Master's Thesis of Global Sport Management

The Effect of Athletic Factors on Quality of Adaptation to Post-Sport Retirement

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Abstract

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Athletes' retirement has been a significant research area in recent years. The purpose of this research is to examine how the quality of adaptation to post-sport retirement depends on athletic factors. The gradualness of sports career termination, subjective evaluation of athletic achievements, post-sports life planning, and athletic identity are factors known to affect the quality of adaptation to post-sports life. According to the literature review, good quality of adaptation means fewer difficulties faced in retirement life. Career decision self efficacy would have a mediation effect on those factors. In this study, the participants were 295 former elite athletes of Sri Lanka who had retired within the last 10 years, after ending a sports career at the international or national level. Participants had to answer a questionnaire, which among other things, assessed participants' perceptions regarding the characteristics of the adaptations they had to make while transitioning from their sports career

process to the post-sport life. The SEM method was used for evaluating the data. The results showed that the quality of the sports career termination process significantly depended on the athletic achievements and post-sport life plan and athletic identity of the sportsman. Self-efficacy can serve as a significant mediating factor on post-sport life plan and gradualness of termination. The study provides a unique insight into the effect of forced retirement from sport of sportspersons. Therefore, more attention should be paid to prepare and assist athletes even during their active sports period to prepare them for retirement. The Sri Lankan government will soon establish an athletic retirement policy and service center to balance sportspersons' active and post-sport life effectively.

Keywords : Athletic factors, Athletes' retirement, Post-sports life, Quality of adaptation, Self-Efficacy

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Chapter 1. Introduction

1.1 Background of Study

Athletes' retirement has been a significant research area in recent years (Knights et al., 2019). The sports-related network is regularly coming up with philosophical arguments about this issue that affects athletes just as it has been happening for more than the past two thousand years. Many research studies have discussed the process of retirement of athletes from sport, and the adjustment difficulties they faced after the termination of their career. This has turned out to be an important issue to them.

According to the model of human adaptation to transition, a transition is "an event or non-event that causes a change in one's as well as the world's assumptions and thus involves a corresponding change in one's behavior and relationships" (Lavallée, Gordon, & Grove, 1997). When athletes feel the joy and despair that can result from competition, they experience a wide range of emotions. Possibly the most important and potentially the most distressing experience has yet to be faced, at the end of this emotional journey (Taylor & Ogilvie, 1994a). The termination of the sports career for many athletes has been recognized as a potentially depressing and even traumatic event.

Athletes' careers can be divided into three stages with respect to the actual date of retirement. First, there is the pre-retirement stage, retirement decision stage, and post-retirement stage (Park, Tod, & Lavallee, 2012). Further, the retirement decision would depend on different kinds of reasons. Taylor and Ogilvie (2008) after their exploration of active sports termination cited four primary reasons such as age, deselection from the team, injury, and free decision. If the athlete can make the decision regarding retirement by himself, that would be voluntary retirement. While the circumstances that determine voluntary or involuntary retirement remain key to understanding the athletes' reaction, there is additionally a developing acknowledgement that the factors behind retirement are frequently multicausal and part of an all-inclusive and dynamic procedure. (Wylleman, Lavallee, & Alfermann, 1999).

However, every sports career has specific features. Mainly, Grove, Lavallee, and Gordon (1997) highlighted two features, first being that to attain success, total physical and emotional commitment should be at the highest level, and the second was that there should be no compulsory retirement age. These specificities make the transitional process from professional sport to retirement unique.

The transition process represents a daunting period in the career of an athlete as he begins a new phase of his life after retirement from sport. Unlike in other occupations, most athletic retirements typically happen at a relatively early stage in life. Because of this, the sportsperson's status changes to that of a former athlete. Thus, athletes' reduced status causes a wide variety of psychological, social and occupation related issues that cause them much distress (Hattersley et al., 2019).

While the most common way of ending an athletic career is scheduled retirement, there is also a degree of confusion about when athletes can go into retirement as termination may be prompted by injury or deselection. In addition to the immediate changes caused in the post-retirement life of an athlete, they will need to be prepared to cope with any existing medical or physical conditions that could have a lifelong impact on them, as assistance will be dramatically decreased once they leave the professional field (Martin, Fogarty, & Albion, 2014).

