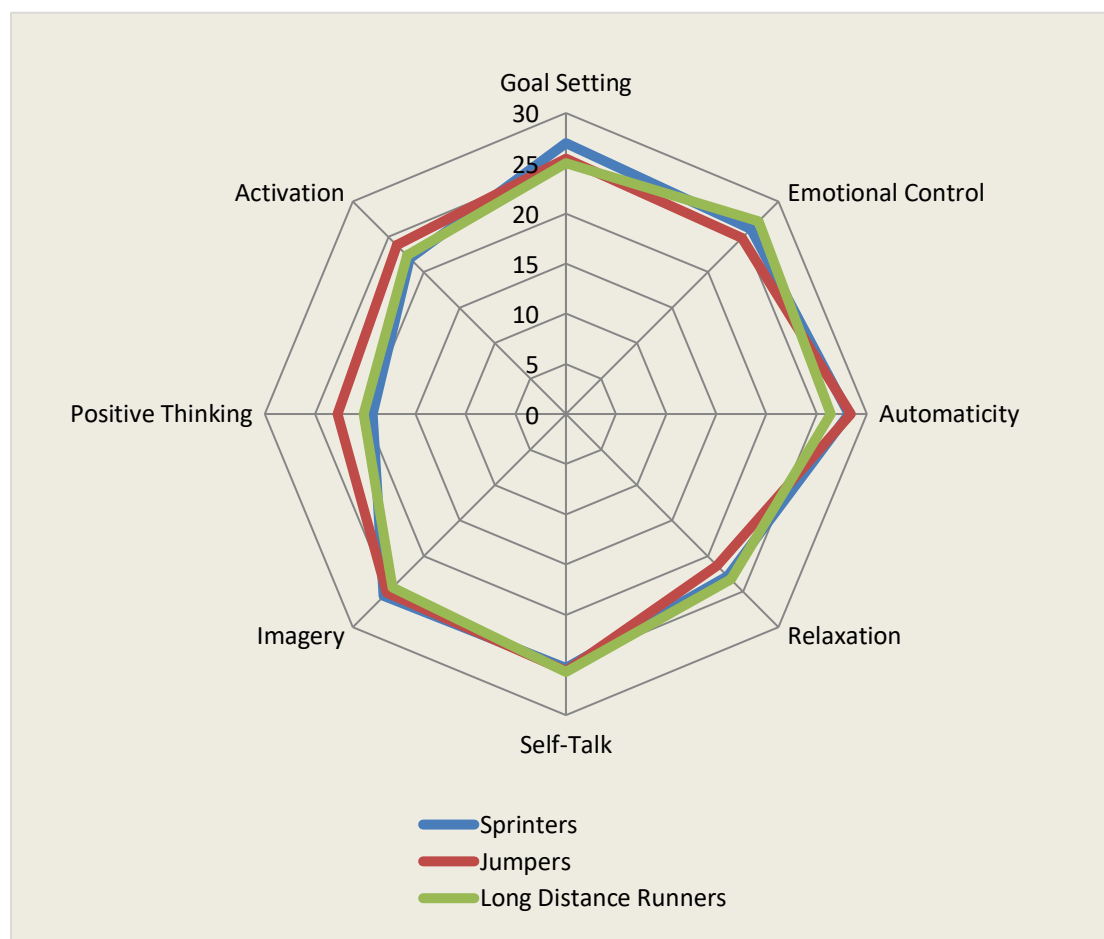
*The mean difference was significant at the 0.05 level

The table 4.22 shows descriptive profile competition strategies discrepancy value of athletic groups such as sprinters, jumpers and long distance runners. The obtained F values are not significant because the variables are less than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are similar competition strategies in discrepancy.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig.**

Figure 4.17

Mean comparison on competition strategies discrepancy of athletes



Discussion on findings among athletics group

The results of the study revealed the descriptive profile, analysis of variance, factor analysis and performance profiling of athletics groups. The mental toughness, mental imagery, performance strategy variables are compared based on the ratings such as perceived, self and discrepancy.

Descriptive profile

Descriptive profile of the athletic group clearly indicates the mental toughness, mental imagery, performance strategies both training and competition sub scale. The sub variables of mental toughness were rebound ability, ability to handle pressure, concentration ability, level confidence, and deal with motivation. In mental imagery

and sub scales such as skill imagery, strategy imagery, goal imagery, affect imagery and mastery imagery of sprinters, jumpers and long-distance runners. In the case of performance strategies training and competition sub scales such as goal setting, emotional control, automaticity, relaxation, self-talk, imagery, attention control and activation of sprinters, jumpers and long-distance runners. Here the seventh sub scale of performance strategies is different in the form of training sub scale it was attention control and competition sub scale positive thinking. The mean difference value indicates the differences among athletic groups such as sprinters, jumpers and long distance runners. The rating was subdivided such as perceived rating, self-rating and discrepancy value.

Analysis of variance

The results shows in the mental toughness variables and various ratings such as perceived rating, self-rating and discrepancy value of the sub scales such as rebound ability, ability to handle pressure, concentration ability, level confidence, and deal with motivation are not significant because the variables are lesser than the required value of 3.16 (d.f. of 2, 57), Thus showing all the athletic group are similar mental toughness in perceived rating, self-rating and discrepancy.

In the case of mental imagery, perceived rating of the skill imagery ability proved significant differences because the table value 3.58 is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are not similar in skill imagery ability in perceived rating. The post hoc results shows that the mean difference values of 1.50 when sprinters are compared with long distance runners proved to significant since these p values are higher than the significant level of 0.05. The rest of sub variables of mental imagery perceived rating such as strategy imagery, goal imagery and mastery imagery among athletes are similar mental Imagery in perceived rating, self-rating and discrepancy among athletic group.

Performance strategies training indicates the sub variable of relaxation in perceived rating and self-rating was proved significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are not similar relaxation ability in Performance strategies training perceived rating and self-rating. The post hoc results perceived rating shows that the mean difference values 0.95

when jumpers are compared with sprinters and the mean difference values of 0.60 when long distance runners are compared with sprinters. In the case of self-rating the post hoc results shows that the mean difference values 1.10 when jumpers are compared with long distance runners and the mean difference values of 0.85 when jumpers are compared with sprinters proved to significant differences because since these p values are higher than the significant level of 0.05. The rest of the sub variables such as goal setting, emotional control, automaticity, self-talk, imagery, attention control and activation are similar performance strategies training in perceived rating and self-rating except relaxation.

In the case of discrepancy value the results shows the sub variable of relaxation and attention control in performance strategies training discrepancy value was proved significant differences because the variable greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are not similar relaxation and attention control ability in performance strategies training the discrepancy value. The post hoc results in relaxation shows that the less mean difference value of jumpers 5.50 when compared with long distance runners and the less mean difference values of 6.10 when sprinters are compared with jumpers and the mean difference values of 4.95 when sprinters are compared with long distance runners was proved to significant since these p values are higher than the significant level of 0.05. The rest of the sub variables such as goal setting, emotional control, automaticity, self-talk, imagery, and activation are not significant since it is less than the required .Thus showing all the athletic groups are similar performance strategies training discrepancy value except relaxation and attention control.

Performance strategies competition reveals that perceived rating, self-rating and discrepancy of such as goal setting, emotional control, automaticity, relaxation, self-talk, imagery, positive thinking and activation are not significant since it is lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletic group are similar performance strategies competition in perceived rating self-rating and discrepancy.

Mental toughness of soccer group

Table 4.23

Descriptive profile and ANOVA of mental toughness perceived rating of soccer players

Group	Defenders			Mid fielders			Strikers			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Rebound ability	3.70	2.00	5.00	4.05	2.00	6.00	5.15	3.25	6.00	2,57	2.19	0.12
	2.25			2.39			2.21					
Ability to handle pressure	5.90	5.00	7.00	5.10	3.00	7.00	6.00	5.00	7.75	2,57	1.08	0.35
	1.71			2.57			2.00					
Concentration ability	5.85	4.00	8.00	5.70	4.25	6.75	5.85	4.25	7.75	2,57	0.04	0.96
	2.11			1.81			1.98					
Level of confidence	6.45	5.00	8.00	5.75	4.25	7.00	6.20	5.00	8.00	2,57	0.64	0.53
	2.16			11.74			2.02					
Deal with motivation	6.85	5.00	9.00	6.20	4.25	8.00	5.70	4.25	7.00	2,57	1.21	0.31
	2.32			2.65			2.03					

*The mean difference was significant at the 0.05 level

The table 4.23 shows the descriptive profile of mental toughness and perceived rating of soccer groups such as defenders, midfielders and strikers. The obtained F values are not significant because the variables are lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players similar mental toughness in perceived rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as ***M***, standard deviation as ***SD***, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom ***df***, F values as **F** and level of significance as **Sig.**

Figure 4.18

Mean comparison on mental toughness perceived rating of soccer players

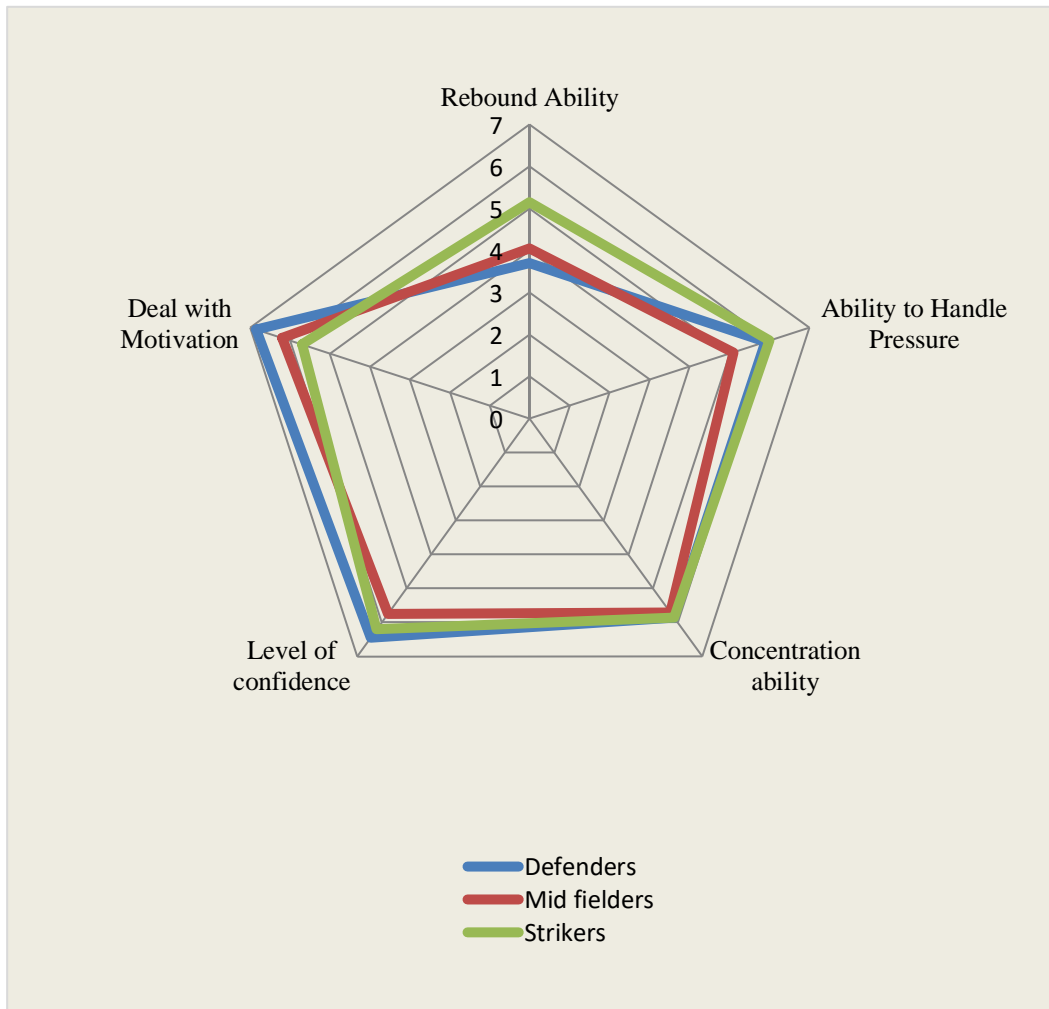


Table 4.24

Descriptive profile and ANOVA of mental toughness self-rating of soccer players

Group	Defenders			Mid fielders			Strikers			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Rebound ability	4.85	3.00	7.00	4.65	3.00	5.00	5.05	3.00	7.00	2,57	0.27	0.77
	1.81			1.57			1.82					
Ability to handle pressure	4.10	2.25	5.00	4.25	2.25	5.00	5.00	3.00	7.00	2,57	1.10	0.34
	2.13			2.02			2.03					
Concentration ability	4.65	3.00	5.00	3.75	2.25	5.00	4.30	3.00	5.00	2,57	1.35	0.27
	1.73			1.62			1.89					
Level of confidence	4.75	3.00	7.00	5.15	3.00	7.00	4.90	3.00	7.00	2,57	0.20	0.82
	2.15			2.01			1.94					
Deal with motivation	6.45	5.50	7.00	5.05	3.00	7.00	6.95	5.25	8.00	2,57	6.11*	0.00
	1.47			2.01			1.82					

*The mean difference was significant at the 0.05 level

The table 4.24 indicates the descriptive profile of mental toughness self-rating of soccer groups such as defenders, midfielders and strikers. The obtained F values 6.11 was significant because the variable was higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar mental tough in self-rating except deal with motivation.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as *M*, standard deviation as *SD*, and lower quartile as *LQ* and upper quartiles as *UQ*. The ANOVA results coded such as degree of freedom *df*, F values as **F** and level of significance as **Sig.**

Table 4.25

Analysis of variance of deal with motivation of soccer players in self-rating

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Deal with Motivation	Between Groups	38.80	2	19.40	6.11*	0.00
	Within Groups	180.85	57	3.17		

Table 4.25 indicates the obtained F value of 6.11 is significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar deal with motivation in self-rating

Table 4.26

Post hoc analysis on deal with motivation of soccer players in self-rating

Defenders	Group mean		Mean Difference	Sig.
	Mid Fielders	Strikers		
6.45	5.05		1.40*	0.02
6.45		6.95	-0.50	0.38
	5.05	6.95	-1.90*	0.00

**The mean difference was significant at the 0.05 level*

Table 4.26 shows that the mean difference values of 1.40 when defenders are compared with mid fielders and the mean difference values of 1.90 when strikers are compared with midfielders proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.19

Mean comparison on deal with motivation of soccer players in self-rating

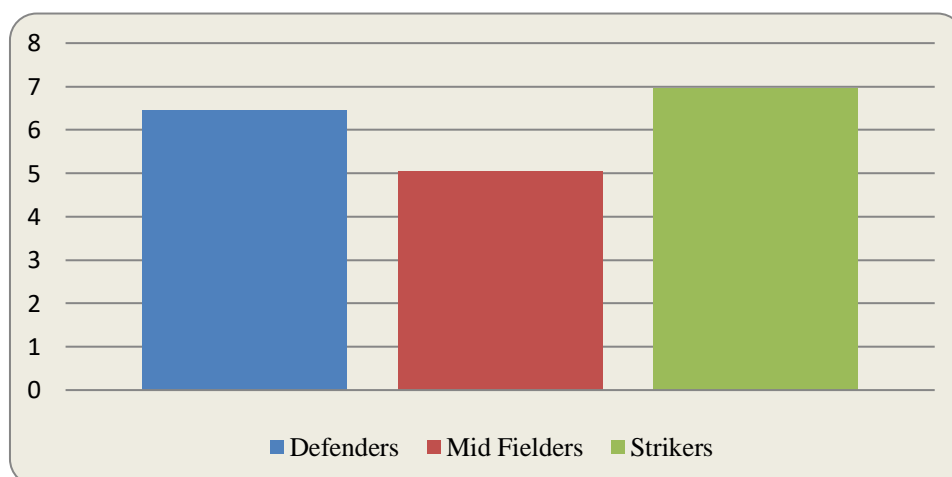


Figure 4.20

Descriptive profile of mental toughness self-rating of soccer players



Table 4.27

Descriptive profile and ANOVA of mental toughness discrepancy value of soccer players

Group	Defenders			Mid fielders			Strikers					
Sub variables	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>df</i>	F	Sig.
	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Rebound ability	20.00	10.00	28.75	20.50	10.00	30.00	23.95	17.75	33.00	2,57	0.52	0.60
	16.00			13.65			9.66					
Ability to handle pressure	34.40	25.00	41.50	29.95	13.00	44.25	29.05	20.00	40.00	2,57	0.64	0.53
	15.88			17.96			14.10					
Concentration ability	31.70	23.50	44.25	35.65	26.25	40.00	31.40	14.75	40.75	2,57	0.49	0.62
	12.45			16.36			16.46					
Level of confidence	33.45	17.75	45.75	27.05	17.00	35.00	32.60	17.75	40.00	2,57	0.94	0.40
	16.52			12.28			18.66					
Deal with motivation	25.65	14.00	30.00	31.05	12.25	48.00	16.25	8.50	23.00	2,57	4.60*	0.01
	13.12			20.86			1.12					

**The mean difference was significant at the 0.05 level*

The table 4.27 indicates the descriptive profile of mental toughness discrepancy of soccer groups such as defenders, midfielders and strikers. The obtained F values 4.60 was significant because the variable was higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar mental toughness in discrepancy except deal with motivation.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as *M*, standard deviation as *SD*, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom *df*, F values as **F** and level of significance as **Sig.**

Table 4.28

Analysis of variance of deal with motivation discrepancy value of soccer players

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Deal with motivation	Between Groups	2243.73	2	1121.87	4.60*	0.01
	Within Groups	13889.25	57	243.67		

Table 4.28 indicates the obtained F value of 6.11 is significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer

Table 4.29

Post hoc analysis on deal with motivation of discrepancy value of soccer players

Defenders	Group mean Mid Fielders	Strikers	Mean Difference	Sig.
25.65	31.05	16.25	-5.40	0.28
25.65	31.05		14.40*	0.00

**The mean difference was significant at the 0.05 level*

Table 4.29 shows that the mean difference values of 14.40 when strikers are compared with mid fielders proved to be significant since these p values are higher than the significant level of 0.05. In the case of discrepancy the lowest mean value is best.

Figure 4.21

Mean comparison on deal with motivation discrepancy value of soccer players

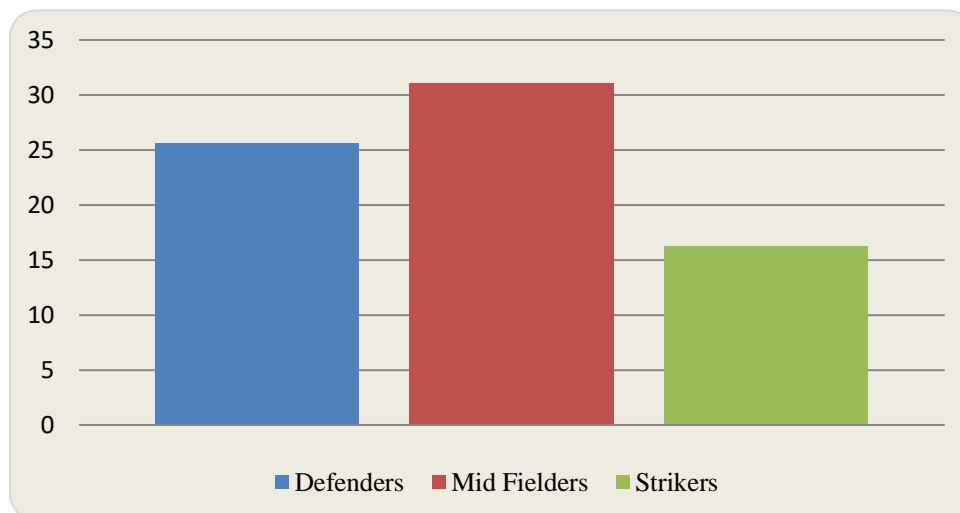
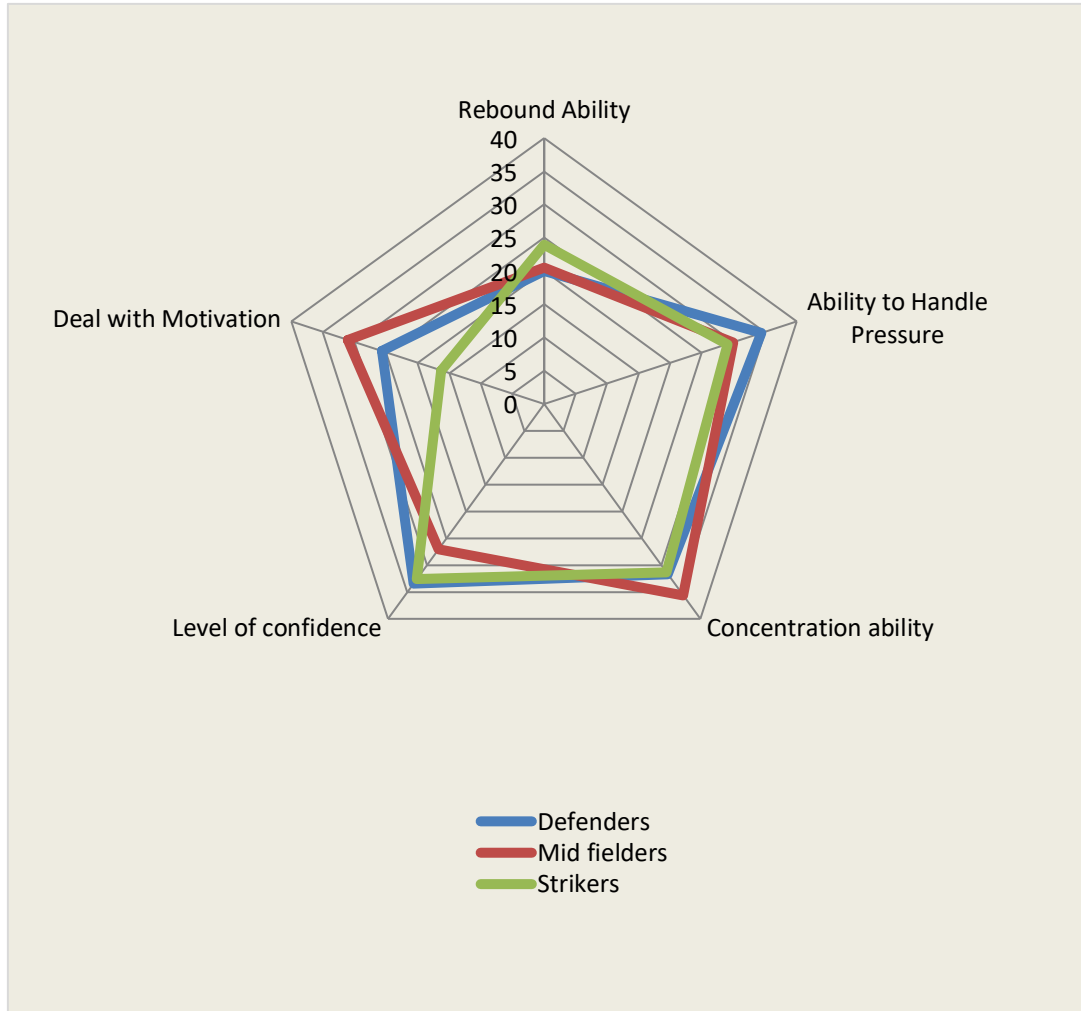


Figure 4.22

Descriptive profile and ANOVA of mental toughness discrepancy value of soccer players



Mental imagery of soccer group

Table 4.30

Descriptive profile and ANOVA of mental imagery perceived rating of soccer players

Group	Defenders			Mid fielders			Strikers			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Skill imagery	4.75	3.00	6.75	3.55	2.25	4.75	4.50	3.00	5.75	2,57	2.03	0.14
	2.38			1.57			1.93					
Strategy imagery	5.70	4.00	7.00	5.25	4.00	6.75	5.10	4.00	6.00	2,57	0.57	0.57
	1.92			2.15			1.41					
Goal imagery	7.20	5.00	9.00	5.20	4.00	6.75	5.80	4.00	7.75	2,57	5.32*	0.01
	2.21			1.77			1.96					
Affect imagery	6.55	6.00	8.00	5.80	5.00	7.75	5.25	3.25	6.75	2,57	2.06	0.14
	1.90			2.12			2.07					
Mastery imagery	5.85	4.00	8.75	6.45	4.25	9.00	5.80	4.00	8.00	2,57	0.43	0.66
	2.64			2.37			2.42					

**The mean difference was significant at the 0.05 level*

The table 4.30 indicates the descriptive profile of mental imagery perceived rating of soccer groups such as defenders, midfielders and strikers. The obtained F values 5.32 was significant because the variable was higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar in perceived rating except goal imagery.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig**.