Research has been carried out on the effect of the quality of the transformation phase on different, primarily sports-related, variables. While the conceptual model of athletic retirement proposed by Taylor and Ogilvie (1994a) offers a detailed overview of how these factors affect the termination

of a sports career, the emphasis is primarily on athletic factors. Causes of sports career termination, conditions related to retirement adaptation, and available resources influence the course of sports career transition.

Among the athletic antecedents and mediating factors that determine the continuity of the sports career termination process, the conceptual model emphasizes the voluntariness and gradualism of the sports career termination, the degree of athletic identification, the appraisal of athletic achievements, and the planning for the post-sports career life. Athletes are likely to face difficulties when transitioning to normal life after retiring from sports. The adjustment time required for preserving proper mental health and physical well-being is of paramount importance (Lally & Kerr, 2008).

1.2 Statement of Problem

The field of sports has attracted many athletes who have taken up a sports career and their numbers have increased over the last three decades. Although earlier studies focused on merely coping with the challenges and the suffering following career termination (Taylor & Ogilvie, 1994a), recent research has shown that retirement after professional sports could be seen as a life changing event that could seriously affect the well-being, self-efficacy, confidence and growth of retired athletes (Martin et al., 2014).

In the field of sport, when an athlete decides to end his/her career based on one's own decision, there could be many reasons for it. The change in priorities could be for the sake of the family, to get away from financial difficulties, to avoid political influence in the sports organization, for any other work or study purpose, failure to reach the sport target or decreased enjoyment from sport, reduced motivation to continue sports activities or drop in competitive performance (Roberts, Mullen, Evans, & Hall, 2015). These are the various reasons why athletes voluntarily decide to terminate their sports careers. On the other hand, involuntary reasons for retirement include deselection, injury, and age (Taylor & Ogilvie, 1994). If the decision is involuntary, it would not be a happy retirement for the athlete. If the athlete can make the decision himself regarding his retirement, that would be a more acceptable state of affairs.

However, the quality of adaptation to post-sport life depends on the resources that are accessible to athletes during this retirement period. It is a more acceptable reason when an athlete retires because of age issue, but deselection and injury are involuntary and as such, may have negative effects on adaptation.

From the athlete's perspective, because this decision to retire was to some extent freely chosen, it does not carry the stigma of retirement forced by external compulsions. One of the common concerns of athletes is that after their sports career comes to an end, their life should be smooth and they should be able to maintain a quality lifestyle. Sports administrators, trainers and counselors are focused on how to support athletes to cope with career termination (Martin et al., 2014). While retirement from sport is the one inevitability in a competitive athlete's life, he/she is still unprepared when faced with the end of sports participation. Many portspersons resist preparing for career termination and as a result may experience adaptation and adjustment problems.

Therefore, the consistency of the sports career transition and the adaptation to post-sports life rely on both athletic and non-athletic variables. Effective and relatively smooth transition, or more or less significant difficulties, may result from their effect. A more comprehensive and ongoing view of the path of athletic retirement and transition to post-sport life is provided by an understanding of the sports career termination process, which incorporates several athletic aspects. Consequently, the research should be conducted to measure how the relationship between athletic factors can affect the quality of adaptation to post-sport retirement life.

1.3 Purpose of the Study

The conceptual model emphasizes the gradualism of the sports career termination decision, the degree of athletic identity, the assessment of athletic achievements, and the preparation of a post-sports career life among the athletic antecedents and mediating factors that decide the consistency of the sports career termination process. In terms of that, the purpose of this Master's thesis is to investigate the possible effect of athletic factors on the quality of adaptation to post-sport retirement of elite athletes. Secondly, according to self-efficacy career decision theory, it would be necessary to identify the mediation effect between self-efficacy and the quality of adaptation to post-sport life of elite athletes.

1.4 Research Question

The following Research Questions (RQ) will guide the study:

RQ1. What are the influencing factors that determine the quality of adaptation to post-sport retirement?

RQ2. How do these factors affect the quality of adaptation to post-sport retirement?

RQ3. How does the self-efficacy of the adjustment act as a mediating factor on the quality of adaptation to post-sport retirement?

1.5 Significance of the Study

Sports offer an athlete a greater chance to live an extended and prosperous life while engaged in sport, while enabling him to make the transition to post-sport life effectively. The formal sport itself would be a success through the athlete's contribution. An athlete's career is most important from the personal and social perspectives. The effectiveness of the athlete's termination from professional sport is important for the buildup of a balanced life.

The phenomenon of athletes' career transition is considered as a process rather than as a singular event. The termination from sport can have a positive or negative effect. The positive change happens when the athlete has no difficulties in consistently adapting to life without his or her sport, such as keeping away from active participation (Knights, Sherry, Ruddock-Hudson et al., 2019).

Getting counseling before sport retirement helps the athlete to move smoothly towards sports termination. Athletes have a hard time coping with the change, partly because this is the time that most people in this age group

are actually starting their careers in earnest; but just then athletes are ageing out of their athletic careers (Hattersley et al., 2019). All athletes with every level of experience who are preparing for retirement must learn to adjust to the real world.

At such a moment, the athlete must contend with training for termination unlike the younger professional athlete who is making pre-competition arrangements and preparing game plans. Coaches, administrators, parents of athletes, and sports psychology advisors should take much interest to help athletes plan for and/or cope with career changes. This research would also be useful to athletes, their families, sports ministry, members of national federations, psychologists and counselors, and also coaches and managers, to understand all stages in the life of athletes, not just the competition stage. Based on how well the athlete plans for the future, the transition to sports retirement will have a positive or negative impact on his life. According to the Sri Lankan experience, the athletes' career is rife with challenges. If they know what kind of factors would cause the post-sport life difficulties. they would be better placed to plan ways to solve the problems during and after sports life.

In terms of that, the study will contribute to the development of knowledge relating to the area of athletes' career transition in different ways. It will assess the current knowledge relating to the topic and provide a systematic review of the athletes' career transition through sports research, focusing on sample characteristics, research designs, and psychological correlations that can predict the quality of athletes' career transitions. Based on the findings, it may be possible to suggest potential future research directions. Secondly, this being a longitudinal investigation, it aims to understand Sri Lankan elite athletes' career transition experiences over time. Also, over the thirty years that investigators have examined career transition in sport, few studies have been done with Asian athletes, and no study related specifically to Sri Lankan athletes. Overall, the findings of the thesis may provide advanced and useful insights into the athletes' career transition process and the development of support programs for athletes. It is also expected to assist attempts at enhancing athletes' well-being and welfare in their post-sport lives and their individual development. Besides that, as affirmed by the problem statement, this study will address a problem that affects all parties directly or indirectly. From that point of view also it can be declared that this study stands out significantly. This research can not only be used by governing bodies of sports in the country, but also by other sports

bodies around the world to build effective career transition programs for athletes.

1.6 Overview of Study

The thesis consists of five chapters including Chapter One that introduces the study, discusses the significance of the study and also the study's purpose. Chapter Two provides a review of the relevant literature on key concepts and theories related to the study and reviews previous studies covering the current research topic; it also discusses the research gap that is being bridged by the current study.

A detailed description of the methodology and materials used in the study, as well as the data collection method and data analysis plan are presented in Chapter Three. Chapter Four presents the results of statistics, and findings of the research through the analysis of data. Chapter Five summarizes the findings by conducting a discussion about the second chapter, stating the conclusion, offering recommendations and noting the limitations of the study.

Chapter 2. Literature Review

2.1 Sports Career

A sports career is defined as “The individual's multi-year sports activities targeted at high-level sports achievements and athletic self-improvement” (European Federation of Sport Psychology, 2000). The word “career” applies only to professional sports, but to all levels. An athletic career can be local, national, or international, depending on the highest level of sports competition attained by the athletes. The occupation can be amateur or professional, depending on the status of the athletes. The main idea of Torregrosa, Boixadós, Valiente, and Cruz (2004) was to introduce three-stages that cover the elite athletes’ retirement process. There are three distinctive phases known as the training period, the performance period, and the retirement period. These three stages involve different requirements and priorities, leading to different viewpoints on retirement.

Initiation Training Stage: Most athletes start their sports careers at youthful ages and at that time they have no thoughts of retirement at all.

Maturity Performance Stage: This is the period when sports gets the most devotion from athletes both quantitatively and subjectively. Right now the

athletes have matured and their main target is to turn into a top-level competitor and contend at the international level.