Table 4.31

Analysis of variance of goal imagery ability of soccer players in perceived rating

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Goal Imagery	Between Groups	42.13	2	21.07	5.32*	0.01
	Within Groups	225.60	57	3.96		

Table 4.31 reveals that the obtained F value of 5.32 is significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are different goal imagery ability in perceived rating

Table 4.32

Post hoc analysis on goal imagery ability of soccer players in perceived rating

Defenders	Group mean Mid Fielders	Strikers	Mean Difference	Sig
7.20	5.20		2.00*	0.00
7.20		5.80	1.40*	0.03
	5.20	5.80	-0.60	0.34

**The mean difference was significant at the 0.05 level*

Table 4.32 shows that the mean difference values of 2.00 when defenders are compared with mid fielders and the mean difference values of 1.40 when defenders are compared with strikers proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.23

Mean comparison on goal imagery ability of soccer players in perceived rating

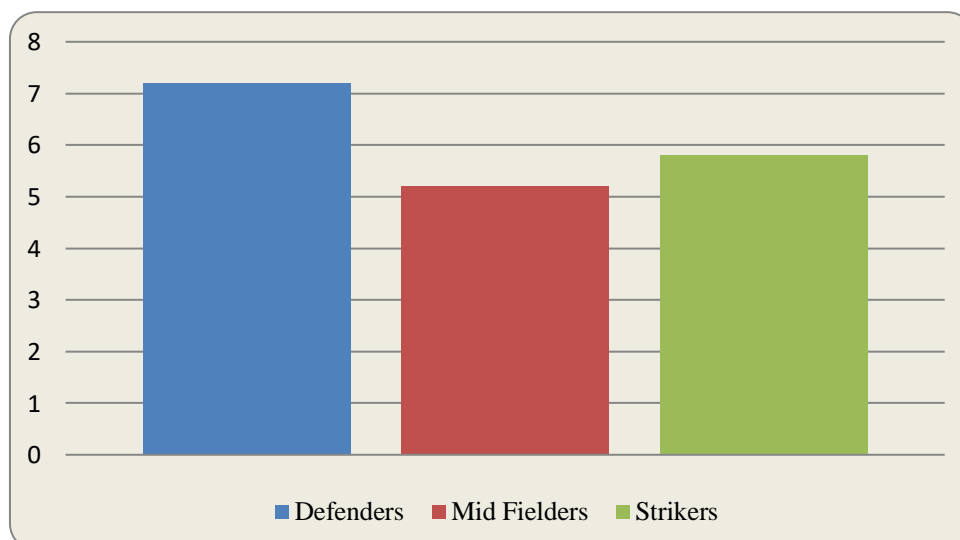


Figure 4.24

Descriptive profile and ANOVA of mental imagery perceived rating of soccer players

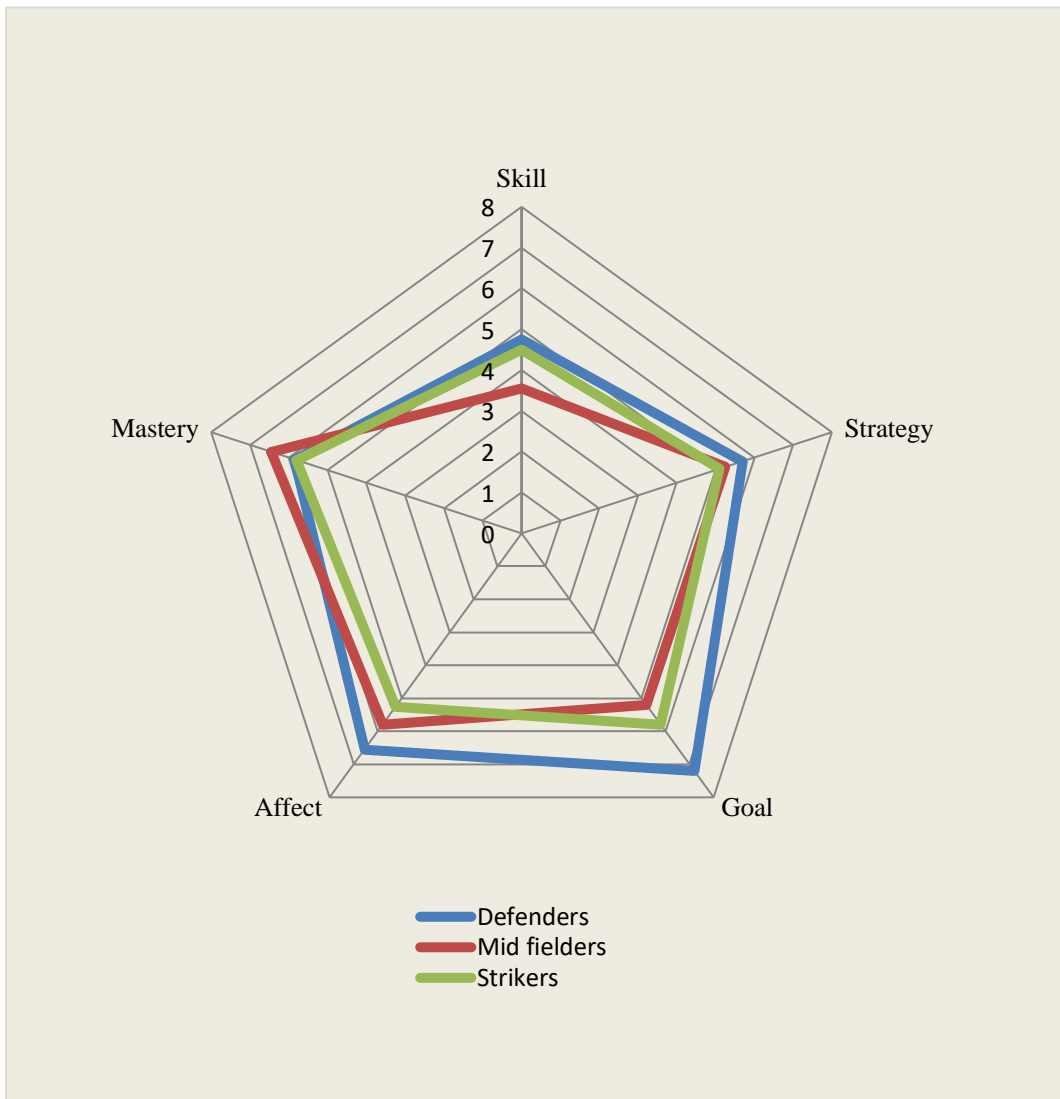


Table 4.33

Descriptive profile and ANOVA of mental imagery self-rating of soccer players

Group	Defenders			Mid fielders			Strikers			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Skill imagery	6.05	5.00	7.00	5.70	4.25	7.00	6.30	5.00	7.00	2,57	0.81	0.45
	1.43			1.56			1.49					
Strategy imagery	6.20	5.00	7.00	5.80	5.00	7.00	6.05	5.00	7.00	2,57	0.43	0.66
	1.32			1.51			1.32					
Goal imagery	6.20	5.25	7.00	5.90	4.25	7.00	6.10	4.25	8.00	2,57	0.16	0.85
	1.36			1.65			2.00					
Affect imagery	6.10	5.00	7.00	6.05	5.00	7.00	6.60	6.00	8.00	2,57	1.04	0.36
	1.41			1.36			1.23					
Mastery imagery	6.10	5.00	7.00	6.35	4.25	8.00	6.50	5.00	8.00	2,57	0.27	0.77
	1.59			1.87			1.79					

**The mean difference was significant at the 0.05 level*

The table 4.33 shows the descriptive profile of mental imagery self-rating of soccer groups such as defenders, midfielders and strikers. The obtained F values are not significant because the variable was lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar mental imagery in self-rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig.**

Figure 4.25

Descriptive profile of mental imagery self-rating of soccer players

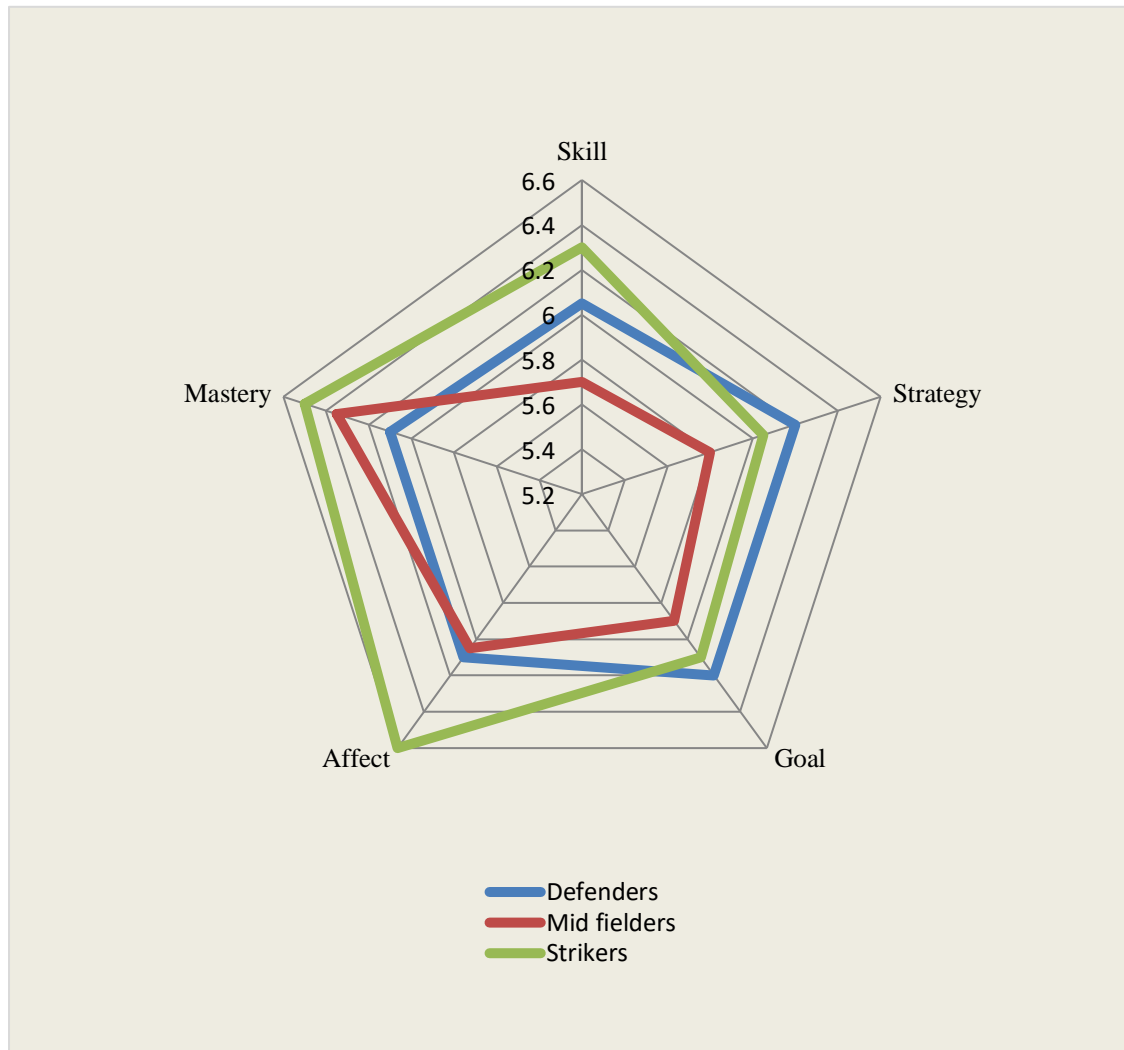


Table 4.34

Descriptive profile and ANOVA of mental imagery discrepancy value of soccer players

Group	Defenders			Mid fielders			Strikers			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	SD			SD			SD					
Skill imagery	18.45	11.00	26.00	16.55	8.25	25.50	17.55	9.25	28.25	2.57	0.17	0.84
	10.50			10.64			9.60					
Strategy	21.60	15.25	28.50	21.30	13.00	29.00	20.70	16.00	24.50	2.57	0.04	0.96
imagery	9.53			11.42			8.92					
Goal imagery	27.35	17.00	37.00	21.95	12.50	29.75	23.25	10.50	32.75	2.57	0.93	0.40
	12.71			11.06			15.22					
Affect imagery	26.75	16.00	33.75	23.55	15.50	36.25	19.15	10.25	30.50	2.57	2.08	0.13
	11.18			12.58			11.69					
Mastery	22.95	12.2	33.75	23.65	14.25	26.75	19.55	11.75	23.75	2.57	0.74	0.48
imagery	12.35			12.17			9.51					

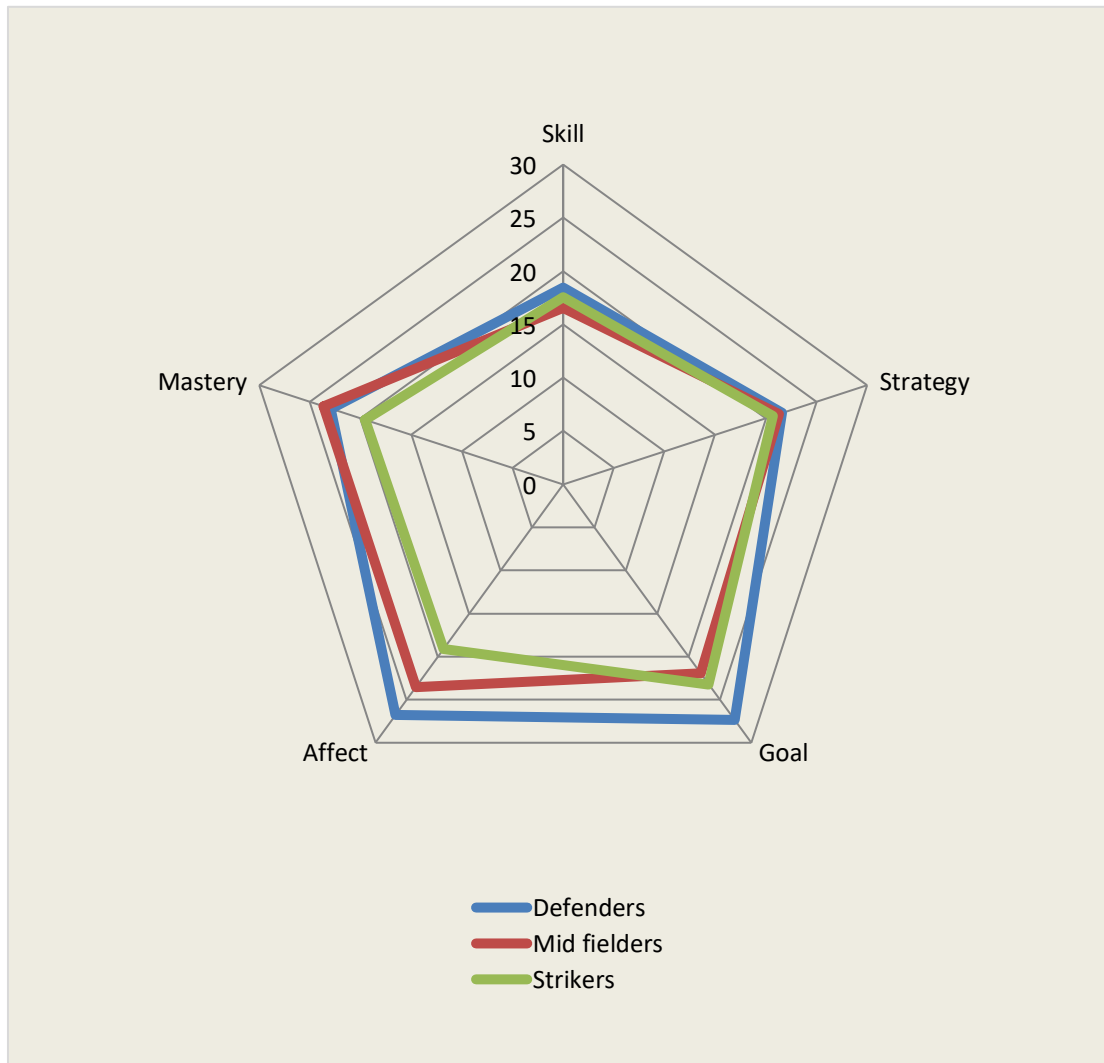
**The mean difference was significant at the 0.05 level*

The table 4.34 shows the descriptive profile of mental imagery discrepancy value of soccer groups such as defenders, midfielders and strikers. The obtained F values are not significant because the variables are lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar mental imagery in discrepancy value.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig**.

Figure 4.26

Descriptive profile of mental imagery discrepancy value of soccer players



Training performance strategies of soccer group

Table 4.35

Descriptive profile and ANOVA of training performance strategies perceived rating of soccer players

Group	Defenders			Mid fielders			Strikers			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Goal setting	5.05 0.76	4.25	6.00	5.45 1.10	5.00	6.00	5.95 1.28	5.00	7.00	2,57	3.57*	0.03
Emotional control	5.90 1.07	5.00	7.00	5.85 1.18	5.00	7.00	6.35 1.09	6.00	7.00	2,57	1.22	0.30
Automaticity	5.55 1.36	4.25	7.00	5.30 1.17	4.25	6.00	6.20 1.01	5.25	7.00	2,57	3.06	0.06
Relaxation	5.95 1.05	6.00	6.75	5.90 1.29	5.00	7.00	5.90 1.21	5.00	6.75	2,57	0.01	0.99
Self-talk	5.95 1.10	6.00	6.75	5.10 0.85	4.00	6.00	5.95 1.32	5.00	7.00	2,57	3.94*	0.03
Imagery	5.70 1.17	4.25	7.00	5.30 1.49	4.25	6.00	6.00 1.08	5.00	6.75	2,57	1.56	0.22
Attention control	5.40 1.27	5.00	6.00	5.65 1.35	5.00	6.00	5.50 1.00	5.00	6.00	2,57	0.21	0.81
Activation	4.55 1.10	4.00	5.00	5.15 1.39	4.00	6.00	5.50 1.54	4.00	6.75	2,57	2.52	0.09

**The mean difference was significant at the 0.05 level*

The table 4.35 indicates the descriptive profile of training performance strategies perceived rating of soccer groups such as defenders, midfielders and strikers. The obtained F values of goal setting 3.57 and 3.94 self-talk were significant differences because the variables are higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar training performance strategies except goal setting and self-talk in perceived rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as *M*, standard deviation as *SD*, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom *df*, F values as **F** and level of significance as **Sig.**

Table 4.36

Analysis of variance of perceived training goal setting of soccer players

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Goal setting	Between Groups	8.13	2	4.07	3.57*	0.03
	Within Groups	64.85	57	1.14		

Table 4.36 reveals that the obtained F value of 3.57 is significant since it is higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar training goal setting in perceived rating

Table 4.37

Post hoc analysis on perceived training goal setting of soccer players

Defenders	Group mean		Mean Difference	Sig
	Mid Fielders	Strikers		
5.05	5.45		-0.40	0.24
5.05		5.95	-0.90*	0.01
	5.45	5.95	0.50	0.14

**The mean difference was significant at the 0.05 level*

Table 4.37 shows that the mean difference values of 0.90 when strikers are compared with defenders proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.27

Mean comparison on perceived training goal setting of soccer players

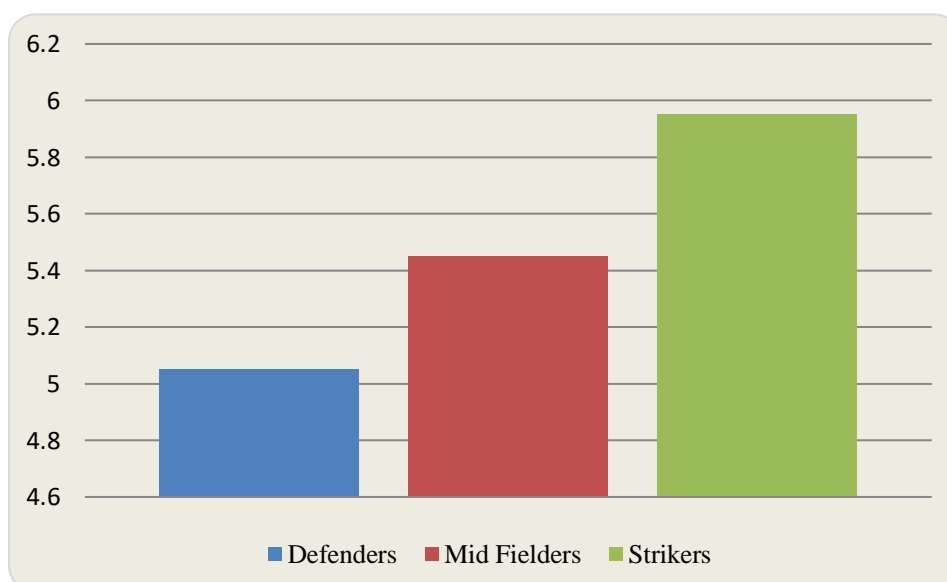


Table 4.38

Analysis of variance of training self-talk perceived rating of soccer players

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Self-talk	Between Groups	9.63	2	4.82	3.94*	0.03
	Within Groups	69.70	57	1.22		

Table 4.38 reveals that the obtained F value of 3.94 is not significant since it is lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar training self-talk in perceived rating.

Table 4.39

Post hoc analysis on training self-talk perceived rating of soccer players

Defenders	Group mean Mid Fielders	Strikers	Mean Difference	Sig
5.95	5.10		0.85*	0.02
5.95		5.95	0.00	1.00
	5.10	5.95	-0.85*	0.02

**The mean difference was significant at the 0.05 level*

Table 4.39 shows that the mean difference values of 0.85 when defenders are compared with mid fielders and the mean difference values of 0.85 when strikers are compared with mid fielders proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.28

Mean comparison on training self-talk perceived rating of soccer players

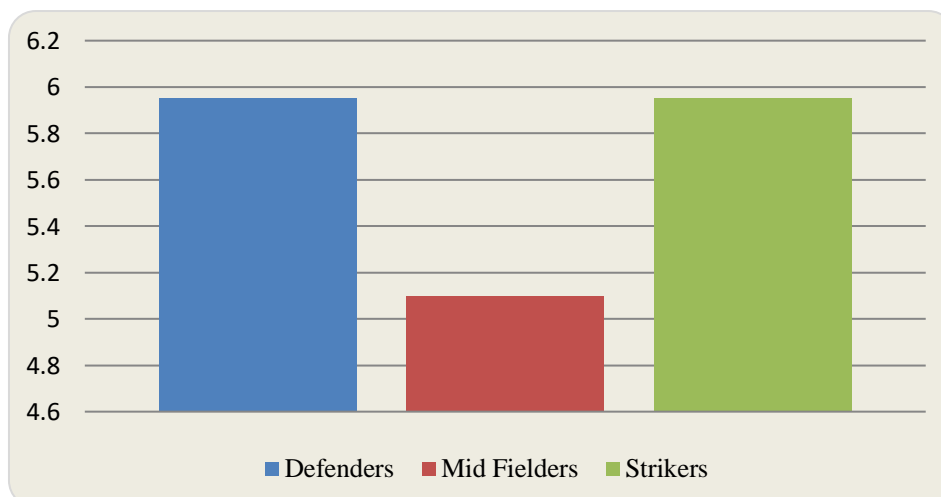


Figure 4.29

Descriptive profile of training performance strategies perceived rating of soccer players

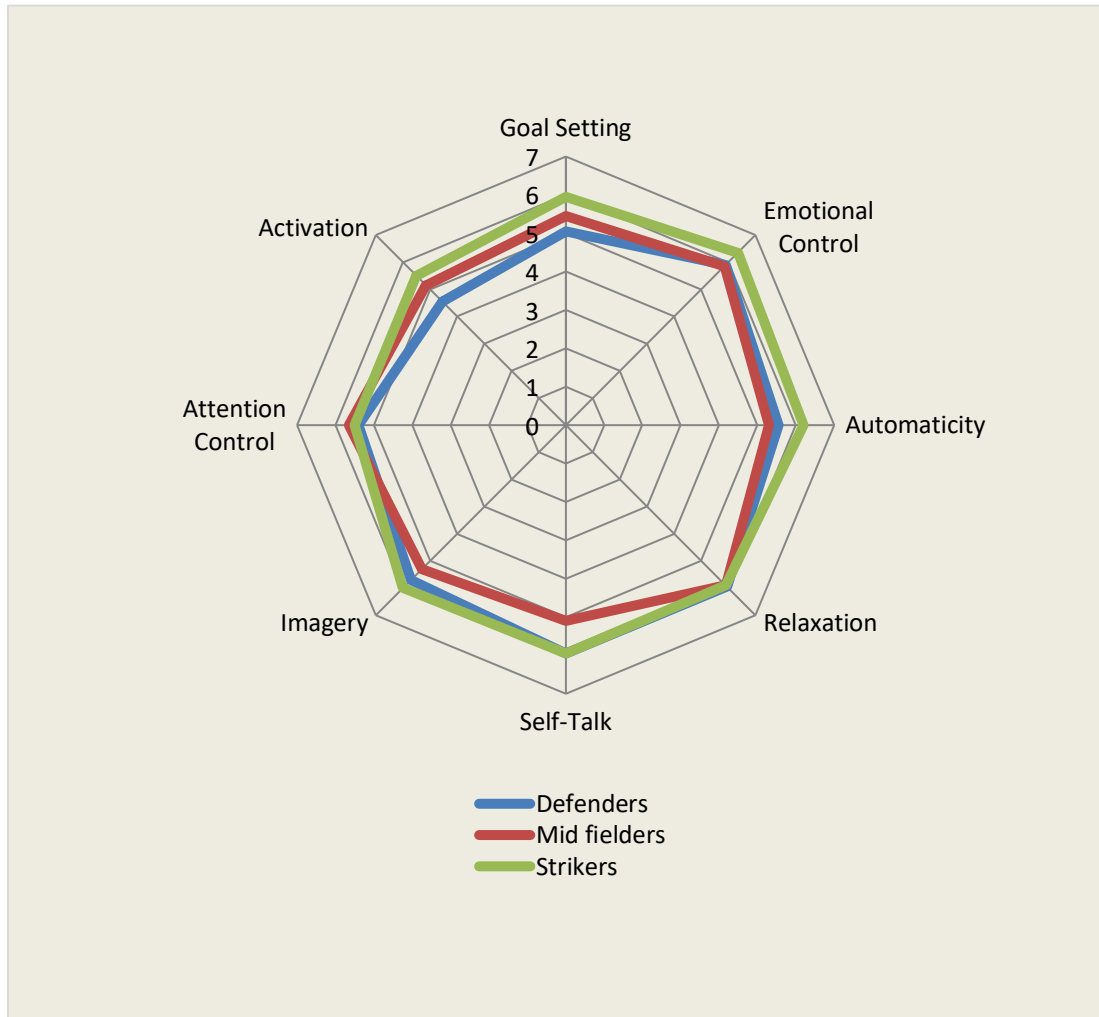


Table 4.40

Descriptive profile and ANOVA of training performance strategies self-rating of soccer players

Group	Defenders			Mid fielders			Strikers			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Goal setting	6.30	6.00	7.00	6.15	5.00	7.00	6.10	6.00	7.00	2,57	0.36	0.70
	0.66			0.93			0.72					
Emotional control	6.20	6.00	7.00	5.85	6.00	6.00	6.15	6.00	7.00	2,57	1.55	0.22
	0.77			0.49			0.75					
Automaticity	6.25	6.00	7.00	6.25	6.00	7.00	6.05	5.00	6.00	2,57	0.33	0.72
	0.97			0.72			1.00					
Relaxation	6.95	7.00	7.00	6.50	6.00	7.00	6.35	6.00	7.00	2,57	3.42*	0.04
	0.60		0.00	0.89			0.75					
Self-talk	5.70	5.00	6.00	6.05	6.00	6.75	6.10	6.00	7.00	2,57	2.17	0.12
	0.57			0.69			0.72					
Imagery	6.25	6.00	7.00	6.25	6.00	7.00	6.15	6.00	7.00	2,57	0.10	0.91
	0.85			0.64			0.93					
Attention control	6.05	6.00	6.75	6.05	6.00	6.75	6.35	6.00	7.00	2,57	1.12	0.33
	0.69			0.76			0.75					
Activation	6.10	5.25	7.00	6.20	6.00	7.00	6.15	6.00	7.00	2,57	0.08	0.93
	0.79			0.62			0.99					

**The mean difference was significant at the 0.05 level*

The table 4.40 indicates the descriptive profile of training performance strategies self-rating of soccer groups such as defenders, midfielders and strikers. The obtained F values of relaxation 3.42 were significant because the variable was higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar training performance strategies except relaxation in self-rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig**.

Table 4.41

Analysis of variance of relaxation self-rating of soccer players in training

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Relaxation	Between Groups	3.90	2	1.95	3.42*	0.04
	Within Groups	32.50	57	0.57		

Table 4.41 reveals that the obtained F value of 3.42 is significant since it is higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar training relaxation in self-rating

Table 4.42

Post hoc analysis on relaxation self-rating of soccer players in training

Defenders	Group mean Mid fielders	Strikers	Mean Difference	Sig
6.95	6.50		0.45	0.07
6.95		6.35	0.60*	0.02
	6.50	6.35	0.15	0.53

**The mean difference was significant at the 0.05 level*

Table 4.42 shows that the mean difference values of 0.60 when defenders are compared with strikers proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.30

Mean comparison on relaxation self-rating of soccer players in training

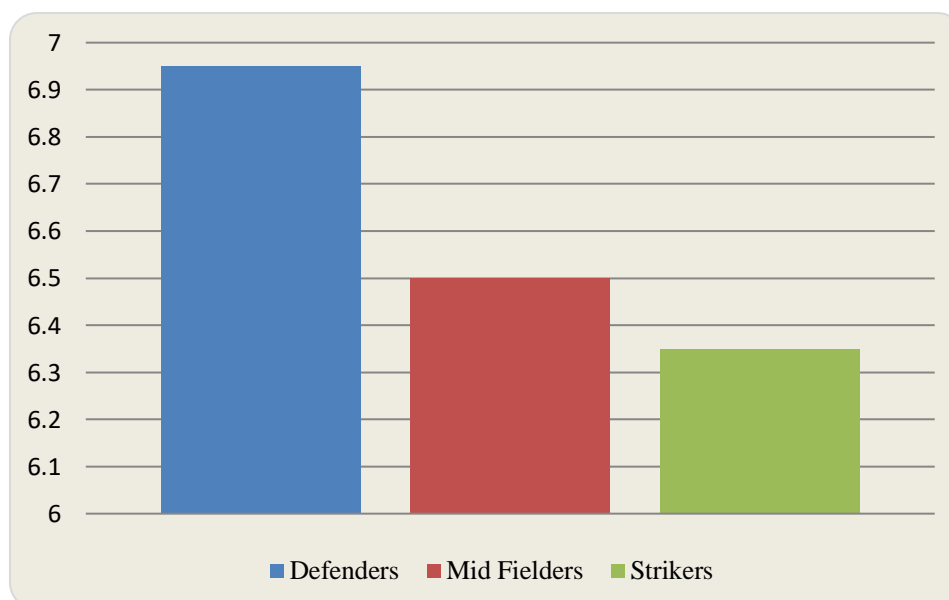


Figure 4.31

Descriptive profile of training performance strategies self-rating of soccer players

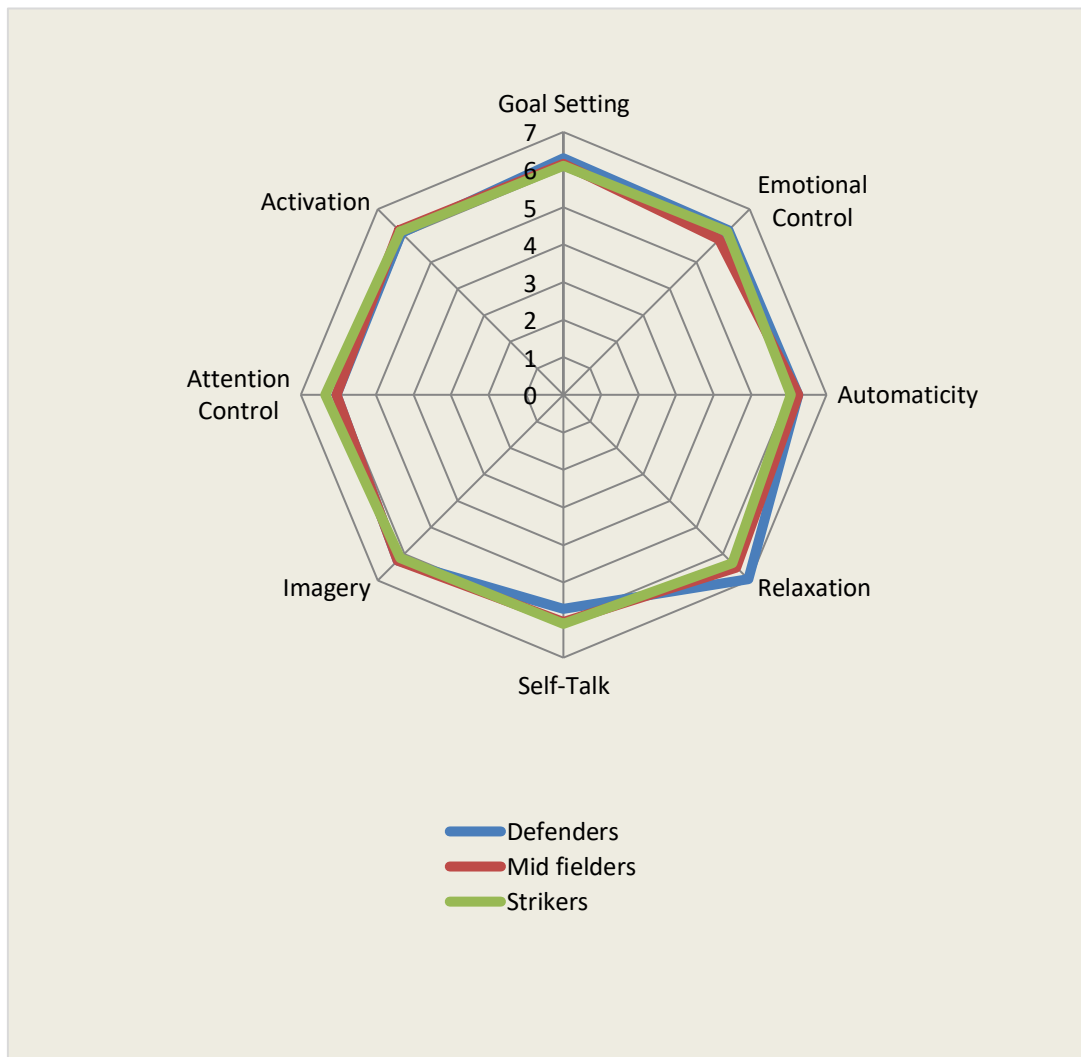


Table 4.43

Descriptive profile and ANOVA of training performance strategies discrepancy of soccer players

Group	Defenders			Mid fielders			Strikers			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Goal setting	20.10	18.00	24.00	22.55	18.00	26.50	25.00	21.50	27.75	2,57	4.41*	0.02
	4.44			5.92			5.19					
Emotional control	24.25	20.00	29.25	25.65	23.00	31.00	26.00	21.50	31.00	2,57	0.42	0.66
	6.77			6.45			6.01					
Automaticity	22.45	18.50	27.75	21.20	20.00	22.75	26.10	23.25	32.00	2,57	2.78	0.07
	7.29			5.15			7.78					
Relaxation	20.20	16.50	24.00	22.30	18.50	26.25	22.90	21.00	25.00	2,57	1.36	0.26
	4.62			6.10			5.48					
Self-talk	26.85	23.25	32.25	22.00	18.00	27.00	25.25	20.25	28.00	2,57	2.75	0.07
	6.54			5.65			7.64					
Imagery	23.55	15.00	31.50	21.80	16.50	27.00	24.95	20.25	29.50	2,57	0.91	0.41
	8.99			6.83			6.06					
Attention control	22.15	18.00	26.25	24.45	18.50	27.75	21.45	16.00	25.00	2,57	0.98	0.38
	6.16			9.12			5.42					
Activation	18.90	14.25	22.75	20.90	16.00	24.00	22.60	16.50	30.00	2,57	1.47	0.24
	5.83			7.37			7.20					

**The mean difference was significant at the 0.05 level*

The table 4.43 indicates the descriptive profile of training performance strategies discrepancy of soccer groups such as defenders, midfielders and strikers. The obtained F values of goal setting 4.41 were significant because the variable was higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar training performance strategies except goal setting in discrepancy.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig**.

Table 4.44

Analysis of variance of goal setting discrepancy of soccer players in training

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Goal setting	Between Groups	240.10	2	120.05	4.41*	0.02
	Within Groups	1550.75	57	27.21		

Table 4.44 reveals that the obtained F value of 4.41 is significant since it is higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar training goal setting in discrepancy.

Table 4.45

Post hoc analysis on goal setting discrepancy of soccer players in training

	Group mean		Mean Difference	Sig
Defenders	Mid Fielders	Strikers		
20.10	22.55		-2.45	0.14
20.10		25.00	-4.90*	0.00
	22.55	25.00	-2.45	0.14

**The mean difference was significant at the 0.05 level*

Table 4.45 shows that the mean difference values of 4.90 when defenders are compared with strikers proved to be significant since these p values are higher than the significant level of 0.05. The lowest mean value is considered in the case of discrepancy.

Figure 4.32

Mean comparison on goal setting discrepancy of soccer players in training

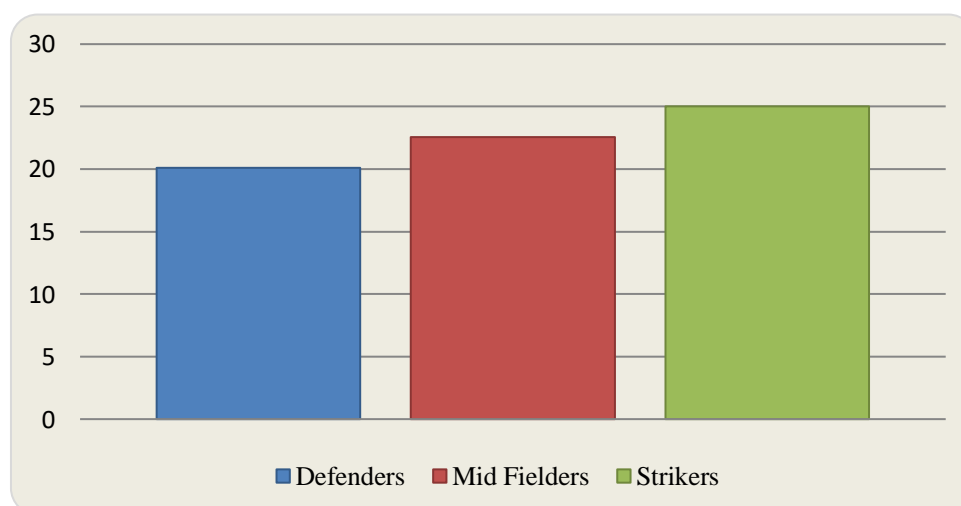
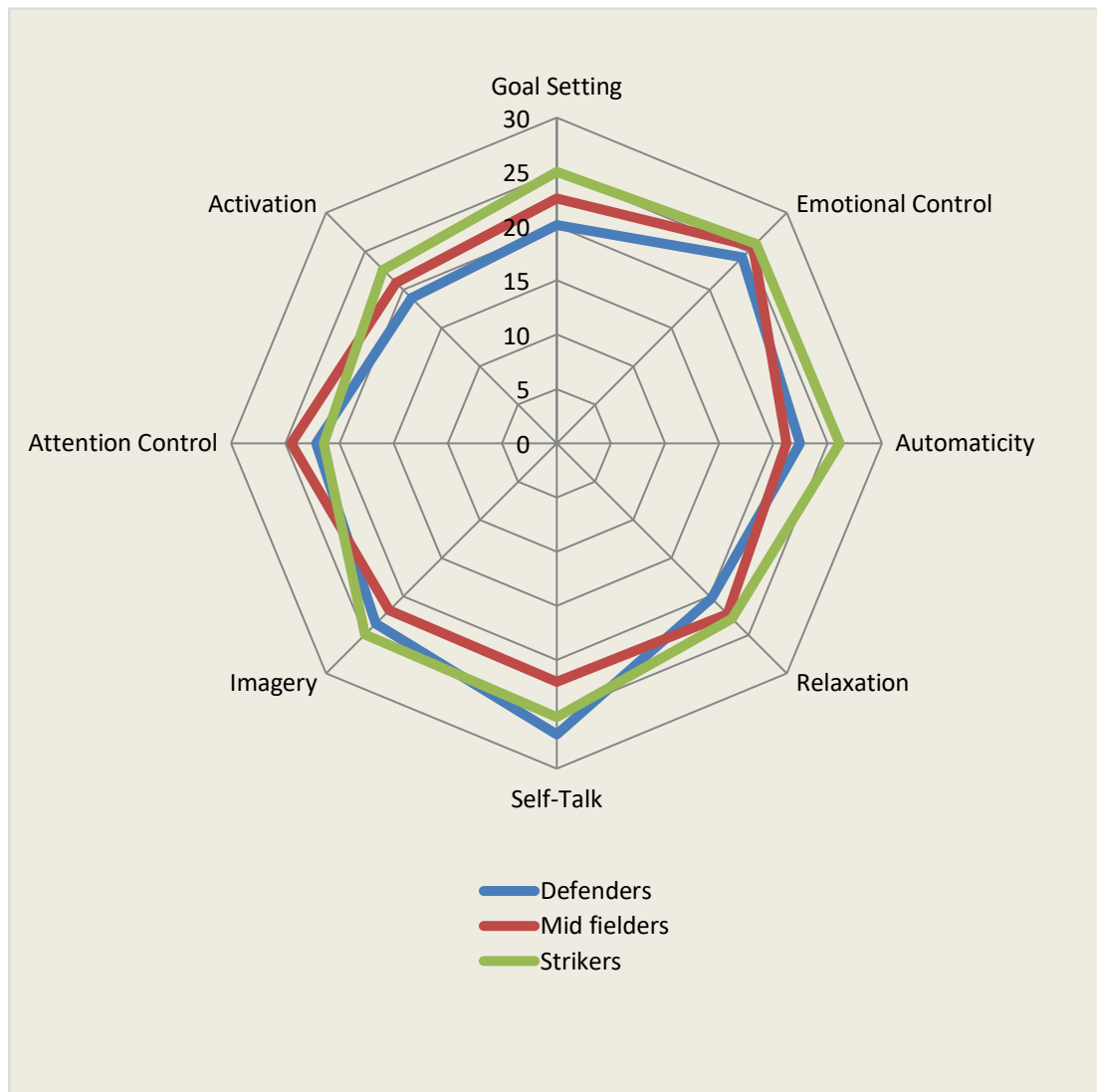


Figure 4.33

Descriptive profile of training performance strategies discrepancy of soccer players



Competition performance strategies of soccer group

Table 4.46

Descriptive profile and ANOVA of competition performance strategies perceived rating of soccer players

Group	Defenders			Mid fielders			Strikers			df	F	Sig.
	M	LQ	UQ	M	LQ	UQ	M	LQ	UQ			
Sub variables	SD			SD			SD					
Goal setting	5.55	5.00	6.00	5.45	5.00	6.00	6.55	6.00	7.75	2,57	5.09*	0.01
	1.15			1.23			1.23					
Emotional control	5.65	5.00	6.00	5.75	5.00	6.75	6.35	6.00	7.00	2,57	2.37	0.10
	1.27			1.12			0.88					
Automaticity	5.65	5.00	6.75	5.70	5.00	6.75	6.25	6.00	7.00	2,57	1.57	0.22
	1.35			1.26			0.91					
Relaxation	5.45	4.25	6.00	5.90	5.25	6.00	6.05	5.25	7.00	2,57	1.60	0.21
	1.10			1.17			1.05					
Self-talk	5.45	5.00	6.00	5.70	5.00	6.00	6.30	6.00	7.00	2,57	3.79*	0.03
	1.19			0.98			0.80					
Imagery	5.40	5.00	6.00	5.45	5.00	6.00	6.30	6.00	7.00	2,57	4.71*	0.01
	1.23			1.05			0.80					
Positive thinking	5.40	5.00	6.00	5.60	5.00	6.75	6.30	6.00	7.00	2,57	3.99*	0.02
	0.94			1.14			1.08					
Activation	4.85	3.25	6.00	5.40	4.00	7.00	5.50	4.00	6.00	2,57	0.24	0.79
	1.50			1.60			1.24					

**The mean difference was significant at the 0.05 level*

The table 4.46 indicates the descriptive profile of competition performance strategies perceived rating of soccer players. The obtained F values are goal setting, self-talk, imagery and positive thinking scores 5.09, 3.79, 4.71 and 3.99 respectively was significant differences because the variables are greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar in competition strategies except goal setting, self-talk, imagery and positive thinking in perceived rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig.**

Table 4.47

Analysis of variance of competition goal setting of soccer players in perceived rating

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Goal setting	Between Groups	14.80	2	7.40	5.09*	0.01
	Within Groups	82.85	57	1.45		

Table 4.47 reveals that the obtained F value of 5.09 is significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar competition goal setting strategies in perceived rating.