Anticipation-realization of Retirement Stage: This stage is characterized by stagnation or decrement of results. As a rule, commitment to the sport diminishes in quantitative terms (long periods of preparing), although a few competitors feel that their commitment has increased subjectively (on account of their experience). Be that as it may, the separating variable at this stage is the very notion of retirement from top level competition. Most athletes have a fear of retirement and what it implies. Therefore, some of them try to combine their sport career with some alternative line of employment.

2.1.1 Sports Career Transition

A transition is "An occurrence or non-event that results in a change in one's and the world's assumptions and thus involves a consistent change in one's actions and connections" (Schlossberg, 1981).

A new concept of transition treats it as a phase and not as a single event or non-event (Wylleman, Lavallee, & Alfermann, 1999). As applied to athletic careers, changes in the course of an athletic career can be seen as normative or non-normative turning points. Transitions come with several unique criteria relating to practice, competition, communication, and lifestyle

that the athletes have to contend with to continue professionally in sport or while transitioning to the post-career process.

For instance, the start of sports specialization and the transition from junior to senior level, from amateur to professional sports, from athletic career to post-sport life, are relatively predictable normative athletic career transitions. Non-normative changes, such as changes triggered by an injury, overtraining schedule, changing team or club, changing coach or sports partner, are situation-related, idiosyncratic and less consistent. This transition may incorporate contexts that are sport-related and sport-unrelated. When they can no longer compete in events at the standard they have attained, athletes may consider it is time to retire. However, even without a competitive orientation, they may continue to practice sport and engage in exercises due to force of habit. The predictability of regulatory changes provides an incentive to train athletes in advance to deal with such changes.

2.1.2 Retirement from Active Sport and Termination of Career

Career termination can be described as the strongest example of a normative and even inevitable transition. Another critique of both the views of thanatology and social gerontology is that retirement is perceived to be a

single abrupt occurrence (Lavallee, 2000). In contrast, retirement is defined by other researchers as a transition or phase rather than as a single event involving life-long development (Taylor & Ogilvie, 2008). It is one of the objectives of each working individual's life And it is common to every field. When discussing termination as meaning retirement, the dictionary defines it as, "to stop working at one's occupation," or "to withdraw from one's position or occupation or active working life." However, retirement cannot be achieved in this day and age without making suitable arrangements and accumulating some assets before one arrives at the retirement age. Also, numerous individuals will utilize the expression "money related autonomy" while referring to "retirement" because one cannot exist without the other.

The planning for termination is a significant measure every individual needs to take along with the maturing procedure, as so many arrangements have to be made before one can quit the regular work. Other adjustments too will have to be made before embarking on a life of retirement.

2.1.3 Athletes' Career in Sri Lanka

As stated in a Sri Lankan sports policy document, there is already an established provision for the "Protection of Proficient Sports Persons." Concerning these provisions, the implementation of a social security program

for athletes who have received national and international awards and brought credit to Sri Lanka has been confirmed. It is important to create an adequate national conservation program aimed at the protection and welfare of athletes who have sacrificed a lot to win national and international awards and thereby bring credit to Sri Lanka. The life of an athlete has been likened to rising to magnificent heights and then falling down into deep valleys (Giannone, 2016).

Athletes at all levels, from Olympians to collegians, use sports psychology techniques and concepts to become mentally tough, to develop their bodies, and eventually achieve their goals in sports competition. In fact, Olympic athletes and coaches have described the main mental skills and techniques that are used enhance their performance and enjoyment. Sports organizations around the world are trying to increase their understanding of the importance of athletes' life and well-being. There are many challenges for both the athletes themselves and the sports organizations in respect of the transition athletes have to make from active sports to retirement. Hence, there are support programs in place, but it remains unclear as to whose responsibility it is to manage and support athletes at the different stages of their career transition and retirement; thus, further inquiry into this question is critical.

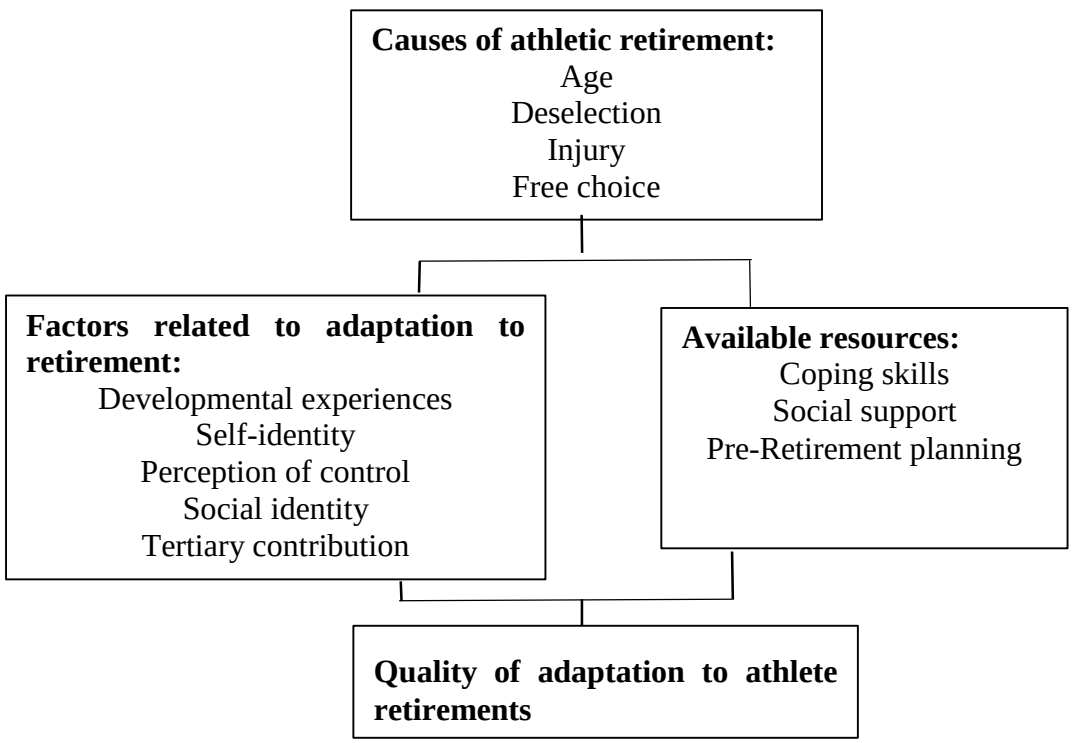
In the Sri Lankan sports sector, all sports federations come under the purview of the Ministry of Sport. Similarly, the National Olympic Committee would have the responsibility to supervise and handle all the Olympic sports related games. Human resources are the main factors in sport according to those athletes at the top level in the sports world. Because in the competitive sports field, the top athletes are the key focus persons in national sports. Especially because senior players and retired athletes are the main role models for the juniors who are likely to take up the sport. In Sri Lanka, the sports athletes' career is not secure at all. There is no proper guidance or a system to direct the athletes along the right path in their career. They only have some small programs to encourage athletes. Due to that, many athletes have struggled with their post-sport life. With many other barriers as well they have to overcome, this kind of situation is not conducive at all for developing a successful sports sector in Sri Lanka.

2.2 Theoretical Model of Career Termination

In this field, Taylor and Ogilvie (1994) had developed a conceptual model of adaptation to retirement life among athletes. This was an effort to model the whole retirement from the sports field. The model starts with athletic retirement reasons like age, injury, de-selection or free choice. Such reasons contribute to factors relating to retirement adaptation that include enhancement experience as well as modification in self-identity. Additionally, this model examines the total lengths of the career transition processes such as factors related to transition adaptation, managing resources that affected the responses to career transitions, quality of adjustment to career transition and also possible treatment regimens for distressful reactions to career transition.

Figure 1

Conceptual Model of Adaptation to Retirement



Note: Factors related to quality of adaptation to athletes' retirements as proposed by Taylor & Ogilvie (2008).