Table 4.48

Post hoc analysis on competition goal setting of soccer players in perceived rating

Defenders	Group mean Mid Fielders	Strikers	Mean Difference	Critical Difference
5.55	5.45		0.10	0.79
5.55		6.55	-1.00*	0.01
	5.45	6.55	-1.10*	0.01

**The mean difference was significant at the 0.05 level*

Table 4.48 shows that the mean difference values of 1.00 when strikers are compared with defenders and the mean difference values of 1.10 when strikers are compared with defenders proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.34

Mean comparison on perceived competition goal setting of soccer players

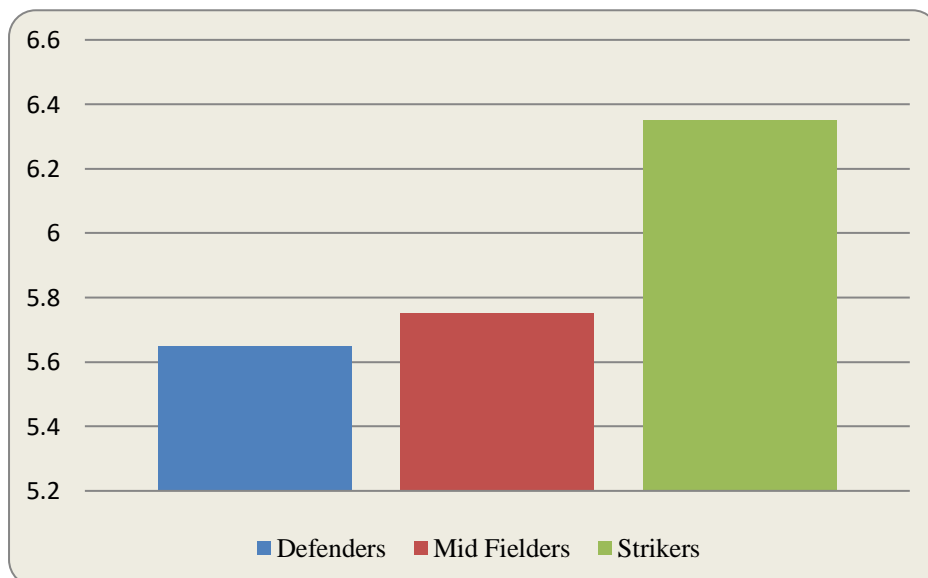


Table 4.49

Analysis of variance of competition self-talk of soccer players in perceived rating

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Self-talk	Between Groups	7.63	2	3.82	3.79*	0.03
	Within Groups	57.35	57	1.01		

Table 4.49 reveals that the obtained F value of 3.79 is significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar self-talk in competition strategies perceived rating.

Table 4.50

Post hoc analysis on competition self-talk of soccer players in perceived rating

Defenders	Group mean Mid Fielders	Strikers	Mean Difference	Sig
5.45	5.70		-0.25	0.43
5.45		6.30	-0.85*	0.01
	5.70	6.30	-0.60	0.06

**The mean difference was significant at the 0.05 level*

Table 4.50 shows that the mean difference values of 1.00 when strikers are compared with defenders and the mean difference values of 0.85 proved significant since these p values are higher than the significant level of 0.05.

Figure 4.35

Mean comparison on competition self-talk of soccer players in perceived rating

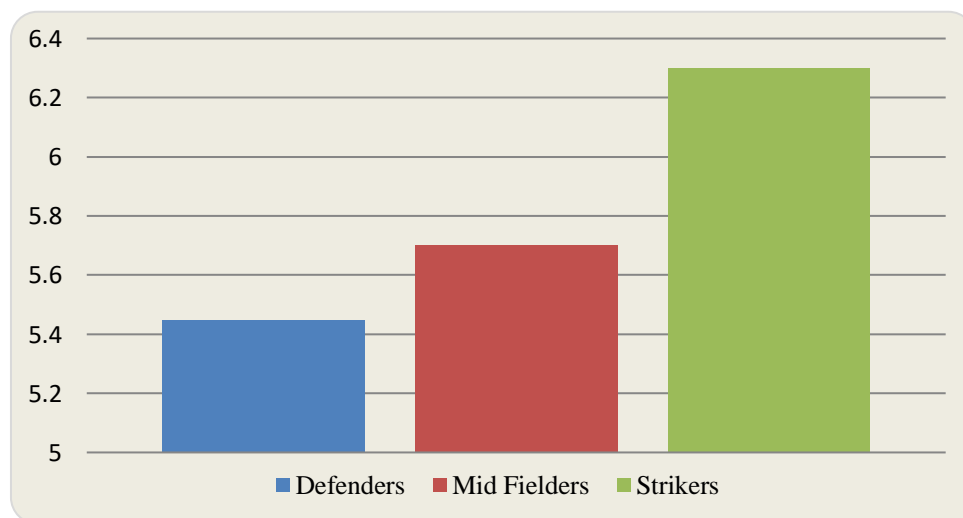


Table 4.51

Analysis of variance of competition imagery of soccer players in perceived rating

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Imagery	Between Groups	10.23	2	5.12	4.71*	0.01
	Within Groups	61.95	57	1.09		

Table 4.51 reveals that the obtained F value of 4.71 is significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar in imagery ability in competition strategies perceived rating.

Table 4.52

Post hoc analysis on competition imagery of soccer players in perceived rating

Defenders	Group mean		Mean Difference	Sig
	Mid Fielders	Strikers		
5.40	5.45		-0.05	0.88
5.40		6.30	-0.90*	0.01
	5.45	6.30	-0.85*	0.01

**The mean difference was significant at the 0.05 level*

Table 4.52 shows that the mean difference values of 0.90 when strikers are compared with defenders and the mean difference values of 0.85 when strikers are compared with mid fielders proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.36

Mean comparison on competition imagery of soccer players in perceived rating

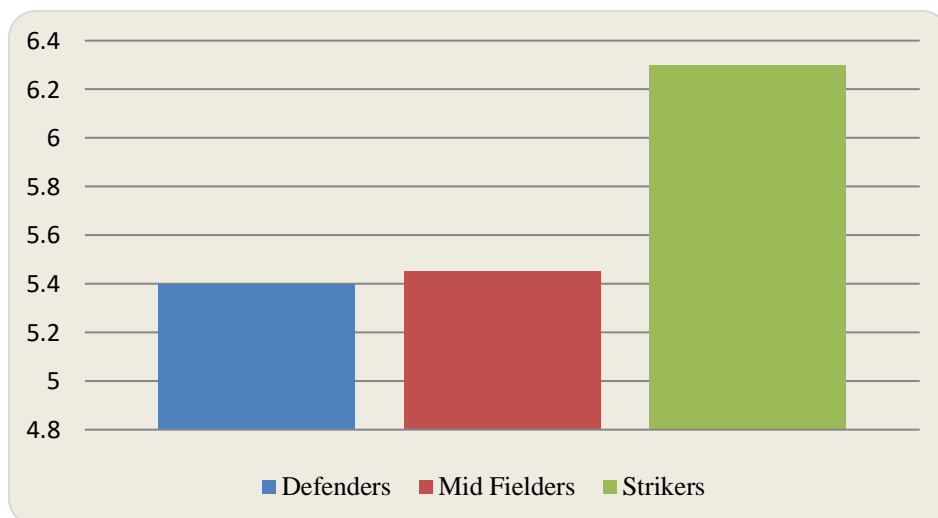


Table 4.53

Analysis of variance of competition positive thinking of soccer players in perceived rating

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Positive thinking	Between Groups	8.93	2	4.47	3.99*	0.02
	Within Groups	63.80	57	1.12		

Table 4.53 reveals that the obtained F value of 3.99 is significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar positive thinking in competition strategies perceived rating.

Table 4.54

Post hoc analysis on competition positive thinking of soccer players in perceived rating

Defenders	Group mean Mid Fielders	Strikers	Mean Difference	Sig
5.40	5.60		-0.20	0.55
5.40		6.30	-0.90*	0.01
	5.60	6.30	-0.70*	0.04

**The mean difference was significant at the 0.05 level*

Table 4.54 shows that the mean difference values of 0.90 when strikers are compared with defenders and the mean difference values of 0.70 when strikers are compared with mid fielders proved to be significant since these p values are higher than the significant level of 0.05.

Figure 4.37

Mean comparison on competition positive thinking of soccer players in perceived rating

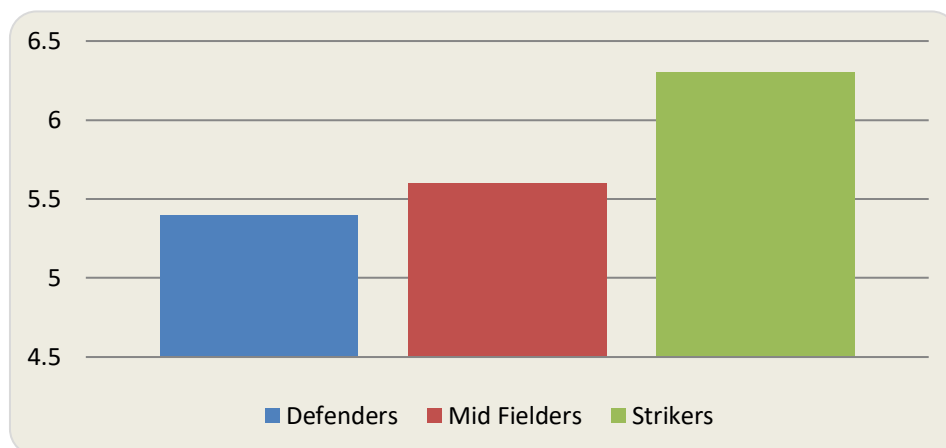


Figure 4.38

Descriptive profile of competition performance strategies perceived rating of soccer players

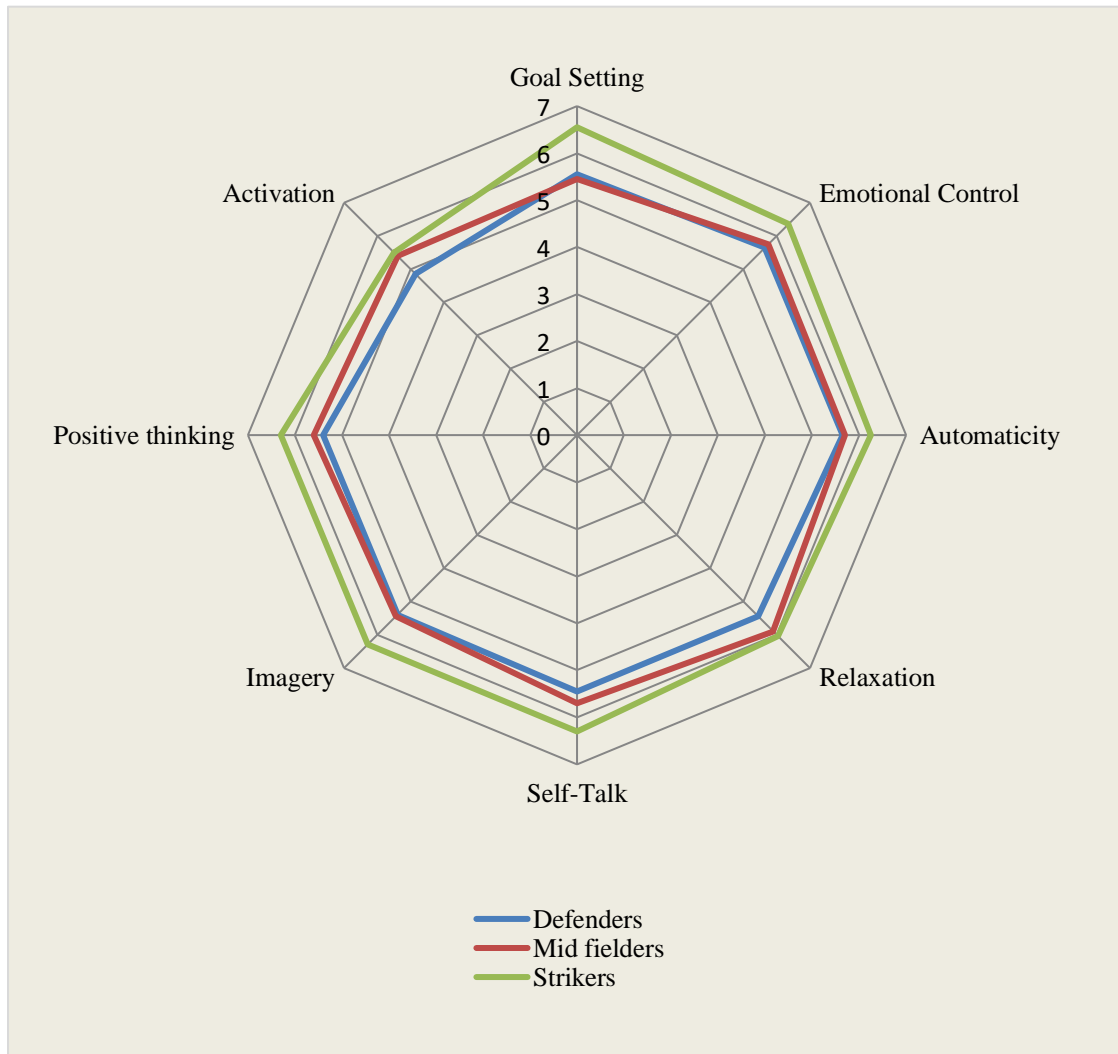


Table 4.55

Descriptive profile and ANOVA of competition performance strategies self-rating of soccer players

Group	Defenders			Mid fielders			Strikers			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Goal setting	6.35 0.99	6.00	7.00	6.50 0.76	6.00	7.00	6.10 0.97	5.25	7.00	2,57	0.98	0.38
Emotional control	5.80 0.52	5.25	6.00	5.90 0.64	5.25	6.00	6.20 0.77	6.00	7.00	2,57	2.04	0.14
Automaticity	5.40 0.68	5.00	6.00	5.70 0.66	5.00	6.00	5.85 0.67	5.00	6.00	2,57	2.34	0.11
Relaxation	6.45 0.83	6.00	7.00	6.55 1.00	6.00	7.00	6.35 0.88	6.00	7.00	2,57	0.25	0.78
Self-talk	6.20 0.70	6.00	7.00	5.90 0.97	5.00	6.75	6.15 0.59	6.00	6.00	2,57	0.88	0.42
Imagery	6.05 0.76	6.00	6.75	6.45 0.89	6.00	7.00	6.00 0.79	6.00	6.75	2,57	1.83	0.17
Positive thinking	6.40 0.82	6.00	7.00	6.45 1.00	6.00	7.00	6.80 1.01	6.00	7.00	2,57	1.06	0.35
Activation	6.25 0.91	6.00	7.00	6.15 0.59	6.00	6.75	6.20 0.77	6.00	7.00	2,57	0.09	0.92

**The mean difference was significant at the 0.05 level*

The table 4.55 shows the descriptive profile of competition performance strategies self-rating of soccer players. The obtained F values are not significant since it is lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar competition performance strategies in self-rating.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as *M*, standard deviation as *SD*, and lower quartile as *LQ* and upper quartiles as *UQ*. The ANOVA results coded such as degree of freedom *df*, F values as **F** and level of significance as **Sig.**

Figure 4.39

Mean comparison on competition performance strategies self-rating of defenders

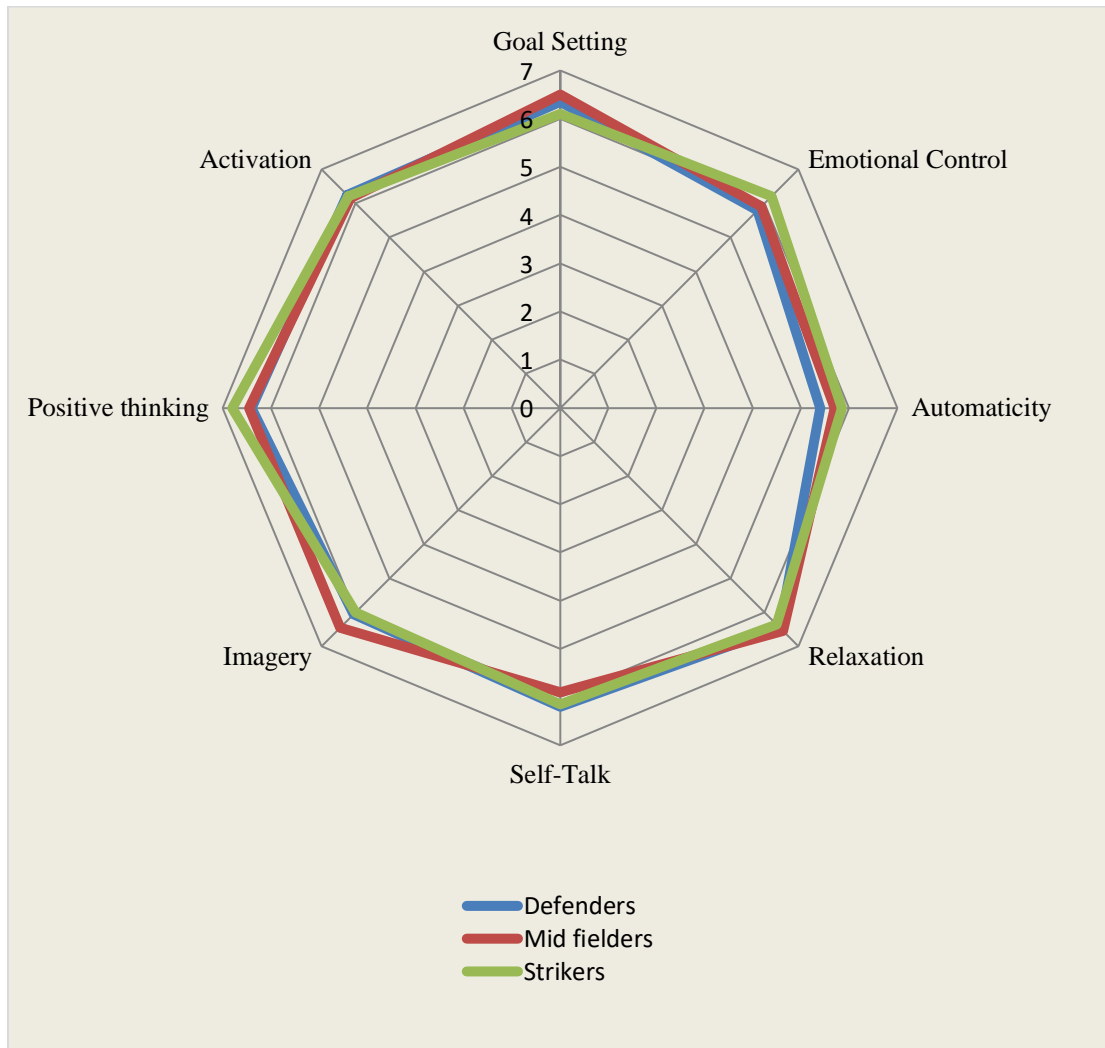


Table 4.56

Descriptive profile and ANOVA of competition strategies discrepancy of soccer players

Group	Defenders			Mid fielders			Strikers			<i>df</i>	F	Sig.
	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ	<i>M</i>	LQ	UQ			
Sub variables	<i>SD</i>			<i>SD</i>			<i>SD</i>					
Goal setting	21.90 7.77	15.00	27.75	20.40 5.88	16.00	26.25	26.65 8.54	20.25	32.25	2,57	3.81*	0.03
Emotional control	24.95 7.03	21.00	27.75	25.20 5.88	20.00	29.50	25.65 4.55	21.25	30.00	2,57	0.07	0.93
Automaticity	27.90 6.46	23.25	32.75	27.25 8.29	23.00	33.75	26.65 7.88	23.00	32.00	2,57	0.14	0.87
Relaxation	20.35 5.45	16.50	24.75	22.75 7.95	18.00	27.00	24.15 6.05	18.75	29.50	2,57	1.71	0.19
Self-talk	22.25 6.45	18.00	28.00	24.65 5.90	21.00	27.75	25.85 4.48	24.00	28.00	2,57	2.09	0.13
Imagery	23.10 8.02	18.50	26.25	21.15 6.96	14.25	27.00	27.40 6.60	21.50	32.00	2,57	3.92*	0.03
Positive thinking	21.30 4.51	18.00	24.00	21.75 7.43	15.75	27.00	21.55 6.51	18.00	24.75	2,57	0.03	0.97
Activation	20.35 9.17	11.75	26.25	21.75 7.55	15.00	27.25	22.00 7.36	16.00	27.00	2,57	0.24	0.79

**The mean difference was significant at the 0.05 level*

The table 4.56 shows the descriptive profile of competition performance strategies discrepancy of soccer groups. The obtained F values of 3.81 and 3.92 respectively goal setting and imagery are significant differences since the sub variables are higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar competition strategies except goal setting and imagery in discrepancy value.

Note: The results of the table coded under the descriptive profile for the easy identification such as mean value as **M**, standard deviation as **SD**, and lower quartile as **LQ** and upper quartiles as **UQ**. The ANOVA results coded such as degree of freedom **df**, F values as **F** and level of significance as **Sig**.

Table 4.57

Analysis of variance of competition goal setting discrepancy of soccer players

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Goal setting	Between Groups	425.83	2	212.92	3.81*	0.03
	Within Groups	3189.15	57	55.95		

Table 4.57 reveals that the obtained F value of 3.81 is significant since it is higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar competition goal setting in discrepancy value

Table 4.58

Post hoc analysis on competition goal setting discrepancy of soccer players

Group mean	Mid Fielders	Strikers	Mean Difference	Sig
21.90	20.40		1.50	0.53
21.90		26.65	-4.75*	0.04
	20.40	26.65	-6.25*	0.01

*The mean difference was significant at the 0.05 level

Table 4.58 shows that the mean difference values of 6.25 when strikers are compared with mid fielders and value of 4.75 when strikers compared to defenders proved to be significant since these p values are higher than the significant level of 0.05.

Here the lowest mean value is best.

Figure 4.40

Mean comparison on competition goal setting discrepancy of soccer players

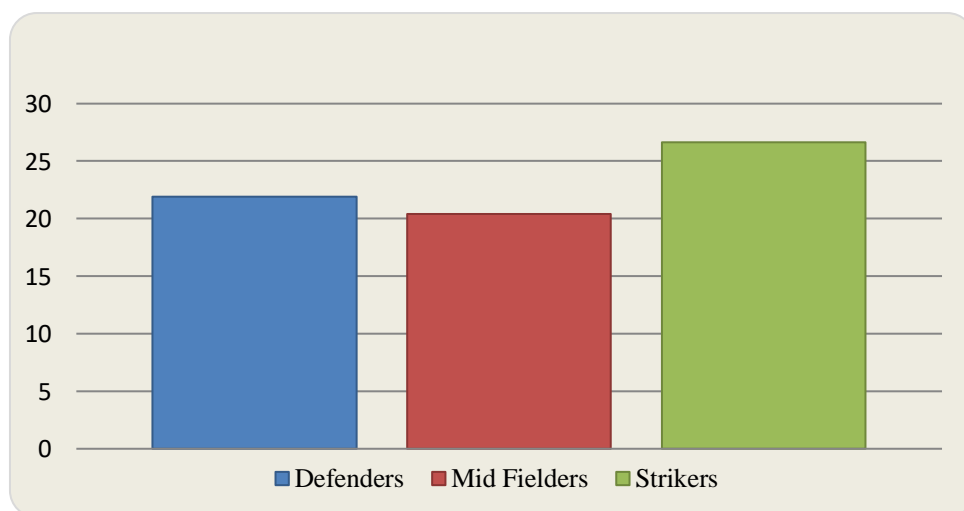


Table 4.59

Analysis of variance of competition imagery discrepancy of soccer players

Sub variable	Sources	Sum of Squares	df	Mean Square	F	Sig.
Imagery	Between Groups	409.03	2	204.52	3.92*	0.03
	Within Groups	2971.15	57	52.13		

Table 4.59 reveals that the obtained F value of 3.92 is significant since it is higher than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar competition imagery in discrepancy value

Table 4.60

Post hoc analysis on competition imagery discrepancy of soccer players

Defenders	Group mean Mid Fielders	Strikers	Mean Difference	Sig.
23.10	21.75		1.95	0.40
23.10		27.40	-4.30	0.06
	21.75	27.40	-6.25*	0.01

**The mean difference was significant at the 0.05 level*

Table 4.60 shows that the mean difference values of 6.25 when strikers are compared with mid fielders proved to be significant since these p values are higher than the significant level of 0.05. Here the lowest mean value of mid fielders is best in imagery.

Figure 4.41

Mean comparison on competition imagery discrepancy of soccer players

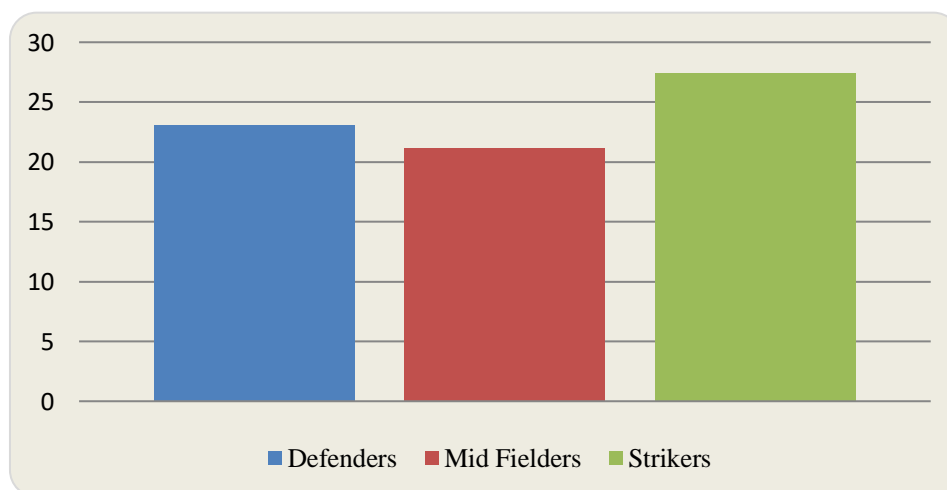
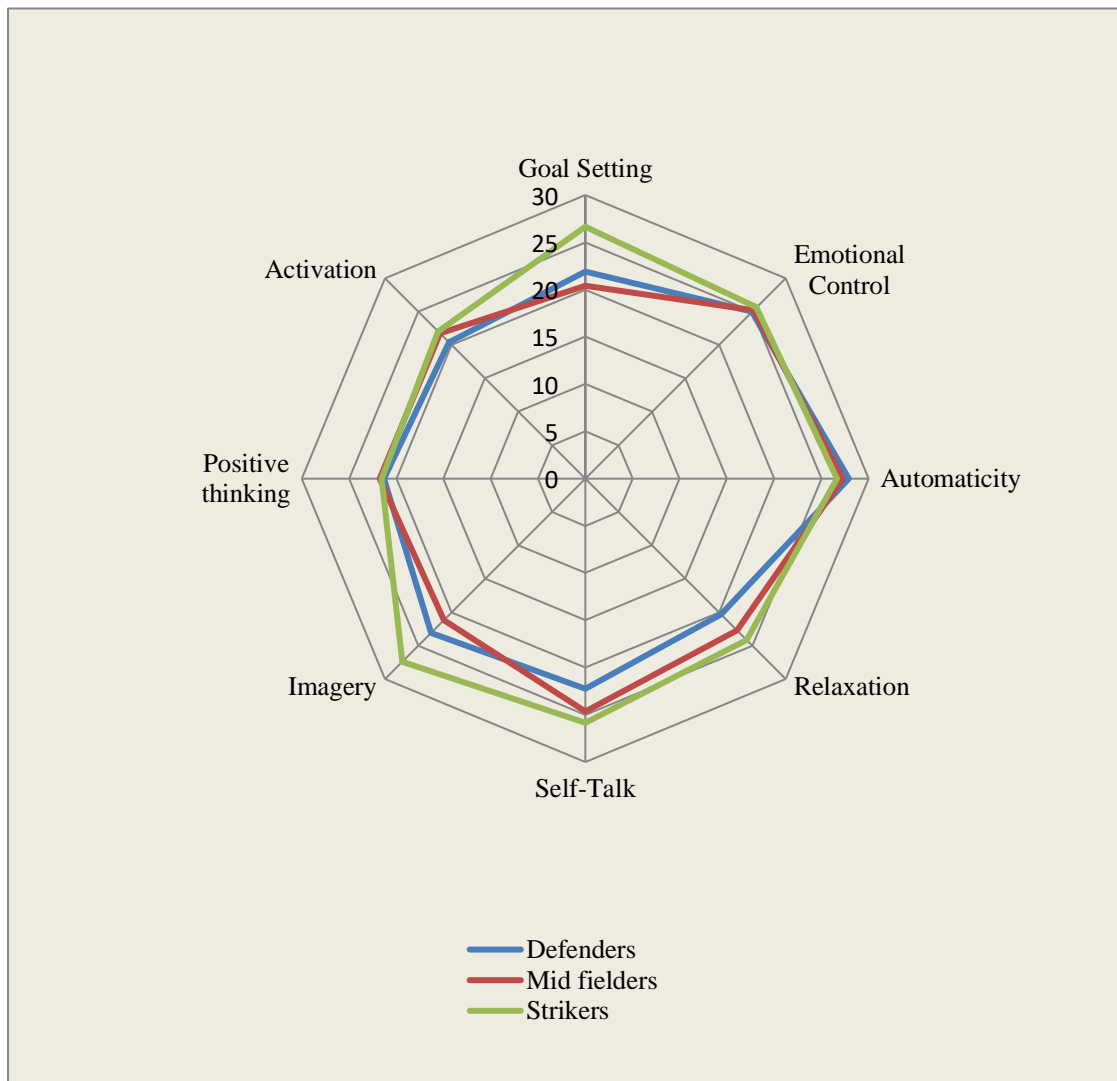


Figure 4.42

Descriptive profile of competition strategies discrepancy of soccer players



Discussion on findings among soccer group

Descriptive profile

Descriptive profile of the soccer group clearly indicates the mental toughness, mental imagery, performance strategies both training and competition sub scale. The sub variables of mental toughness were rebound ability, ability to handle pressure, concentration ability, level confidence, and deal with motivation. In mental imagery and sub scales such as skill imagery, strategy imagery, goal imagery, affect imagery and mastery imagery. In the case of performance strategies training and competition

sub scales such as goal setting, emotional control, automaticity, relaxation, self-talk, imagery, attention control and activation. Here the seventh sub scale of performance strategies is different in the form of training sub scale it was attention control and competition sub scale positive thinking. The mean difference value indicates the differences among soccer players such as defenders, midfielders and strikers. The rating was subdivided such as perceived rating, self-rating and discrepancy value.

Analysis of variance

The results shows the sub variables of mental toughness perceived rating, self-rating and discrepancy of rebound ability, ability to handle pressure, concentration ability, level confidence, and deal with motivation are not significant since it is lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar mental toughness in perceived rating, self-rating and discrepancy.

The results showed the variable of mental imagery perceived rating of the goal imagery ability proved significant difference because the table value 5.32 was greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the athletes are not similar in goal imagery ability in perceived rating. The post hoc results shows that the mean difference values of 2.00 when defenders are compared with mid fielders and the mean difference values of 1.40 when defenders are compared with strikers proved to significant since these p values are higher than the significant level of 0.05. The rest of sub variables of mental imagery perceived rating such as skill imagery strategy imagery, affect imagery and mastery imagery among soccer players are similar mental Imagery in perceived rating. The sub variables of mental imagery self-rating and discrepancy value are not significant since it is lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar mental imagery self-rating and discrepancy

The results shows the sub variable of goal setting and self-talk in performance strategies training perceived rating was proved significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar goal setting and self-talk in Performance strategies training perceived rating. The post hoc results goal settings shows that the mean difference values 0.90 when strikers are compared with defenders and the post hoc result of self-talk shows that the

mean difference values of 0.85 when defenders are compared with mid fielders and the mean difference values of 0.85 when strikers are compared with mid fielders proved to significant since these p values are higher than the significant level of 0.05. The rest of the sub variables of performance strategies training perceived rating such as emotional control, automaticity, relaxation, imagery, attention control and activation are not significant since it is less than the required value. Thus, showing all the athletes are similar Performance strategies training in perceived rating except goal setting and self-talk.

In self-rating the results show the sub variable of relaxation in performance strategies training self-rating was proved significant. The post hoc of relaxation shows that the mean difference values of 0.60 when defenders are compared with strikers proved to significant since these p values are higher than the significant level of 0.05. The rest of the sub variables of performance strategies training self-rating are not significant Thus, showing all the athletes are similar performance strategies training in self-rating except relaxation. In the case of discrepancy the results shows the sub variables of performance strategies training discrepancy value of soccer players are similar performance strategies training discrepancy value

The results shows the sub variable of goal setting, self-talk, imagery ,and positive thinking in performance strategies competition perceived rating was proved significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar goal setting, self-talk, imagery and positive thinking in Performance strategies competition perceived rating. The post hoc results goal settings shows that the mean difference values 1.00 when strikers are compared with defenders and the mean difference values of 1.10 when strikers are compared with defenders. In the case of self-talk the mean difference values of 1.00 when strikers are compared with defenders and the mean difference values of 0.85.

The post hoc result of imagery shows that the mean difference values of 0.90 when strikers are compared with defenders and the mean difference values of 0.85 when strikers are compared with mid fielders and the post hoc result of positive thinking shows that the mean difference values of 0.90 when strikers are compared with defenders and the mean difference values of 0.70 when strikers are compared with mid fielders proved to significant since these p values are higher than the

significant level of 0.05. The rest of the sub variables are similar performance strategies training in perceived rating except goal setting, self-talk, imagery and positive thinking.

The results shows the sub variables of performance strategies competition self-rating of soccer players such as goal setting, emotional control, automaticity, relaxation, self-talk, imagery, positive thinking and activation are not significant since it is lesser than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are similar performance strategies competition in self-rating.

The results shows the sub variable of goal setting and imagery in performance strategies competition discrepancy value was proved significant since it is greater than the required value of 3.16 (d.f. of 2, 57), thus showing all the soccer players are not similar goal setting and imagery in performance strategies competition. The post hoc results goal settings shows that the mean difference values 6.25 when midfielders compared with strikers and value of 4.75 when defenders compared to strikers proved to significant since these p values are higher than the significant level of 0.05. and 6.25 when the mid fielders are compared with strikers proved to significant since these p a are higher than the significant level of 0.05. The rest of the sub variables of Performance strategies competition discrepancy such as emotional control, automaticity, relaxation, self-talk, positive thinking and activation are not significant since it is less than the required value. Thus, showing all the athletes are similar in performance, strategies, competition discrepancy value except goal setting and imagery.

Factor analysis

The factor analysis discussed the prominent factors based on perceived, self and discrepancy value. The correlation matrix analysis of various ratings such as perceived, self and discrepancy of athletes and soccer players and its principal component analysis unrotated factor loading has been shown in the appendix table from one to eighteen. The following are the various principal component analyses and its factor loading interpretation as follows.

Factor analysis of athletic group

Perceived rating

Table 4.61

Principal component analysis (Varimax solution)

Perceived rating		Factor 1	Factor 2	Factor 3
Eigenvalue		6.304	3.774	2.842
Total Variance. Exp		24.245	14.516	10.931
Cum. Variance .Exp		24.245	38.762	49.692
Sub Variables	Code			
Goal setting	PST1	0.24	0.14	0.46
Emotional Control	PST2	0.02	0.19	0.55
Automaticity	PST3	0.07	0.33	0.15
Relaxation	PST4	-0.04	0.18	0.74
Self-Talk	PST5	-0.09	0.04	0.67
Imagery	PST6	0.04	0.03	0.77
Attention Control	PST7	0.11	0.16	0.51
Activation	PST8	-0.04	0.40	0.04
Rebound ability	MT1	0.82	0.00	-0.12
Ability to handle pressure	MT2	0.83	0.11	0.09
Concentration ability	MT3	0.83	0.08	0.06
Level of confidence	MT4	0.79	0.16	0.05
Motivation	MT5	0.76	0.10	0.01
Skill imagery ability	MI1	0.78	0.08	0.08
Strategy imagery ability	MI2	0.74	0.13	0.23
Goal imagery ability	MI3	0.78	-0.27	0.03
Affect imagery ability	MI4	0.81	-0.02	-0.08
Mastery Imagery Ability	MI5	0.67	0.34	0.11
Goal setting	PSC1	0.02	0.48	0.32
Emotional Control	PSC2	0.00	0.45	0.15
Automaticity	PSC3	0.12	0.60	0.23
Relaxation	PSC4	0.26	0.46	0.25
Self-Talk	PSC5	0.04	0.61	0.08
Imagery	PSC6	0.08	0.79	0.03
Positive Thinking	PSC7	0.13	0.82	0.16
Activation	PSC8	0.02	0.68	-0.30

Table 4.61 clearly indicates the principal component analysis varimax solution of perceived rating of athletes

Note: Code of sub variables such as **PST** as performance strategies training **MT** as Mental Toughness, **MI** as Mental Imagery and **PSC** for Performance strategies competition.

Table 4.62

Factor one after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Rebound ability	MT1	0.82
Ability to handle pressure	MT2	0.83
Concentration ability	MT3	0.83
Level of confidence	MT4	0.79
Motivation	MT5	0.76
Skill imagery ability	MI1	0.78
Strategy imagery ability	MI2	0.74
Goal imagery ability	MI3	0.78
Affect imagery ability	MI4	0.81
Mastery Imagery Ability	MI5	0.67

Table 4.62 indicates the factors one loading and code of variables of perceived rating of athletes was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The ability to handle pressure and concentration ability factors from mental toughness variable was heavily loaded. This could be called the concentration and handle pressure factors. This accounts for 24.245% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as Mental Toughness, **MI** as Mental Imagery and **PSC** for Performance strategies competition

Table 4.63

Factor two after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Automaticity	PSC3	0.60
Self-Talk	PSC5	0.61
Imagery	PSC6	0.79
Positive Thinking	PSC7	0.82
Activation	PSC8	0.68

Table 4.63 indicates the factors two loading and code of variables of perceived rating of athletes was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition

.The positive thinking and imagery from performance strategies variable was heavily loaded. This could be called as the thinking and imagination factors. This accounts for 14.516% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as Mental Toughness, **MI** as Mental Imagery and **PSC** for Performance strategies competition

Table 4.64

Factor three after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Relaxation	PST4	0.74
Self-Talk	PST5	0.67
Imagery	PST6	0.77

Table 4.64 indicates the factors three loading and code of variables of perceived rating of athletes were characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The imagery from performance strategies training variable was heavily loaded. This could be called as the imagination factors. This accounts for 10.931% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as Mental Toughness, **MI** as Mental Imagery and **PSC** for Performance strategies competition

Discussion

In perceived rating the factor one the ability to handle pressure and concentration ability factors from mental toughness variables was heavily loaded. This could be called the concentration and handle pressure factors. This accounts for 24.245% of the total common factors accounted for by all the three factors. In the case of factor two positive thinking and imagery from performance strategies variables was heavily loaded. This could be called as the thinking and imagination factors. This accounts for 14.516% of the total common factors accounted for by all the three factors. The factor three imagery from performance strategies training variables was heavily loaded. This could be called as the imagination factors. This accounts for 10.931% of the total common factors accounting for all the three factors.

Self-rating

Table 4.65

Principal component analysis (Varimax solution)

Self-Rating		Factor 1	Factor 2	Factor 3
Eigenvalue		3.199	2.886	2.225
Total Variance. Exp		12.305	11.100	8.556
Cum. Variance .Exp		12.305	23.405	31.961
Sub variables	Code	Factors		
Goal setting	PST1	0.28	0.38	0.09
Emotional Control	PST2	-0.02	0.58	-0.05
Automaticity	PST3	0.06	0.41	-0.17
Relaxation	PST4	0.02	0.62	-0.21
Self-Talk	PST5	-0.36	0.53	0.18
Imagery	PST6	0.10	0.20	-0.06
Attention Control	PST7	0.08	-0.19	0.30
Activation	PST8	0.26	0.09	-0.13
Rebound ability	MT1	-0.29	0.15	0.67
Ability to handle pressure	MT2	-0.13	0.32	-0.04
Concentration ability	MT3	0.02	-0.04	0.35
Level of confidence	MT4	0.00	0.02	-0.32
Motivation	MT5	0.00	-0.38	-0.10
Skill imagery ability	MI1	0.86	0.04	0.12
Strategy imagery ability	MI2	0.60	0.37	0.42
Goal imagery ability	MI3	0.68	-0.13	0.11
Affect imagery ability	MI4	0.65	-0.12	0.08
Mastery Imagery Ability	MI5	0.67	0.40	0.26
Goal setting	PSC1	0.03	0.48	-0.04
Emotional Control	PSC2	0.33	0.46	-0.33
Automaticity	PSC3	-0.19	0.37	0.29
Relaxation	PSC4	0.09	0.26	0.46
Self-Talk	PSC5	0.04	0.32	-0.40
Imagery	PSC6	-0.05	0.34	-0.38
Positive Thinking	PSC7	0.17	-0.12	0.55
Activation	PSC8	0.45	-0.14	-0.18

Table 4.65 clearly indicates the principal component analysis varimax solution of self-rating of athletes

Note: Code of sub variables such as **PST** as performance strategies training **MT** as Mental Toughness, **MI** as Mental Imagery and **PSC** for Performance strategies competition

Table 4.66

Factor one after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Skill imagery ability	MI1	0.86
Strategy imagery ability	MI2	0.60
Goal imagery ability	MI3	0.68
Affect imagery ability	MI4	0.65
Mastery Imagery Ability	MI5	0.67

Table 4.66 indicates the factors one loading and code of variables of self-rating of athletes were characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition. The skill imagery ability factor from mental imagery variable was heavily loaded. This could be called the skill factor. This accounts for 12.305% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as Mental Toughness, **MI** as Mental Imagery and **PSC** for Performance strategies competition

Table 4.66

Factor two after rotated factor Loadings (Varimax solution)

Sub variable	Code	Factor loadings
Relaxation	PST4	0.62

Table 4.67 indicates the factors two loading and code of variables of self-rating of athletes was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition. The relaxation factor from performance strategies training variable was the only loaded item. This could be called the relaxation factor. This accounts for 11.100% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as Mental Toughness, **MI** as Mental Imagery and **PSC** for Performance strategies competition

Table 4.68

Factor three after rotated factor Loadings (Varimax solution)

Sub variable	Code	Factor loadings
Rebound ability	MT1	0.67

Table 4.68 indicates the factors three loading and code of variables of self-rating of athletes was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The rebound ability factor from mental toughness variable was the only loaded item. This could be called the rebound factor. This accounts for 8.556% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion

In the case of self-rating factor one the skill imagery ability factor from the mental imagery variable was a heavily loaded item. This could be called the skill factor. This accounts for 12.305% of the total common factors accounted for by all the three factors. In the case of factor two the relaxation factor from performance strategies training variable was the only loaded item. This could be called the relaxation factor. This accounts for 11.100% of the total common factors accounted for all three factors and factor three indicates rebound ability factor from mental toughness variable was the only loaded item. This could be called the rebound factor. This accounts for 8.556% of the total common factors accounted for by all the three factors.

Discrepancy

Table 4.69

Principal component analysis (Varimax solution)

Discrepancy		Factor 1	Factor 2	Factor 3
Eigenvalue		3.122	2.916	2.872
Total Variance. Exp		12.009	11.214	11.044
Cum. Variance .Exp		12.009	23.222	24.267
Sub variables	Code			
Goal setting	PST1	0.15	0.69	0.00
Emotional Control	PST2	-0.05	0.54	0.29
Automaticity	PST3	0.34	0.39	0.15
Relaxation	PST4	0.47	0.12	0.26
Self-Talk	PST5	0.38	0.29	0.24
Imagery	PST6	0.30	0.53	-0.14
Attention Control	PST7	0.27	-0.41	0.39
Activation	PST8	0.57	0.07	-0.02
Rebound ability	MT1	0.17	-0.26	0.38
Ability to handle pressure	MT2	0.08	-0.01	0.28
Concentration ability	MT3	-0.18	0.09	0.43
Level of confidence	MT4	0.02	0.13	0.35
Motivation	MT5	-0.04	-0.05	-0.07
Skill imagery ability	MI1	-0.47	0.09	0.47
Strategy imagery ability	MI2	-0.01	0.05	0.69
Goal imagery ability	MI3	-0.69	0.03	0.47
Affect imagery ability	MI4	-0.52	0.07	0.19
Mastery Imagery Ability	MI5	-0.11	-0.01	0.70
Goal setting	PSC1	0.06	0.64	-0.08
Emotional Control	PSC2	-0.10	0.64	-0.02
Automaticity	PSC3	0.44	0.39	0.15
Relaxation	PSC4	0.38	-0.15	0.35
Self-Talk	PSC5	0.61	0.18	0.07
Imagery	PSC6	0.36	0.52	0.00
Positive Thinking	PSC7	0.17	-0.18	0.54
Activation	PSC8	0.44	0.17	0.23

Table 4.69 clearly indicates the principal component analysis varimax solution discrepancy of athletes

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.70

Factor one after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Goal imagery ability	MI3	-0.69
Self-talk	PSC5	0.61

Table 4.70 indicates the factors one loading and code of variables of self-rating of athletes was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The goal imagery ability and self-talk factors from mental imagery and performance strategies competition variable was loaded item and the athletes need to concentrate the above sub scale. This could be called the goal and self-talk factor. This accounts for 12.009% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.71

Factor two after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Goal setting	PST1	0.69
Goal setting	PSC1	0.64
Emotional control	PSC2	0.64

Table 4.71 indicates the factors two loading and code of variables of discrepancy of athletes was characterized by all the four variables mental toughness, mental imagery performance strategy training and performance strategies competition .The goal setting from performance strategies training and competition and emotional control from performance strategies competition variable was loaded item and the athletes need to concentrate the above sub scale This could be called as the goal and emotional factor. This accounts for 11.214% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition.