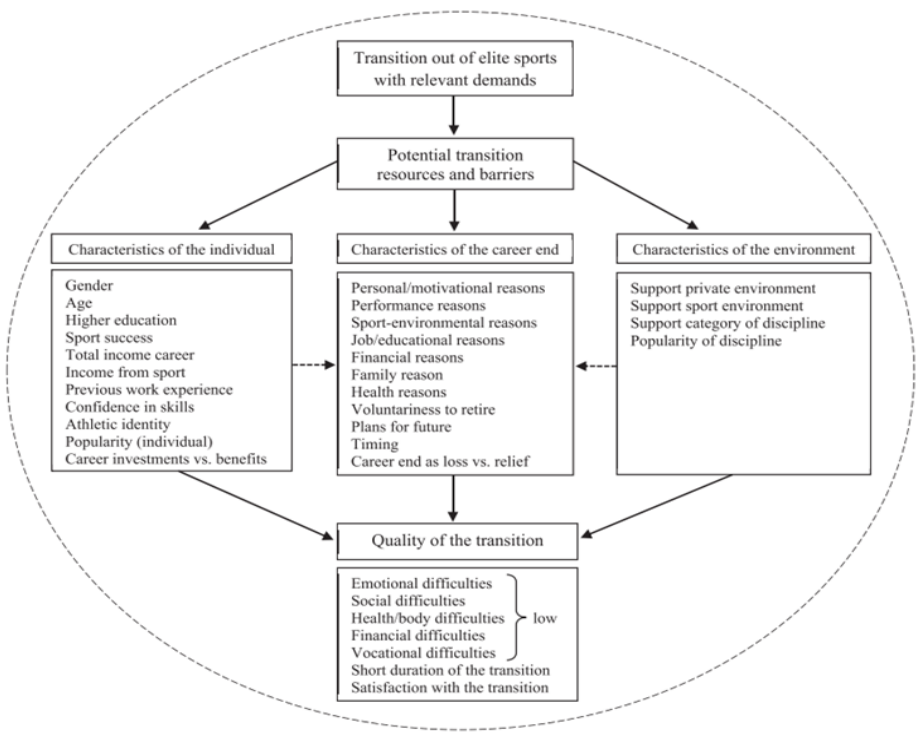
The conceptual model emphasizes the willingness, the gradualism of the termination of the sports career, the degree of identity of the athlete, the assessment of athletic achievements and post-sport career life as mediation

factors that decide the consistency of the termination phase of the sports career.

Secondly, this study focused on a second theoretical model explained by Park, Tod and Lavallee (2012). It has been shown that the possible barriers integrated into our model are related to the transfer quality for an overview. High quality is defined as low perceived adaptation difficulties in various

Figure 2

Factors Contributing to the Quality of the Transition of Sport Life



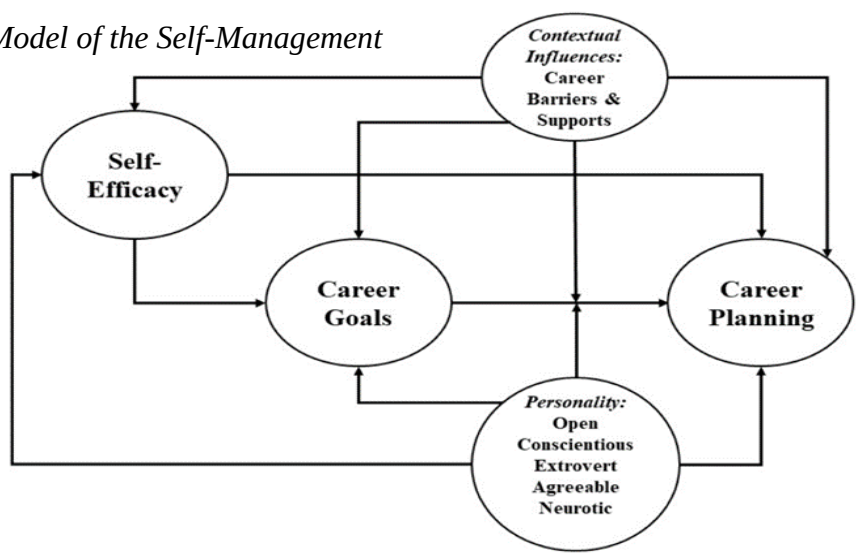
Note: Measurement factors of quality of retirement life through difficulties proposed by Park et al. (2012).

ranges of life, a short adaptation phase period, and high transition satisfaction. The circle surrounding the transitional features and results emphasizes that the appropriate context should be considered.

In that context, if athletes make a sound decision to terminate their careers, they should be able to face the difficulties positively. The phenomenon of athletes facing difficulties after retirement from sport may be better understood as a dynamic relationship whether the difficulties are physical, psychological, social, occupational or financial.

Figure 3

Model of the Self-Management



Note: Career decision self-efficacy model proposed by Lent & Brown (2013).