Table 4.72

Factor three after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Strategy imagery ability	MI2	0.69
Mastery imagery ability	MI5	0.70

Table 4.72 indicates the factors two loading and code of variables of discrepancy of athletes was characterized by all the four variables mental toughness, mental imagery performance strategy training and performance strategies competition .The strategy imagery and mastery imagery from mental imagery variable was loaded item and the athletes need to concentrate the above sub scale. This could be called the strategy and mastery factor. This accounts for 11.044% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition.

Discussion

In the case of discrepancy value the prominent factor value is indicated as the goal imagery ability and self-talk factors from mental imagery and performance strategies competition variable was loaded item and the athletes need to concentrate the above sub scale. This could be called the goal and self-talk factor. This accounts for 12.009% of the total common factors accounted for by all the three factors. In the case of factors two the goal setting from performance strategies training and competition and emotional control from performance strategies competition variable was loaded item and the athletes need to concentrate the above sub scale. This could be called as the goal and emotional factor. This accounts for 11.214% of the total common factors accounted for by all the three factors. In factor three indicates the strategy imagery and mastery imagery from mental imagery variable was loaded item and the athletes need to concentrate the above sub scale. This could be called the strategy and mastery factor. This accounts for 11.044% of the total common factors accounted for all the three factors.

Factor analysis of soccer group

Perceived rating

Table 4.73

Principal component analysis (Varimax solution)

Perceived rating		Factor 1	Factor 2	Factor 3
Eigenvalue		4.222	2.715	2.601
Total Variance. Exp		16.238	10.442	10.002
Cum. Variance .Exp		16.238	26.680	36.682
Sub variables	Code			
Goal setting	PST1	0.60	-0.49	0.12
Emotional Control	PST2	0.43	0.15	0.09
Automaticity	PST3	0.58	-0.15	-0.09
Relaxation	PST4	0.20	-0.02	0.31
Self-Talk	PST5	0.52	0.07	-0.16
Imagery	PST6	0.51	0.11	0.34
Attention Control	PST7	0.19	0.17	0.56
Activation	PST8	0.26	0.26	0.61
Rebound ability	MT1	0.10	0.15	0.00
Ability to handle pressure	MT2	0.18	-0.03	-0.33
Concentration ability	MT3	-0.11	0.69	-0.03
Level of confidence	MT4	0.06	-0.01	-0.24
Motivation	MT5	0.19	0.24	-0.45
Skill imagery ability	MI1	0.17	0.35	-0.39
Strategy imagery ability	MI2	0.20	0.40	-0.57
Goal imagery ability	MI3	-0.23	0.06	-0.49
Affect imagery ability	MI4	-0.04	0.54	0.13
Mastery Imagery Ability	MI5	-0.01	0.37	-0.04
Goal setting	PSC1	0.40	0.40	0.08
Emotional Control	PSC2	0.68	-0.20	0.11
Automaticity	PSC3	0.72	0.10	0.00
Relaxation	PSC4	0.29	0.51	0.16
Self-Talk	PSC5	0.66	0.30	-0.04
Imagery	PSC6	0.61	0.43	-0.04
Positive Thinking	PSC7	0.63	0.44	0.35
Activation	PSC8	0.20	0.30	0.61

Table 4.73 clearly indicates the principal component analysis varimax solution of perceived rating of soccer players

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.74

Factor one after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Goal setting	PST1	0.60
Emotional Control	PSC2	0.68
Automaticity	PSC3	0.72
Self-Talk	PSC5	0.66
Imagery	PSC6	0.61
Positive Thinking	PSC7	0.63

Table 4.74 indicates the factor one loading and code of variables of perceived rating of soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The concentration ability factor mental toughness variable was only the loaded item. This could be called a concentration factor. This accounts for 10.442% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.75

Factor two after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Concentration ability	MT3	0.69

Table 4.75 indicates the factor two loading and code of variables of perceived rating of soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The concentration ability factor mental toughness variable was only the loaded item. This could be called a concentration factor. This accounts for 10.442% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.76

Factor three after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Activation	PST8	0.61
Activation	PSC8	0.61

Table 4.76 indicates the factor three loading and code of variables of perceived rating of soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The activation factor from performance strategies and competition variable was the loaded items. This could be called an activation factor. This accounts for 10.002% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion

In perceived rating factor one the concentration ability factor mental toughness variable was only the loaded item. This could be called a concentration factor. This accounts for 10.442% of the total common factors accounted for all the three factors. In factor two the activation factor from performance strategies and competition variable was the loaded items. This could be called an activation factor. This accounts for 10.002% of the total common factors accounted for by all the three factors.

Self-rating

Table 4.77

Principal component analysis (Varimax solution)

		Factor 1	Factor 2	Factor 3
Eigenvalue		2.403	2.327	2.200
Total Variance. Exp		9.242	8.950	8.460
Cum. Variance .Exp		9.242	18.191	26.652
Sub variables	Code			
Goal setting	PST1	0.09	0.46	0.36
Emotional Control	PST2	0.03	0.15	0.47
Automaticity	PST3	0.18	0.13	0.48
Relaxation	PST4	0.10	0.43	0.04
Self-Talk	PST5	0.02	0.34	0.15
Imagery	PST6	-0.20	0.54	0.18
Attention Control	PST7	-0.36	-0.15	0.51
Activation	PST8	-0.12	0.40	-0.09
Rebound ability	MT1	-0.03	0.31	-0.40
Ability to handle pressure	MT2	-0.11	-0.04	0.55
Concentration ability	MT3	0.62	-0.10	0.19
Level of confidence	MT4	0.70	0.06	-0.14
Motivation	MT5	0.43	-0.02	-0.40
Skill imagery ability	MI1	-0.21	0.37	-0.46
Strategy imagery ability	MI2	-0.09	-0.26	0.17
Goal imagery ability	MI3	0.46	0.12	0.16
Affect imagery ability	MI4	0.04	-0.44	0.04
Mastery Imagery Ability	MI5	0.29	-0.20	0.45
Goal setting	PSC1	0.06	0.42	-0.04
Emotional Control	PSC2	0.23	0.23	0.31
Automaticity	PSC3	-0.46	0.09	-0.07
Relaxation	PSC4	0.38	0.03	-0.04
Self-Talk	PSC5	0.36	0.37	-0.18
Imagery	PSC6	0.07	0.53	-0.07
Positive Thinking	PSC7	0.30	-0.22	-0.01
Activation	PSC8	0.36	0.20	0.16

Table 4.77 clearly indicates the principal component analysis varimax solution of self-rating of soccer players

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.78

Factor one after rotated factor Loadings (Varimax solution)

Name of the variables	Code	Factor loadings
Concentration ability	MT3	0.62
Level of confidence	MT4	0.70

Table 4.78 indicates the factors one loading and code of variables of self-rating of soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The concentration ability and level of confidence factors from mental toughness variable was loaded. This could be called the confidence and concentration factor. This accounts for 9.242% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion

In self-rating factors one the concentration ability and level of confidence factors from the mental toughness variable was loaded. This could be called the confident and concentration factor. This accounts for 9.242% of the total common factors accounted for by all the three factors.

Discrepancy

Table 4.79

Principal component analysis (Varimax solution)

		Factor 1	Factor 2	Factor 3
Discrepancy				
Eigenvalue		3.333	2.613	2.072
Total Variance. Exp		12.819	10.051	7.969
Cum. Variance .Exp		12.819	22.870	30.839
Variables	Code			
Goal setting	PST1	0.50	0.05	-0.55
Emotional Control	PST2	0.45	0.17	-0.01
Automaticity	PST3	0.49	0.08	-0.13
Relaxation	PST4	0.09	0.57	-0.09
Self-Talk	PST5	0.60	-0.01	0.05
Imagery	PST6	0.34	0.49	-0.17
Attention Control	PST7	-0.05	0.59	0.01
Activation	PST8	0.20	0.64	0.16
Rebound ability	MT1	0.01	0.35	0.17
Ability to handle pressure	MT2	0.09	-0.19	-0.15
Concentration ability	MT3	0.05	0.04	0.51
Level of confidence	MT4	0.41	-0.07	0.42
Motivation	MT5	0.48	-0.38	0.15
Skill imagery ability	MI1	0.09	0.06	0.08
Strategy imagery ability	MI2	0.31	-0.34	0.03
Goal imagery ability	MI3	0.01	-0.28	-0.12
Affect imagery ability	MI4	-0.10	0.06	0.67
Mastery Imagery Ability	MI5	0.15	0.01	0.49
Goal setting	PSC1	0.19	0.53	-0.21
Emotional Control	PSC2	0.52	-0.16	-0.34
Automaticity	PSC3	0.40	0.21	-0.22
Relaxation	PSC4	0.46	0.00	0.20
Self-Talk	PSC5	0.52	0.35	0.11
Imagery	PSC6	0.58	0.19	0.14
Positive Thinking	PSC7	0.44	0.00	0.42
Activation	PSC8	0.32	0.48	0.02

Table 4.79 clearly indicates the principal component analysis varimax solution of discrepancy of soccer players

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition.

Table 4.80

Factor one after rotated factor loading (Varimax solution)

Sub variable	Code	Factor loadings
Self-talk	PST5	0.60

Table 4.80 indicates the factors one loading and code of variables of discrepancy value of soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The self-talk factors from performance strategies training variable was loaded item and the athletes need to concentrate the above sub scale .This could be called as the self-talk factor. This accounts for 12.819% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.81

Factor two after rotated factor Loadings (Varimax solution)

Sub variable	Code	Factor loadings
Activation	PST8	0.64

Table 4.81 indicates the factor two loading and code of variables of discrepancy value of soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition. The activation factor from performance strategies training variable was loaded and the soccer players need to concentrate the above sub scale .This could be called as the activation factor. This accounts for 10.051% of the total common factors accounting for all three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.82

Factor three after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Affect imagery ability	MI4	0.67

Table 4.82 indicates the factor three loading and code of variables of discrepancy value of soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition. The affect imagery ability from the mental imagery variable was a loaded item and the soccer players need to concentrate the above sub scale. This could be called the affect factor. This accounts for 7.696% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion

In the case of discrepancy factor one the self-talk factors from performance strategies training variable was loaded and the athletes need to concentrate the above sub scale .This could be called as the self-talk factor. This accounts for 12.819% of the total common factors accounted for by all the three factors. In the case of factor two loading the activation factor from performance strategies training variable was loaded and the soccer players needed to concentrate the above sub scale. This could be called the activation factor. This accounts for 10.051% of the total common factors accounted for all the three factors. In factor three the affect imagery ability from the mental imagery variable was a loaded item and the soccer players need to concentrate the above sub scale. This could be called the affect factor. This accounts for 7.696% of the total common factors accounted for the three factors.

Both athletic and soccer group

Perceived rating

Table 4.83

Principal component analysis (Varimax solution)

		Factor 1	Factor 2	Factor 3
Eigenvalue		4.672	3.471	3.045
Total Variance. Exp		17.970	13.349	11.713
Cum. Variance .Exp		17.970	31.319	43.032
Sub variables	Code			
Goal setting	PST1	0.08	-0.02	0.65
Emotional Control	PST2	0.09	0.21	0.47
Automaticity	PST3	0.11	0.03	0.60
Relaxation	PST4	-0.06	0.07	0.49
Self-Talk	PST5	0.14	0.05	0.58
Imagery	PST6	0.01	0.18	0.64
Attention Control	PST7	0.04	0.30	0.31
Activation	PST8	-0.04	0.48	0.19
Rebound ability	MT1	0.69	0.11	0.03
Ability to handle pressure	MT2	0.68	-0.08	0.19
Concentration ability	MT3	0.68	0.15	-0.01
Level of confidence	MT4	0.64	0.03	0.06
Motivation	MT5	0.67	0.07	0.05
Skill imagery ability	MI1	0.74	0.05	0.17
Strategy imagery ability	MI2	0.71	0.10	0.14
Goal imagery ability	MI3	0.69	-0.30	-0.03
Affect imagery ability	MI4	0.68	0.15	-0.03
Mastery Imagery Ability	MI5	0.52	0.26	0.01
Goal setting	PSC1	0.16	0.44	0.30
Emotional Control	PSC2	-0.07	0.34	0.47
Automaticity	PSC3	0.11	0.44	0.50
Relaxation	PSC4	0.18	0.69	-0.06
Self-Talk	PSC5	0.13	0.53	0.35
Imagery	PSC6	0.14	0.73	0.16
Positive Thinking	PSC7	0.08	0.77	0.33
Activation	PSC8	-0.03	0.67	-0.07

Table 4.83 clearly indicates the principal component analysis varimax solution of perceived rating of both athletes and soccer players

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.84

Factor one after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Rebound ability	MT1	0.69
Ability to handle pressure	MT2	0.68
Concentration ability	MT3	0.68
Level of confidence	MT4	0.64
Motivation	MT5	0.67
Skill imagery ability	MI1	0.74
Strategy imagery ability	MI2	0.71
Goal imagery ability	MI3	0.69
Affect imagery ability	MI4	0.68

Table 4.84 indicates the factor one loading and code of variables of perceived rating of both athletes and soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition. The skill strategy imagery ability factor from mental imagery variable was heavily loaded. This could be called a skill and strategy factor. This accounts for 17.970% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.85

Factor two after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Relaxation	PSC4	0.69
Imagery	PSC6	0.73
Positive Thinking	PSC7	0.77
Activation	PSC8	0.67

Table 4.85 indicates the factor two loading and code of variables of perceived rating of both athletes and soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition. The positive thinking and imagery factor from performance strategies variable was heavily loaded item. This could be called as thinking factor. This account for 13.349% of the total common factors accounted all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition.

Table 4.86

Factor three after rotated factor Loadings (Varimax solution)

Name of the variables	Code	Factor loadings
Goal setting	PST1	0.65
Automaticity	PST3	0.60
Imagery	PST6	0.64

Table 4.86 indicates the factor three loading and code of variables of perceived rating of both athletes and soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The goal setting factor from performance strategies training variable was heavily loaded item. This could be called a goal factor. This accounts for 11.713% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion

In the case of perceived rating factor one loading variables of both athletes and soccer players was the skill and strategy imagery ability factor from mental imagery variable was a heavily loaded item. This could be called a skill and strategy factor. This accounts for 17.970% of the total common factors accounting for all the three factors. In factor two the positive thinking and imagery factor from the performance strategies variable was heavily loaded. This could be called a thinking factor. This accounts for 13.349% of the total common factors accounting for all the three factors. In the case of factor three the goal setting factor from performance strategies training variable was heavily loaded. This could be called a goal factor. This accounts for 11.713% of the total common factors accounting for all the three factors.

Self-rating

Table 4.87

Principal component analysis (Varimax solution)

Self-rating		Factor 1	Factor 2	Factor 3
Eigenvalue		2.460	2.291	1.804
Total Variance. Exp		9.462	8.810	6.940
Cum. Variance .Exp		9.462	18.272	25.212
Variables	Code			
Goal setting	PST1	0.43	0.23	-0.01
Emotional Control	PST2	0.44	0.11	0.27
Automaticity	PST3	0.41	0.05	0.18
Relaxation	PST4	0.63	-0.06	0.05
Self-Talk	PST5	0.35	-0.09	0.37
Imagery	PST6	0.40	-0.11	0.09
Attention Control	PST7	-0.16	0.13	0.34
Activation	PST8	0.26	0.01	-0.08
Rebound ability	MT1	0.00	-0.10	0.38
Ability to handle pressure	MT2	0.08	0.21	0.24
Concentration ability	MT3	-0.08	0.32	-0.04
Level of confidence	MT4	0.09	0.04	-0.50
Motivation	MT5	-0.19	0.02	-0.48
Skill imagery ability	MI1	0.12	0.44	-0.28
Strategy imagery ability	MI2	0.17	0.57	0.12
Goal imagery ability	MI3	0.01	0.52	-0.30
Affect imagery ability	MI4	-0.21	0.60	-0.14
Mastery Imagery Ability	MI5	0.25	0.61	0.11
Goal setting	PSC1	0.40	0.08	0.03
Emotional Control	PSC2	0.43	0.29	-0.16
Automaticity	PSC3	0.06	0.03	0.47
Relaxation	PSC4	0.03	0.34	0.27
Self-Talk	PSC5	0.47	-0.20	-0.24
Imagery	PSC6	0.52	-0.24	-0.19
Positive Thinking	PSC7	-0.25	0.40	0.09
Activation	PSC8	0.20	0.20	-0.34

Table 4.87 clearly indicates the principal component analysis varimax solution of self-rating both athletes and soccer players

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.88

Factor one after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Relaxation	PST4	0.63

Table 4.88 indicates the factors one loading and code of variables of self-rating of both athletes soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The skill relaxation factor from performance strategies training variable was only loaded item. This could be called the relaxation factor. This accounts for 9.462% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.89

Factor two after rotated factor Loadings (Varimax solution)

Sub variables	Code	Factor loadings
Affect imagery ability	MI4	0.60
Mastery Imagery Ability	MI5	0.61

Table 4.89 indicates the factors two loading and code of variables of self-rating of both athletes soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The affect imagery and mastery imagery factor from sports imagery variables was the loaded item. This could be called the affect and mastery factor. This accounts for 8.810% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion

In self-rating the factors one loading variables of athletes and soccer players

was the relaxation factor from performance strategies training variable was only loaded item. This could be called the relaxation factor. This accounts for 9.462% of the total common factors accounted for by all the three factors. In factor two the affect imagery and mastery imagery factor from sports imagery variables was the loaded item. This could be called the affect and mastery factor. This accounts for 8.810% of the total common factors accounted for by all the three factors.

Discrepancy

Table 4.90

Principal component analysis (Varimax solution)

Discrepancy		Factor 1	Factor 2	Factor 3
Eigenvalue		3.150	2.381	2.357
Total Variance. Exp		12.117	9.156	9.066
Cum. Variance .Exp		12.117	21.273	30.339
Variables	Code			
Goal setting	PST1	0.71	-0.08	0.00
Emotional Control	PST2	0.51	0.01	0.14
Automaticity	PST3	0.48	0.19	0.19
Relaxation	PST4	0.28	0.37	0.03
Self-Talk	PST5	0.46	0.23	0.23
Imagery	PST6	0.52	0.26	-0.13
Attention Control	PST7	-0.22	0.60	0.07
Activation	PST8	0.16	0.70	-0.11
Rebound ability	MT1	0.08	0.19	0.36
Ability to handle pressure	MT2	-0.02	0.08	0.26
Concentration ability	MT3	-0.01	-0.01	0.52
Level of confidence	MT4	0.08	0.11	0.47
Motivation	MT5	0.07	-0.06	0.15
Skill imagery ability	MI1	0.06	-0.10	0.60
Strategy imagery ability	MI2	0.19	-0.05	0.61
Goal imagery ability	MI3	-0.13	-0.35	0.53
Affect imagery ability	MI4	-0.30	0.01	0.27
Mastery Imagery Ability	MI5	-0.07	0.19	0.54
Goal setting	PSC1	0.54	0.11	-0.05
Emotional Control	PSC2	0.60	-0.26	-0.03
Automaticity	PSC3	0.46	0.25	0.06
Relaxation	PSC4	0.11	0.35	0.19
Self-Talk	PSC5	0.41	0.48	0.04
Imagery	PSC6	0.53	0.24	0.11
Positive Thinking	PSC7	-0.01	0.29	0.41
Activation	PSC8	0.20	0.61	0.06

Table 4.90 clearly indicates the principal component analysis varimax solution of discrepancy of both athletes and soccer players

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.91

Factor one after rotated factor loadings (Varimax solution)

Sub variables	Code	Factor loadings
Goal setting	PST1	0.71
Emotional control	PSC2	0.60

Table 4.91 indicates the factors one loading and code of variables of discrepancy value of both athletes and soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The goal setting factor from performance strategies training variable and emotional control factor from performance strategies competition was loaded item and the athletes need to concentrate the above sub scale. This could be called as the goal and emotional factor. This accounts for 12.117% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.92

Factor two after rotated factor Loadings (Varimax solution)

Name of the variables	Code	Factor loadings
Attention Control	PST7	0.60
Activation	PST8	0.70
Activation	PSC8	0.61

Table 4.92 indicates the factors two loading and code of variables of discrepancy value of both athletes and soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The attention control factor from performance strategies training variable and activation factor from performance strategies competition was loaded item and the athletes need to concentrate the above sub scale. This could be called as the attention and activation factor. This accounts for 9.156% of the total common factors accounting for all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition.

Table 4.93

Factor three after rotated factor loadings (Varimax solution)

Sub variables	Code	Factor loadings
Skill imagery ability	MI1	0.60
Strategy imagery ability	MI2	0.61

Table 4.93 indicates the factors three loading and code of variables of discrepancy value of both athletes and soccer players was characterized by all the four variables namely mental toughness, mental imagery performance strategy training and performance strategies competition .The skill imagery and strategy imagery factor from mental imagery variables was loaded item and the athletes need to concentrate the above sub scale. This could be called as the skill and strategy factor. This accounts for 9.066% of the total common factors accounted for by all the three factors.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion

In the case of discrepancy the goal setting factor from performance strategies training variable and emotional control factor from performance strategies competition was loaded item and the athletes need to concentrate the above sub scale. This could be called as the goal and emotional factor. This accounts for 12.117% of the total common factors accounting for all the three factors. In factors two the attention control factor from performance strategies training variable and activation factor from performance strategies competition was loaded item and the athletes need to concentrate the above sub scale. This could be called as the attention and activation factor. This accounts for 9.156% of the total common factors accounting for all the three factors. In the case of factors three the skill imagery and strategy imagery factor from mental imagery variables was loaded item and the athletes need to concentrate the above sub scale. This could be called as the skill and strategy factor. This accounts for 9.066% of the total common factors accounted for by all the three factors.

Performance profiling

In the case of performance profiling the method of analysis was only after the descriptive profile, analysis of variance and factor analysis. The mean value of the ratings such as perceived, self and discrepancy value leads to the results. The calculation of best ten and last ten of variables from perceived rating, self-rating, and discrepancy of athletes and soccer players. The various tables also indicate the best and last ten variables from both athletics and soccer. From the results the table interpretation was as follows among athletes and soccer players.

The specialty of perceived rating was the subjects predicting their own score from out of ten of each sub domains of variables. With help of excel formula the value sorted from highest to lowest and considering the first and last ten sub variables of each ratings for interpretation.

In case of self-rating were the subjects predicting their own score from out of ten of each sub domains of variables. With help of excel formula the value sorted from highest to lowest and considering the first and last ten sub variables of each ratings for interpretation. Discrepancy value is mainly based on the perceived and self-rating because with the help of mathematical formula the highest value of discrepancy of the variables was needed to concentrate more.

In the part of performance profiling the various results indicated from each group such as sprinters, jumpers and long distance runners from athletics and defenders, midfielders and strikers from soccer groups. The perceived rating and self-rating lead to the results of discrepancy value of variables such as mental toughness, mental imagery and performance strategies. The results also included in the form of total performance profiling of athletics and soccer groups. Here perceived rating and self-rating clearly indicates the highest value is best for all sub variables. In the case of discrepancy value the lowest discrepancy value is the best. The top ten sub variables and last ten sub variables clearly identify through the performance profiling results based on perceived rating self-rating and discrepancy. The purpose of the discussion: the interpretation based on the best and last ten sub variables from the athletics group and soccer group of perceived rating, self-rating and discrepancy.

Athletics group

Table 4.94

Performance profiling of sprinters

Rank	V	Sub variables	Perceived Rating	Self-Rating	Discrepancy
1.	PSC	Positive Thinking	5.85	7	17.55
2.	PST	Attention Control	5.55	6.4	19.98
3.	MI	Affect imagery	7.75	7.35	20.53
4.	PST	Activation	5.2	5.95	21.06
5.	PST	Relaxation	5.4	6.1	21.06
6.	PSC	Relaxation	5.9	6.4	21.24
7.	PSC	Activation	5.6	6.2	21.28
8.	PST	Imagery	5.55	6.1	21.64
9.	MI	Mastery Imagery	7.4	7.05	21.83
10.	MI	Skill imagery	7.3	6.95	22.26
11.	PST	Goal setting	6.05	6.25	22.68
12.	PSC	Imagery	5.9	5.95	23.89
13.	MI	Goal imagery	7.85	6.95	23.94
14.	MT.	Motivation	7.6	6.8	24.32
15.	PSC	Emotional Control	6.2	6.05	24.49
16.	MI	Strategy imagery	7.1	6.55	24.49
17.	PST	Self-Talk	5.85	5.8	24.57
18.	PSC	Self-Talk	6.25	6.05	24.68
19.	PST	Emotional Control	6.25	6	25
20.	PST	Automaticity	6.2	5.8	26.04
21.	PSC	Goal setting	6.55	6	26.2
22.	PSC	Automaticity	6.3	5.7	27.09
23.	MT	Level of confidence	7.55	5.8	31.71
24.	MT	Concentration ability	7.05	5.15	34.19
25.	MT	Ability to handle pressure	6.9	4.5	37.95
26.	MT	Rebound ability	7.7	4	46.2
Average			6.49	6.10	25.22

Table 4.94 shows performance profiling of sprinters with an average of discrepancy 25.22. The lowest value is best in the case of discrepancy value. Here positive thinking, attention control from performance strategies was the best among sprinters.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.95

Performance profiling of jumpers

Rank	V	Sub variables	Perceived Rating	Self-Rating	Discrepancy
1.	PSC.	Relaxation	6.05	7	18.15
2.	PST	Relaxation	6.35	6.95	19.36
3.	PSC	Activation	5.25	6	21
4.	PST	Activation	5.1	5.85	21.16
5.	PST	Goal setting	5.75	6.05	22.71
6.	MI	Affect imagery ability	7.3	6.85	22.99
7.	PSC	Imagery	5.85	6	23.4
8.	PST	Automaticity	6	6.1	23.4
9.	PSC	Positive Thinking	5.9	6	23.6
10.	PSC	Emotional Control	6.05	6	24.2
11.	PSC	Self-Talk	6.05	6	24.2
12.	PST	Attention Control	6	5.95	24.3
13.	PST	Imagery	6.1	6	24.4
14.	PSC	Automaticity	6.1	6	24.4
15.	PST	Emotional Control	6.45	6.15	24.83
16.	PSC	Goal setting	6.4	6	25.6
17.	PST	Self-Talk	6.4	5.9	26.24
18.	MT	Motivation	8.1	6.75	26.32
19.	MI	Mastery Imagery Ability	7.25	6.35	26.46
20.	MI	Skill imagery ability	6.95	5.95	28.14
21.	MI	Strategy imagery ability	7	5.95	28.35
22.	MT	Ability to handle pressure	6.9	5.65	30.01
23.	MI	Goal imagery ability	7.55	6	30.2
24.	MT	Level of confidence	7.2	5.5	32.4
25.	MT	Concentration ability	6.95	4.05	41.35
26.	MT	Rebound ability	7.6	4.55	41.42
		Average	6.48	5.98	26.10

Table 4.95 shows performance profiling of jumpers with an average of discrepancy 26.10. The lowest value is best in the case of discrepancy value. Here relaxation and activation from performance strategies was the best among jumpers

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.96

Performance profiling of long distance runners

Rank	V	Sub variables	Perceived rating	Self-Rating	Discrepancy
1.	MT	Motivation	6.65	7.35	17.62
2.	PSC	Positive Thinking	5.8	6.85	18.27
3.	PSC	Activation	5.3	6.1	20.67
4.	PSC	Relaxation	5.8	6.4	20.88
5.	PST	Attention Control	5.85	6.25	21.93
6.	MI	Affect imagery ability	6.9	6.8	22.08
7.	PST	Activation	5.6	6.05	22.12
8.	PST	Goal setting	5.85	6.15	22.52
9.	PSC	Goal setting	6.25	6.35	22.81
10.	MI	Skill imagery ability	5.8	6.05	22.91
11.	PSC	Imagery	5.8	6	23.2
12.	PST	Automaticity	5.85	6	23.4
13.	PST	Imagery	5.95	6.05	23.50
14.	MT	Level of confidence	6.45	6.35	23.54
15.	PSC	Automaticity	5.95	5.9	24.39
16.	PSC	Self-Talk	5.75	5.75	24.43
17.	MI	Goal imagery ability	7.3	6.65	24.45
18.	PST	Relaxation	6	5.85	24.9
19.	PST	Self-Talk	6.3	5.95	25.51
20.	PSC	Emotional Control	6.15	5.85	25.52
21.	PST	Emotional Control	6.55	5.95	26.52
22.	MI	Mastery Imagery	6.85	5.8	28.77
23.	MI	Strategy imagery ability	6.25	5.35	29.06
24.	MT	Concentration ability	6.45	4.85	33.21
25.	MT	Ability to handle pressure	6.4	4.7	33.92
26.	MT	Rebound ability	7.05	5.15	34.19
		Average	6.18	6.01	24.63

Table 4.96 shows performance profiling of long distance runners with an average of discrepancy 24.63. The lowest value is best in the case of discrepancy value. Here, dealing with motivation from mental toughness and positive thinking from performance strategies was the best among long distance runners.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.97

Best of ten performances profiling among athletics group

Rank	Group	SV	Sub variables	Perceived rating	Self-Rating	Discrepancy
1	Sprinters	PSC	Positive Thinking	5.85	7	17.55
2	Long Distance	MT	Motivation	6.65	7.35	17.62
3	Jumpers	PSC	Relaxation	6.05	7	18.15
4	Long Distance	PSC	Positive Thinking	5.8	6.85	18.27
5	Jumpers	PST	Relaxation	6.35	6.95	19.36
6	Sprinters	PST	Attention Control	5.55	6.4	19.98
7	Sprinters	MI	Affect imagery	7.75	7.35	20.53
8	Long Distance	PSC	Activation	5.3	6.1	20.67
9	Long Distance	PSC	Relaxation	5.8	6.4	20.88
10	Jumpers	PSC	Activation	5.25	6	21
Average				6.03	6.74	19.40

Table 4.97 shows the best ten of performance profiling of athletes with an average discrepancy 19.40. The lowest value is best in the case of discrepancy value. Here positive thinking of sprinters is best from performance strategies and dealing with motivation of long distance runners from mental toughness was the best among athletes.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.98

Last ten performances profiling of athletics group

Rank	Group	SV No	Sub variables	Perceived rating	Self- Rating	Discrepancy
69	Sprinters	MT	Level of confidence	7.55	5.8	31.71
70	Jumpers	MT	Level of confidence	7.2	5.5	32.4
71	Long Distance	MT	Concentration ability	6.45	4.85	33.2175
72	Long Distance	MT	Ability to handle pressure	6.4	4.7	33.92
73	Sprinters	MT	Concentration ability	7.05	5.15	34.1925
74	Long Distance	MT	Rebound ability	7.05	5.15	34.1925
75	Sprinters	MT	Ability to handle pressure	6.9	4.5	37.95
76	Jumpers	MT	Concentration ability	6.95	4.05	41.3525
77	Jumpers	MT	Rebound ability	7.6	4.55	41.42
78	Sprinters	MT	Rebound ability	7.7	4	46.2
			Average	7.08	4.82	36.65

Table 4.98 shows the last ten of performance profiling of athletes with an average discrepancy 36.65. The highest value indicates need to concentrate the sub variables such as rebound ability and concentration ability from mental toughness variable was very low level among sprinters and jumpers.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion on findings in performance profiling of athletic group

While considering the perceived rating of the athletics group and various sub variables and rating 7.64 was the average and also indicating the mental toughness and mental imagery variables are more in top list especially sprinters and jumpers. In

the case of considering the last ten 5.43 was the average and the activation from performance strategies from both training and practice subscale among athletes especially sprinters and jumpers.

In the case of self-rating 7.03 was the average of top ten and dealing with motivation from mental toughness variables of long distance runners is best among athletes. The mental imagery variables are more among sprinters. The last ten 4.78 was the average and all the athletes are very low level mental toughness especially sprinters and jumpers.

While sorting the both perceived and self-rating among athletics group 7.65 was the average and the perceived rating is more than compared to self-rating. Jumpers and sprinters are predicted more compared to long distance runners. Last ten 4.72 was the average and the self-rating is more than compared to perceived rating. Table also indicates that all the athletic groups self-rated is very less in mental toughness and performance strategies training.

The discrepancy value indicates sprinters with an average of discrepancy 25.22. The lowest value is best in the case of discrepancy value. Here positive thinking, attention control from performance strategies was the best among sprinters. In the case of jumpers with an average of discrepancy 26.10 and relaxation and activation from performance strategies was the best among jumpers. The long distance runners are showing an average of discrepancy 24.63 and deal with motivation from mental toughness and positive thinking from performance strategies was the best among long distance runners.

While considering the performance profiling of a total athletic group with an average discrepancy 19.40 and positive thinking of sprinters is best from performance strategies and deal with motivation of long distance runners from mental toughness was the best among athletes. In the case of last ten of performance profiling of athletes with an average discrepancy 36.65. The highest value indicates need to concentrate the sub variables such as rebound ability and concentration ability from mental toughness variables are very low level among sprinters and jumpers

Soccer group

Table 4.99

Performance profiling of defenders

Rank	V	Sub variables	Perceived Rating	Self-Rating	Discrepancy
1.	PST	Activation	4.55	6.1	17.74
2.	PST	Relaxation	5.95	6.95	18.14
3.	PSC	Activation	4.85	6.25	18.18
4.	PST	Goal setting	5.05	6.3	18.68
5.	MI	Skill imagery ability	4.75	6.05	18.76
6.	MT	Rebound ability	3.7	4.85	19.05
7.	PSC	Relaxation	5.45	6.45	19.34
8.	PSC	Positive Thinking	5.4	6.4	19.44
9.	PSC	Goal setting	5.55	6.35	20.25
10.	PSC	Self-Talk	5.4	6.2	20.52
11.	PST	Automaticity	5.55	6.25	20.81
12.	PST	Attention Control	5.4	6.05	21.33
13.	PSC	Imagery	5.4	6.05	21.33
14.	PST	Imagery	5.7	6.25	21.37
15.	MI	Strategy imagery ability	5.7	6.2	21.66
16.	PST	Emotional Control	5.9	6.2	22.42
17.	MI	Mastery Imagery Ability	5.85	6.1	22.81
18.	PSC	Emotional Control	5.65	5.8	23.73
19.	MT	Motivation	6.85	6.45	24.31
20.	MI	Affect imagery ability	6.55	6.1	25.54
21.	PST	Self-Talk	5.95	5.7	25.58
22.	PSC	Automaticity	5.65	5.4	25.99
23.	MI	Goal imagery ability	7.2	6.2	27.36
24.	MT	Concentration ability	5.85	4.65	31.29
25.	MT	Level of confidence	6.45	4.75	33.86
26.	MT	Ability to handle pressure	5.9	4.1	34.81
		Average	5.62	5.92	22.85

Table 4.99 shows performance profiling of defenders with an average of discrepancy 22.85. The lowest value is best in the case of discrepancy value. Here relaxation and relaxation from performance strategies training was the best among defenders.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.100

Performance profiling of midfielders

Rank	V	Sub variables	Perceived Rating	Self-Rating	Discrepancy
1.	MI	Skill imagery ability	3.55	5.7	15.26
2.	PST	Self-Talk	5.1	6.5	17.85
3.	PSC	Goal setting	5.45	6.5	19.07
4.	PSC	Imagery	5.45	6.45	19.34
5.	PST	Activation	5.15	6.2	19.57
6.	PST	Automaticity	5.3	6.25	19.87
7.	PST	Imagery	5.3	6.25	19.87
8.	PSC	Positive Thinking	5.6	6.45	19.88
9.	PSC	Relaxation	5.9	6.55	20.35
10.	PST	Relaxation	5.9	6.5	20.65
11.	PSC	Activation	5.4	6.15	20.79
12.	PST	Goal setting	5.45	6.15	20.98
13.	MI	Goal imagery ability	5.2	5.9	21.32
14.	MT	Rebound ability	4.05	4.65	21.66
15.	MI	Strategy imagery ability	5.25	5.8	22.05
16.	PST	Attention Control	5.65	6.05	22.31
17.	MI	Affect imagery ability	5.8	6.05	22.91
18.	PSC	Self-Talk	5.7	5.9	23.37
19.	MI	Mastery Imagery Ability	6.45	6.35	23.54
20.	PSC	Emotional Control	5.75	5.9	23.57
21.	PST	Emotional Control	5.85	5.85	24.27
22.	PSC	Automaticity	5.7	5.7	24.51
23.	MT	Level of confidence	5.75	5.15	27.88
24.	MT	Ability to handle pressure	5.1	4.25	29.32
25.	MT	Motivation	6.2	5.05	30.69
26.	MT.	Concentration ability	5.7	3.75	35.62
		Average	5.45	5.84	22.55

Table 4.100 shows performance profiling of midfielders with an average of discrepancy 22.55. The lowest value is best in the case of discrepancy value. Here skill imagery ability from mental imagery variable and self-talk from performance strategies training was the best among midfielders.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition.

Table 4.101
Performance profiling of strikers

Rank	V	Sub variables	Perceived Rating	Self-Rating	Discrepancy
1.	MI	Skill imagery ability	4.5	6.3	16.65
2.	MT	Motivation	5.7	6.95	17.38
3.	MI	Affect imagery ability	5.25	6.6	17.85
4.	PST	Attention Control	5.5	6.35	20.07
5.	MI	Strategy imagery ability	5.1	6.05	20.14
6.	PSC	Positive Thinking	6.3	6.8	20.16
7.	MI	Mastery Imagery Ability	5.8	6.5	20.3
8.	PSC	Activation	5.5	6.2	20.9
9.	PST	Activation	5.5	6.15	21.17
10.	PST	Relaxation	5.9	6.35	21.53
11.	PSC	Relaxation	6.05	6.35	22.08
12.	MI	Goal imagery ability	5.8	6.1	22.62
13.	PST	Imagery	6	6.15	23.1
14.	PST	Goal setting	5.95	6.1	23.2
15.	PST	Self-Talk	5.95	6.1	23.2
16.	PSC	Emotional Control	6.35	6.2	24.13
17.	PSC	Self-Talk	6.3	6.15	24.25
18.	PST	Emotional Control	6.35	6.15	24.44
19.	PST	Automaticity	6.2	6.05	24.49
20.	PSC	Imagery	6.3	6	25.2
21.	MT	Rebound ability	5.15	5.05	25.49
22.	PSC	Goal setting	6.55	6.1	25.54
23.	PSC	Automaticity	6.25	5.85	25.93
24.	MT	Ability to handle pressure	6	5	30
25.	MT	Level of confidence	6.2	4.9	31.62
26.	MT	Concentration ability	5.85	4.3	33.34
		Average	6.62	6.81	26.29

Table 4.101 shows performance profiling of strikers with an average of discrepancy 26.29. The lowest value is best in the case of discrepancy value. Here skill imagery ability from mental imagery variable and deal with motivation from mental toughness variables was the best among strikers.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition.

Table 4.102

Best of ten performances profiling of soccer players

Rank	Group	V	Sub Variables	Perceived Rating	Self- rating	Discrepancy
1	Mid fielders	MI	Skill imagery	3.55	5.7	15.26
2	Strikers	MI	Skill imagery	4.5	6.3	16.65
3	Strikers	MT	Motivation	5.7	6.95	17.38
4	Defenders	PST	Activation	4.55	6.1	17.74
5	Mid fielders	PST	Self-Talk	5.1	6.5	17.85
6	Strikers	MI	Affect imagery	5.25	6.6	17.85
7	Defenders	PST	Relaxation	5.95	6.95	18.14
8	Defenders	PSC	Activation	4.85	6.25	18.18
9	Defenders	PST	Goal setting	5.05	6.3	18.68
10	Defenders	MI	Skill imagery	4.75	6.05	18.76
Average				4.92	6.37	17.64

Table 4.102 shows the best ten of performance profiling of soccer players with an average discrepancy 17.64. The lowest value is best in the case of discrepancy value. Here skill imagery ability from mental imagery of strikers and mid fielders was the best among the soccer players.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.103

Last ten performances profiling of soccer

Rank	Group	V	Sub variables	Perceived rating	Self-Rating	Discrepancy
69	Mid fielders	MT	Level of confidence	5.75	5.15	27.88
70	Mid fielders		Ability to handle pressure	5.1	4.25	29.32
71	Strikers	MT	Ability to handle pressure	6	5	30
72	Mid fielders	MT	Motivation	6.2	5.05	30.69
73	Defenders	MT	Concentration ability	5.85	4.65	31.29
74	Strikers	MT	Level of confidence	6.2	4.9	31.62
75	Strikers	MT	Concentration ability	5.85	4.3	33.34
76	Defenders	MT	Level of confidence	6.45	4.75	33.86
77	Defenders	MT	Ability to handle pressure	5.9	4.1	34.81
78	Mid fielders	MT	Concentration ability	5.7	3.75	35.62
Average				5.9	4.59	31.84

Table 4.102 shows the last ten of performance profiling of soccer players with an average discrepancy 31.84. The highest value indicates need to concentrate the sub variables such as ability to handle pressure and concentration ability from mental toughness variable was very low level among defenders and midfielders.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion on findings in performance profiling of soccer group

While considering the top ten perceived rating of soccer group and various sub variables and rating 6.53 was the average and also indicating the variables goal and affect imagery from mental imagery and deal with motivation from mental toughness was the highest perceived rating among defenders. In the case of the last ten perceived ratings of soccer groups with sub variables, numbers and rating with

an average 5. The sub variables activation from performance strategies and skill imagery from mental imagery was the lowest perceived rating among defenders.

In the case of self-rating 6.63 was the average of top ten and the variables were dealing with motivation from mental toughness and relaxation from performance strategies training are high self-rating among strikers and defenders. In the case of last ten 4.52 was the average of last and the variables was ability to handle pressure concentration from mental toughness are lowest self-rating among defenders and midfielders

While sorting the both perceived and self-rating among soccer group 6.75 was the average and of top ten and the defenders are highest perceived rating in goal imagery ability from mental imagery variable. In the case of the last ten both perceived rating and self-rating 4.14 was the average and the perceived rating is low level skill imagery among mid fielders and rebound ability from mental toughness variable showing low level among defenders.

Athletics and soccer group

Table 4.104

Best of ten performances profiling of both athletics and soccer

Rank	Game	Group	V	Sub Variables	Perceived Rating	Self-Rating	Discrepancy
1.	Soccer	Mid fielders	MI	Skill imagery	3.55	5.7	15.26
2.	Soccer	Strikers	MI	Skill imagery	4.5	6.3	16.65
3.	Soccer	Strikers	MT	Motivation	5.7	6.95	17.38
4.	Athletics	Sprinters	PSC	Positive Thinking	5.85	7	17.55
5.	Athletics	Long Distance	MT	Motivation	6.65	7.35	17.62
6.	Soccer	Defenders	PST	Activation	4.55	6.1	17.74
7.	Soccer	Mid fielders	PST	Self-Talk	5.1	6.5	17.85
8.	Soccer	Strikers	MI	Affect imagery	5.25	6.6	17.85
9.	Soccer	Defenders	PST	Relaxation	5.95	6.95	18.14
10.	Athletics	Jumpers	PSC	Relaxation	6.05	7	18.15
Average					5.31	6.5	17.41

Table 4.104 shows the best ten of performance profiling of both athletes and soccer players with an average discrepancy 18.15. The lowest value is best in the case of discrepancy value. Here positive thinking of sprinters is best from performance strategies and skill imagery ability of midfielders and strikers from mental imagery was the best among both athletes and soccer players.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Table 4.105

Last ten of performance profiling of both athletics and soccer

Rank	Game	Group	V	Sub variables	Perceived rating	Self-Rating	Discrepancy
78	Athletics	Sprinters	MT	Rebound ability	7.7	4	46.2
77	Athletics	Jumpers	MT	Rebound ability	7.6	4.55	41.42
76	Athletics	Jumpers	MT	Concentration ability	6.95	4.05	41.35
75	Athletics	Sprinters	MT	Ability to handle pressure	6.9	4.5	37.95
74	Soccer	Mid fielders	MT	Concentration ability	5.7	3.75	35.62
73	Soccer	Defenders	MT	Ability to handle pressure	5.9	4.1	34.81
72	Athletics	Sprinters	MT	Concentration ability	7.05	5.15	34.19
71	Athletics	Long Distance	MT	Rebound ability	7.05	5.15	34.19
70	Athletics	Long Distance	MT	Ability to handle pressure	6.4	4.7	33.92
69	Soccer	Defenders	MT	Level of confidence	6.45	4.75	33.86
Average					6.77	4.47	37.35

Table 4.105 shows the last ten of performance profiling of athletes with an average discrepancy 37.35. The highest value indicates need to concentrate the sub variables such as ability to handle pressure of long distance runners and level of confidence of defenders from mental toughness variable was very low level both athletic and soccer group.

Note: Code of sub variables such as **PST** as performance strategies training **MT** as mental Toughness, **MI** as mental Imagery and **PSC** for performance strategies competition

Discussion on findings in performance profiling of athletics and soccer group

The discrepancy value indicates of defenders with an average of discrepancy 22.85. The lowest value is best in the case of discrepancy value and relaxation from performance strategies training was the best among defenders. In the case of midfielders with an average of discrepancy 22.55 and skill imagery ability from mental imagery variable and self-talk from performance strategies training was the best among midfielders. An average of discrepancy 26.29 and the skill imagery

ability from mental imagery variable and deal with motivation from mental toughness variables was the best among strikers.

While considering the performance profiling of the total group with an average discrepancy of 18.15 and positive thinking of sprinters is best from performance strategies and skill imagery ability of midfielders and strikers from mental imagery was the best among both athletes and soccer players. In the case of last ten with an average discrepancy 37.35. The highest value indicates need to concentrate the sub variables such as ability to handle pressure of long distance runners and level of confidence of defenders from mental toughness variable was very low level both athletic and soccer group.