The third theoretical perspective of this study explained the athlete's career in terms of the Social Cognitive Career Theory Model of Career Self-Management (CSM), which was designed to explore how people direct their career growth and negotiate career transitions under varying cognitive, personal and contextual influences (Lent & Brown, 2013).

Self-efficacy refers to the confidence of a person in his ability to perform a particular task or action needed to achieve the desired results. Self-efficacy in the CSM model refers to the perceived capacity to handle particular tasks required for job planning, admission, adaptation, or transition through different occupational paths (Wendling & Sagas, 2020). To achieve a specific result, goals are described by Lent et al. (1994) as the intention to engage in a given action. Setting priorities, while being motivated by self-efficacy, helps to direct and foster career preparation. Indeed, preparations are made to achieve those defined goals once priorities are identified.

2.2.1 Athlete's Retirement

To understand the career termination process, it is important to first consider the factors influencing the quality of the post-career life and the services available to athletes to help them make the necessary adjustments. For instance, there is strong evidence to indicate that voluntary termination is

linked to good adaptation to a new life and a shorter transitional period (Carapinheira et al., 2018).

In comparison, involuntary termination due to passing the age limit can lead to difficulties in adjusting to termination, including disappointment with the unexpected change and negative emotional reactions to it, as well as difficulties in accepting the new life (Demetriou et al., 2018). Overall, the research revealed that – (a) there are multiple motives for athletic termination and that this is the result of a reasoned decision-making process; (b) the more regular athletes feel they have made the decision to retire, the better their adaptation to post-termination life; (c) the process of transitioning to athletic termination is highly individualistic and so there are significant variations between individuals in respect of the outcome; (d) termination preparation is vital for dealing effectively with one's new life; (e) the knowledge and social support that an athlete has will contribute positively to the adaptation process.

Moreover, it has been pointed out recently that athletic termination is not a purely rational decision but is also driven by the reaction, force and a need to be part of the game. Such emotions may be associated with identity loss before and after athletic termination due to the lack of importance of prior experiences and skills gained during the athletic career (Cosh et al., 2013).

Recent studies found that many professional athletes planned to make the transition from an athletic career to a profession related to sports because they felt they had the requisite expertise, experience and skills to succeed in this role.

It will be interesting to examine whether the presumption of the elite athletes that continuing to work in their sport would help them to preserve their athletic identity and mitigate negative feelings about the process of terminating from active competition (Fernandez et al., 2006).

2.2.2 Athletic Factors

The professional life of a sportsperson is not a seamless journey but is composed of multiple stages. It also includes sports career change and post-sport adaptation, in addition to being marked by a series of unique demands requiring the athlete to make constant adjustments. Thus, it has been recognized as involving continuous change. Schlossberg and his associates noted the concept of human adaptation to transformation (Hatamleh, 2013). A transformation is "an occurrence or non-event that results in a shift in perceptions about oneself and the environment and thus involves a corresponding adjustment in one's attitudes and relationships" (Sinclair, 1993).

Taylor and Ogilvie (1994) first suggested the philosophical model of athletic retirement. Taylor and Ogilvie (2008) offered a detailed explanation of how these factors affect the termination of sports activity, with the emphasis mainly on athletic factors. The consistency of the transition from sports career to termination is influenced by reasons for the termination, conditions linked to retirement adaptation, and availability of resources. Between the athletic history and mediating factors that decide the consistency of the sports career termination process, lies the philosophical model that stresses the voluntariness and gradualism of the termination, the degree of athletic recognition, the appraisal of athletic accomplishments, and the preparation for a post-sports future.

The Degree of Voluntariness

The degree of voluntariness in ending a sports career contributes greatly to the standard of the post-sport life transition (Taylor & Ogilvie, 1994b) and is comprehended as both a precedent factor and a mediating influence (Knights et al., 2019). Research suggests that the end of volunteer activity is associated with a less complicated transition to post-sport life (Roberts et al., 2015).

Forced retirement can lead to mental illness, such as diminished self-control (Haven, 2008), reduced self-respect (Knights et al., 2019), and more frequent episodes of frustration, anxiety, and depression (Hatamleh, 2013). The gradualism of the athletic retirement cycle (Hatamleh, 2013) also affects the level of transition to post-sport life. It is a precedent consideration that is closely related to the degree of voluntariness in terminating a sports career and consequently to post-sport life planning. A gradual transitional phase can result in fewer adjustment difficulties in post-sports life (Knights et al., 2019).