Discussion on hypothesis

The research scholar formulated fourteen hypotheses for this study. The analysis and results have directed to the following decisions for the hypothesis

1. The first hypothesis of the study stated that there would be significant differences in mental toughness perceived rating, self-rating and discrepancy among athletics groups. The results were found opposites to the hypothesis because no significant differences were observed among athletes in mental toughness perceived rating self-rating and discrepancy. Therefore, the hypotheses were rejected.
2. The second hypothesis stated that there would be significant differences in mental toughness perceived rating, self-rating and discrepancy among soccer groups. In the case of perceived rating the hypothesis was rejected because there will not be any significant differences found among soccer players. In the case of self-rating and discrepancy the differences found in deal with motivation. Hence the hypothesis was partially accepted and rejected.
3. The third hypothesis of the study stated that there would be significant differences in mental imagery perceived rating, self-rating and discrepancy among athletics groups. The results were found opposites to the hypothesis because no significant differences were observed among athletes in mental

imagery perceived rating self-rating and discrepancy. Therefore, the hypothesis were rejected

4. The hypothesis number four stated that there would be significant differences in mental imagery perceived rating, self-rating and discrepancy among soccer groups. In the case of perceived rating the hypothesis was accepted because significant differences were found in goal imagery ability among soccer players. In the case of self-rating and discrepancy the differences were not found. Hence the hypothesis was accepted in the case of perceived rating and rejected in the case of self-rating and discrepancy.
5. The fifth hypothesis of the study stated that there would be significant differences in performance strategies training sub scale perceived rating, self-rating and discrepancy among athletics groups. The results were found differences among athletes in relaxation from perceived, self and discrepancy. Therefore, the hypothesis was accepted only in the case of relaxation among athletes in the case of performance strategies training sub scale.
6. The hypothesis number six was stated that there would be significant differences in performance strategies training sub scale perceived rating, self-rating and discrepancy among soccer groups. In the case three ratings the hypothesis were accepted because significant differences found in goal setting and self-talk from perceived rating, relaxation from self-rating and goal setting from discrepancy among soccer players. Hence the hypothesis was accepted in the case of perceived rating self-rating and discrepancy.
7. The hypothesis number seven of the study stated that there would be significant differences in performance strategies competition sub scale of perceived rating, self-rating and discrepancy among athletics groups. The results were found opposite to the hypothesis because no significant differences were observed among athletes in performance strategies competition perceived rating self-rating and discrepancy. Therefore, the hypotheses were rejected.

8. The hypothesis number eight stated that there would be significant differences found in performance strategies competition sub-scale of perceived rating, self-rating and discrepancy among soccer groups. In the case perceived rating and discrepancy hypothesis were accepted because significant differences were found among soccer players. Hence the hypothesis was accepted in the case of perceived rating and discrepancy and rejected in the case of self-rating.
9. The number nine hypothesized that there would be prominent mental toughness factors in perceived rating, self-rating and discrepancy among athletics groups. The results were found to be similar to the hypothesis because prominent mental toughness factors observed among athletes. Hence the hypothesis was accepted.
10. In the case of the tenth hypothesis of factor analysis it was hypothesized that there would be prominent mental toughness factors in perceived rating, self-rating and discrepancy among soccer groups. In the case of perceived and self-rating the hypothesis was accepted because they found the mental toughness factors. In the case of discrepancy the specialty of the lowest discrepancy value was best among the group so the factor loading was not included in the table. The final hypothesis was actually rejected because the mental toughness factors are not found in discrepancy among soccer groups. The prominent factors in the case of discrepancy need more concentration to the players because the highest discrepancy value.
11. Number eleven was hypothesized that there would be prominent mental imagery factors in perceived rating, self-rating and discrepancy among athletics groups. The results were found to be similar to the hypothesis because prominent mental toughness factors observed among athletes. Hence the hypothesis was accepted.
12. In the case of number twelve factor analysis it was hypothesized that there would be prominent mental imagery factors in perceived rating, self-rating and discrepancy among soccer groups. In the case of perceived and self-rating the hypothesis was rejected because it observed the mental toughness

factors. In the case of discrepancy the hypothesis was rejected because the mental imagery factors are not found. In the case of discrepancy the mental imagery factor was observed. Hence the hypothesis was accepted.

13. It was hypothesized that in hypothesis number thirteen there would be prominent training and competition performance strategy factors in perceived rating, self-rating and discrepancy among athletics groups. In the case of perceived, self and discrepancy from training subscales the hypothesis were accepted because observed the strategy factors. In the case of self-rating the hypothesis was rejected because the strategy factors are not found. Hence the hypothesis was rejected in the case performance strategies competition subscale among athletes.
14. It was hypothesized that in the number of fourteen there would be prominent training and competition performance strategy factors in perceived rating, self-rating and discrepancy among soccer groups. In the case of perceived rating hypothesis were accepted because they observed the strategy factors. In the case of self-rating the hypothesis was rejected because the strategy factors are not found. Hence the hypothesis was partially accepted and rejected in the case performance strategies competition subscale among soccer players.



Chapter V

**SUMMARY, CONCLUSIONS AND
RECOMMENDATIONS**

Chapter V

SUMMARY, CONCLUSION AND RECOMMENDATION

Modern sports and competition nearly have the application of psychological principles and mental training. Psychology is useful within physical activity as it can be used to promote and influence one's perspective on the benefits of health and used within the education system to help encourage all students, despite their physical ability, to participate in a healthy and active lifestyle. Sport psychology involves the study of the psychological factors related to participation and performance in sport.

Summary

The main purpose of the study was to analyze the descriptive profile, analysis of variance, factor analysis and performance profiling of mental toughness, imagery and performance strategies variables among athletes and soccer players. The analysis mainly depends upon the perceived rating, self-rating and discrepancy value.

The purpose of the present study was to assess the performance profiling of sports mental toughness, imagery and strategy skills among track and field athletes and soccer players.

The study was delimited to the total number of 120 senior level men category players who participated national level tournaments and events from athletics and soccer with the age range between 19 to 29. The subjects divided into three group each from athletics and soccer such as sprinters, jumpers and long distance runners from athletics and defenders, midfielders and strikers from soccer. The questionnaire was used such as a mental toughness questionnaire by Dr. Alan Goldberg, sports Imagery ability by Jennifer Cumming and a test of performance strategies by Thomas et.al. The final result of performance profiling the investigator collected the perceived rating of each subscale comes under the each variable. The data scoring results converted into decimals and result was the self-rating. The value of perceived rating and self-rating leded the discrepancy value of each subscales with the mathematical formula. The statistical techniques were the descriptive profiling, analysis of variance, factor analysis and performance profiling.

The results of the study were revealed the descriptive profile, analysis of variance, factor analysis and performance profiling of both athletics and soccer group. The mental toughness, mental imagery, performance strategy variables are compared based on the ratings such as perceived, self and discrepancy. The performance profiling results mainly based on the perceived and self-rating. The mathematical formula with the help of MS excels leads to the discrepancy value. The final results show in the factor analysis prominent factors from both athletics and soccer group. The factor analysis and performance profiling indicates the prominent factors and discrepancy value respectively. The discrepancy value clearly indicates the each discrepancy value of variables and total discrepancy of both athletics and soccer group. Performance profiling results indicates the best and last ten variables in each rating such as perceived rating, self –rating and discrepancy.

Conclusions

The findings of the study are given below among athletics group

1. It was found that the descriptive profile of variables is not similar in perceived rating, self-rating and discrepancy among athletes.
2. It was found that the analysis of variance mental toughness was similar in perceived rating, self-rating and discrepancy among athletes.
3. It was found that the analysis of variance mental imagery perceived rating the skill imagery ability was more among sprinters compared to long distance runners.
4. It was found that the analysis of variance mental imagery self-rating and discrepancy value are similar among athletes.
5. It was found that compared to sprinters the analysis of variance performance strategies training the perceived relaxation ability is higher among jumpers and long distance runners.
6. It was found that in the case of self-rating the analysis of variance performance strategies training relaxations of jumpers are dominant compared with long distance runners and sprinters.
7. It was found that in the case of analysis of variance training relaxation discrepancy value the jumpers are dominant compared with long distance runners because the low level of discrepancy value.

8. It was found that in the case of analysis of variance training attention control discrepancy value of sprinters are dominant compared with jumpers and long distance runners.
9. It was found that in the case of performance strategies competition analysis of variance are similar among athletes in perceived rating, self-rating and discrepancy value.
10. The factor analysis of perceived rating the ability to handle pressure and concentration ability factors from mental toughness variables and affect from mental imagery variable was prominent factors.
11. In the case of factor two positive thinking and imagery from performance strategies competition variables was the prominent factors.
12. The factor three imagery from performance strategies training variables was the only prominent factor.
13. The factor analysis of self-rating the skill factor from mental imagery was the prominent than other sub domains.
14. In the case of factor two the relaxation factor from performance strategies training variable was the only prominent factor.
15. Factor three was found rebound ability factor from mental toughness variable was the only loaded item.
16. In the case of discrepancy value it was found that the goal imagery and self-talk from mental imagery and performance strategies competition was the highest discrepancy value and athletes need to concentrate this factors
17. In the case of factors two the goal setting from performance strategies training and competition and emotional control from performance strategies competition variable was prominent factors need to improve.
18. In factor three indicates the strategy imagery and mastery imagery from mental imagery variable was loaded item and the athletes need to concentrate to the loaded subscale

The findings of the study are given below among soccer group

1. It was found that the descriptive profile of variables is not similar in perceived rating, self-rating and discrepancy among soccer players.

2. It was found that the analysis of variance mental toughness was similar in perceived rating, self-rating and discrepancy among soccer players
3. It was found that the analysis of variance mental imagery perceived rating the goal imagery ability was more among defenders compared to mid fielders and strikers
4. It was found that the analysis of variance mental imagery self-rating and discrepancy value are similar among soccer players
5. The analysis of variance performance strategies training strikers proved in perceived goal setting was higher than defenders and mid fielders.
6. In the case of self-talk perceived rating strikers and defenders are equal high level and compared to mid fielders
7. The self-rating of performance strategies training the relaxation ability is more from defenders compared to strikers.
8. It was found that the analysis of variance performance strategies training discrepancy is more in defenders than strikers with low level of discrepancy value.
9. The strikers are more goal setting, imagery and positive thinking in performance strategies competition compared to mid fielders and defenders
10. In the case of self-talk also strikers are more self-talk in competition compared with defenders.
11. The self-rating results were all the soccer players are similar performance strategies in competition sub scales.
12. It was found that the analysis of variance performance strategies competition goal setting discrepancy is more in defenders than strikers with low level of discrepancy value.
13. It was found that the analysis of variance performance strategies competition imagery discrepancy is more in mid fielders than strikers with low level of discrepancy value.
14. The factor analysis of perceived rating the concentration ability factor from mental toughness variables was prominent factor.
15. In the case of factor two it was found that the activation factor from performance strategies competition variable was the loaded items
16. In self-rating factors one the concentration ability and level of confidence factors from the mental toughness variable

17. In the case of discrepancy factor one the self-talk factors from performance strategies training variable was loaded and the athletes need to concentrate the above sub scale.
18. In the case of factor two loading the activation factor from performance strategies training variable was loaded and the soccer players need to concentrate the above sub scale.
19. In factor three the affect imagery ability from the mental imagery variable was a loaded item and the soccer players need to concentrate the above sub scale.

The findings of the study are given below among both athletics and soccer group

1. In the case of perceived rating factor one loading variables of both athletes and soccer players was the skill and strategy imagery ability factor from mental imagery variable was the prominent factors
2. In factor two the positive thinking and imagery factor from performance strategies variable was heavily loaded item.
3. In the case of factor three the goal setting factor from performance strategies training variable was heavily loaded item.
4. In self-rating the factors one loading variables of athletes and soccer players was the relaxation factor from performance strategies training variable was the prominent factor.
5. In factor two the affect imagery and mastery imagery factor from sports imagery variables was the loaded item.
6. In the case of discrepancy the goal setting factor from performance strategies training variable and emotional control factor from performance strategies competition was the prominent factors.
7. In factors two the attention control factor from performance strategies training variable and activation factor from performance strategies competition was loaded item and the athletes need to concentrate the above sub scale
8. In the case of factors three the skill imagery and strategy imagery factor from mental imagery variables was loaded item and the athletes need to concentrate the above sub scale

Recommendations

The investigator makes the following recommendations for the research scholars, teachers, coaches and performance analysts.

1. Similar studies may be conducted using different level age group and category
2. The same study may be extended to the small sample size for individual profiling in one group.
3. Similar studies may be conducted using other performance related variables like physical and physiological.
4. It is also recommended that coaches and trainers design the training plan for actual performances based on the results of performance profiling.
5. The similar study may be conducted by using the comparison of perceived and self-rating of variables.
6. The similar study may be conducted by using the comparison of factor analysis and performance profiling.



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The background features a dark teal triangle in the top-left corner. The rest of the page is a gradient of yellow and gold tones, overlaid with a pattern of thin, light-colored lines forming rounded rectangular shapes that overlap and intersect.

APPENDICES

Appendix II

Mental Toughness

Sl No	Statement	TRUE	FALSE
1.	I frequently worry about mistakes.	O	O
2.	I get really down on myself during performance when I mess up.	O	O
3.	It's easy for me to let go of my mistakes.	O	O
4.	If I start out badly, it's hard for me to turn my performance around.	O	O
5.	I get distracted by what the coach thinks whenever I screw up.	O	O
6.	I bounce back quickly from setbacks, bad breaks and mistakes.	O	O
7.	I do my best when there's more pressure on me.	O	O
8.	I get too nervous to really perform to my potential.	O	O
9.	I do better in practice than I do when it really counts the most.	O	O
10.	I tend to get easily psyched out or intimidated.	O	O
11.	I can keep myself calm and composed under pressure.	O	O
12.	I don't want the ball/dread competing at "crunch time." (big game/race).	O	O
13.	The coach's yelling knocks me off my game.	O	O
14.	I tend to get easily distracted.	O	O
15.	Certain opponents can get into my head and throw me off my game.	O	O
16.	Lousy playing conditions (weather, field conditions, temperature, etc.) negatively affect me.	O	O
17.	I have no trouble focusing on what's important and blocking everything else out	O	O
18.	I think too much about what could go wrong right before and during performance, (the "what if's").	O	O
19.	One or two failures do not shake my confidence.	O	O
20.	I tend to compare myself too much with teammates and opponents.	O	O
21.	I'd rather compete against a better opponent and lose than go up against a weaker opponent and win.	O	O
22.	I am a confident and self-assured athlete.	O	O
23.	I tend to be too negative.	O	O
24.	I have trouble dealing with negative self-talk (thoughts).	O	O
25.	I get more motivated after failures and setbacks.	O	O
26.	It's easy for me to consistently train at a high level of intensity.	O	O
27.	I think about how today's practice will help me get to my goals.	O	O
28.	I find myself just going through the motions a lot in practice.	O	O
29.	I have clear goals that are important for me to achieve.	O	O
30.	I am a highly motivated athlete.	O	O

Appendix III

Mental Imagery

Sl NO	statement	Very hard to Image	Hard to Image	Somewhat hard to Image	Neutral (Not easy or hard)	Somewhat easy to Image	Easy to Image	Very Easy to Image
1.	Making up new plans/strategies in my head	0	0	0	0	0	0	0
2.	Giving 100% effort even when things are not going well	0	0	0	0	0	0	0
3.	Refining a particular skill	0	0	0	0	0	0	0
4.	The positive emotions I feel while doing my sport	0	0	0	0	0	0	0
5.	Myself winning a medal	0	0	0	0	0	0	0
6.	Alternative plans/strategies	0	0	0	0	0	0	0
7.	The anticipation and excitement associated with my sport	0	0	0	0	0	0	0
8.	Improving a particular skill	0	0	0	0	0	0	0
9.	Being interviewed as a champion	0	0	0	0	0	0	0
10.	Staying positive after a setback.	0	0	0	0	0	0	0
11.	The excitement associated with performing	0	0	0	0	0	0	0
12.	Making corrections to physical skills	0	0	0	0	0	0	0
13.	Creating a new event/game plan	0	0	0	0	0	0	0
14.	Myself winning	0	0	0	0	0	0	0
15.	Remaining confident in a difficult situation	0	0	0	0	0	0	0

Appendix IV

Performance Strategies practice

SI No		Never	Rarely	Sometimes	Often	Always
1.	I set realistic but challenging goals for myself.	0	0	0	0	0
2.	I set goals to help me use practice time effectively.	0	0	0	0	0
3.	I have very specific goals for practice	0	0	0	0	0
4.	I don't set goals for practices; I just go out and do it.	0	0	0	0	0
5.	I get frustrated and emotionally upset when practice does not go well	0	0	0	0	0
6.	When things are going poorly in practice, I stay in control of myself emotionally.	0	0	0	0	0
7.	I have trouble controlling my emotions when things are not going well at practice.	0	0	0	0	0
8.	When I perform poorly in practice, I lose my focus.	0	0	0	0	0
9.	During practice, I don't think about performing much -I just let it happen.	0	0	0	0	0
10.	During practice, my movements and skills just seem to flow naturally from one to another.	0	0	0	0	0
11.	At practice, I can allow the whole skill or movement to happen naturally without concentrating on each part of the skill.	0	0	0	0	0
12.	During practice, sessions I just seem to be in a flow	0	0	0	0	0
13.	I practice using relaxation techniques at workouts.	0	0	0	0	0
14.	I practice a way to relax.	0	0	0	0	0
15.	I use practice time to work on my relaxation technique.	0	0	0	0	0
16.	I relax myself at practice to get ready.	0	0	0	0	0
17.	I say things to myself to help my practice performance.	0	0	0	0	0
18.	I manage my self-talk effectively during practice.	0	0	0	0	0
19.	I motivate myself to train through positive self-talk.	0	0	0	0	0
20.	I motivate myself to train through positive self-talk.	0	0	0	0	0
21.	I talk positively to myself to get the most out of practice	0	0	0	0	0
22.	I rehearse my performance in my mind before practice.	0	0	0	0	0
23.	At practice, when I visualize my performance, I imagine what it will feel like.	0	0	0	0	0
24.	At practice, when I visualize my performance, I imagine watching myself as if on a video replay.	0	0	0	0	0
25.	My attention wanders while I am training.	0	0	0	0	0
26.	I am able to control distracting thoughts when I am training.	0	0	0	0	0
27.	During practice, I focus my attention effectively.	0	0	0	0	0
28.	I have trouble maintaining my concentration during long practices.	0	0	0	0	0
29.	I practice a way to energize myself.	0	0	0	0	0
30.	I have trouble energizing myself if I feel sluggish during practice.	0	0	0	0	0
31.	I have difficulty increasing my energy level during workouts.	0	0	0	0	0
32.	I practice energizing myself during training sessions.	0	0	0	0	0

Appendix V

Performance Strategies competition

SI No	Performance Strategies competition	Never	Rarely	Sometimes	Often	Always
1.	During competition, I set specific result goals for myself.	0	0	0	0	0
2.	I evaluate whether I achieve my competition goals.	0	0	0	0	0
3.	I set very specific goals for competition.	0	0	0	0	0
4.	I set personal performance goals for a competition	0	0	0	0	0
5.	When I make a mistake in competition, I have trouble getting my concentration back on track.	0	0	0	0	0
6.	When something upsets me during a competition, my performance suffers.	0	0	0	0	0
7.	My emotions keep me from performing my best at competitions.	0	0	0	0	0
8.	My emotions get out of control under the pressure of competition.	0	0	0	0	0
9.	I perform at competitions without consciously thinking about it.	0	0	0	0	0
10.	During competition, I perform on 'automatic pilot'.	0	0	0	0	0
11.	During competition, I don't think about performing much - I just let it happen.	0	0	0	0	0
12.	During competition, I play/perform instinctively with little conscious effort.	0	0	0	0	0
13.	When the pressure is on at competitions, I know how to relax.	0	0	0	0	0
14.	I am able to relax if I get too nervous at a competition.	0	0	0	0	0
15.	When I need to, I can relax myself at competitions to get ready to perform.	0	0	0	0	0
16.	I find it difficult to relax when I am too tense at competitions.	0	0	0	0	0
17.	I have specific cue words or phrases that I say to myself to help my performance during competition.	0	0	0	0	0
18.	I say things to myself to help my competitive performance.	0	0	0	0	0
19.	I manage my self-talk effectively during competition.	0	0	0	0	0
20.	I talk positively to myself to get the most out of competitions	0	0	0	0	0
21.	I visualize my competition going exactly the way I want it to go.	0	0	0	0	0
22.	At competitions, I rehearse the feel of my performance in my imagination.	0	0	0	0	0
23.	I imagine my competitive routine before I do it at a competition.	0	0	0	0	0
24.	I rehearse my performance in my mind and at competitions.	0	0	0	0	0
25.	My self-talk during competition is negative.	0	0	0	0	0
26.	During competition, I have thoughts of failure.	0	0	0	0	0
27.	I keep my thoughts positive during competitions.	0	0	0	0	0
28.	I imagine screwing up during a competition.	0	0	0	0	0
29.	I can raise my energy level at competitions when necessary.	0	0	0	0	0
30.	I psych myself up at competitions to get ready to perform.	0	0	0	0	0
31.	I do what needs to be done to get psyched up for competitions.	0	0	0	0	0
32.	I can increase my energy to just the right level for competitions.	0	0	0	0	0

Appendix VI

Plagiarism report of chapter I&II



Urkund Analysis Result


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https://www.researchgate.net/publication/270965810_Effects_of_Gender_Imagery_Ability_and_Sports_Practice_on_the_Performance_of_a_Mental_Rotation_Task
https://www.researchgate.net/publication/265178624_Gender_imagery_ability_and_sport_practice_Effect_on_performance_of_a_mental_rotation_task
https://www.researchgate.net/publication/318074152_Mental_toughness_in_elite_and_sub-elite_female_soccer_players
https://www.researchgate.net/publication/43136074_Mental_toughness_profiles_and_their_relations_with_achievement_goals_and_sport_motivation_in_adolescent_Australian_footballers
https://www.researchgate.net/publication/335660930_Psychological_characteristics_in_women_football_players_Skills_mental_toughness_and_anxiety
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https://www.researchgate.net/publication/222913807_Test_of_Performance_Strategies_TOPS_Instrument_refinement_using_confirmatory_factor_analysis
https://www.researchgate.net/publication/233470004_Towards_an_Understanding_of_Mental_Toughness_in_Elite_English_Cricketers
<http://ir.amu.ac.in/5392/1/T%207428.pdf>
https://www.researchgate.net/publication/23413084_Playing_with_confidence_The_relationship_between_imagery_use_and_self-confidence_and_self-efficacy_in_youth_soccer_players
https://www.researchgate.net/publication/281961073_The_Psychological_Profile_of_Youth_Male_Soccer_Players_in_Different_Playing_Positions


Appendix VII

Plagiarism report of chapter I&II

	
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Appendix VIII

Plagiarism report of chapter III



Urkund Analysis Result

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<http://oldror.lbp.world/UploadedData/7722.pdf>
<https://www.journalofsports.com/pdf/2018/vol3issue1/PartX/3-1-305-727.pdf>

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Appendix IX

Plagiarism report of chapter IV&V



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<https://quizlet.com/nl/442425316/sports-and-perfromance-lecture-3-chapter-5-6-flash-cards/>
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<https://msu.edu/course/nur/813/Week7.htm>

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Appendix X

Academia analytics of related literature