Athletic Identity

Athletic identity, defined as "the degree to which a person identifies with the position of an athlete" (Roberts et al., 2015), is one of the fundamental psychological issues that influence and decide post-sport adaptation (Taylor & Ogilvie, 1994b). The commitment of an athlete to sports and the consequent reduction in involvement in other social relationships also contribute to the development of a clear sporting identity (Sinclair, 1993), which can have both positive and negative implications for sportspersons. It can have a positive influence on sports achievements (Hatamleh, 2013), adherence to exercise, and performance in athletics (Lavallee, Gordon, & Robert Grove, 1997). Other studies also found data to indicate that people

with a clear sporting history are at risk of experiencing trouble after completing their athletics career (Sinclair, 1993). A clear athletic identity also influences the incidence of problems, and the period of post-sports mental and social adaptation (Lavallée, Gordon, & Grove, 1997).

Achieved Sports Goals

Assessing accomplished sporting goals, which is an arbitrary process, is one of the least researched mediating influences associated with terminating a sports career. Haven (2008) suggests that athletes who achieve the greater part of their sport-related goals experience less difficulty during retirement and in adapting to post-sport life.

Pre-retirement Planning for Post-Sports Life

Post-sport retirement training strongly affects the quality of life during and after the transition from a professional sporting career to retirement (Coakley, 1983). The training may include a variety of activities, such as continuing education, work-related projects and social networking events. Whereas there is an empirically established link between post-sports life planning and a less complicated transition to post-sports existence (Cecić Erpič, Wylleman, & Zupančič, 2004), many athletes (Knights et al., 2019) do

not think so far ahead about what their lives might be like after active sports participation comes to an end.

2.2.3 Quality of Adaptation to Post-Sport Retirement

Sports career termination may have either a positive or negative effect on the life of an athlete. When an athlete without regular participation in sport can effectively adapt to his new life, it can be called a positive termination (Knights & Sherry, 2019). Termination is not a single event or state. It is just one stage of a sequence in which a person relinquishes a certain position and engages in other activities in his or her life

The quality of the transition from the sports career and adaptation to the post-sport life thus depends on athletic and non-athletic factors. Their influence may lead to a positive, fairly smooth transition, or to more or less severe psychological, physical, psychosocial and/or occupational difficulties.

Retirement from sport and post-sport career change can be followed by psychosocial challenges, including social and cultural isolation (Taylor & Ogilvie, 2008), lack of social connections (Hatamleh, 2013), and problems in developing new relationships outside of sport (Park, 2012). The termination of professional sports participation can also be followed by challenges at the professional level, such as the lack of an academic job (Hatamleh, 2013), a

lack of technical credentials (Fernandez et al., 2006), less desirable job options (Knights et al., 2019), and a reduction in financial gains (Hatamleh, 2013). Physical challenges could possibly be accidents and health issues (Knights et al., 2019), detraining issues (Demetriou et al., 2018), and nutritional problems (Haven, 2008).

Psychological Difficulties

Psychological difficulties may represent consequential factors in terms of a conceptual model (Taylor & Ogilvie, 1994a). After the termination of sports, athletes may experience difficulties at the psychological level, including an identity crisis (Webb, Nasco, Riley, & Headrick, 1998), loss of self-confidence (Erpicˇ, Wylleman, & Zupancˇic, 2004), a decrease in self-esteem (Haven, 2008), a decline in life satisfaction, emotional problems, and regrets about unachieved athletic goals (Marthinus, 2007).

Physical Difficulties

Physical difficulties may include injuries and health problems (Haven, 2008), problems with detraining and dietary problems (Erpicˇ et al., 2004).

Social Difficulties

Retirement from sports and adaptation to post-sports career life may be accompanied by difficulties at the psychosocial level, including social and cultural loneliness (Marthinus, 2007), deficiency of social contacts and problems with building new relationships outside of sports (Marthinus, 2007).

Financial and Occupational Difficulties

The end of competitive sports involvement may also be accompanied by difficulties at the occupational level, such as the lack of an alternative career (Marthinus, 2007), lack of a professional qualification (Erpicˇ et al., 2004), less suitable professional career choices (Wylleman et al., 1999), and a reduction in income, accompanied by indebtedness (Haven, 2008).

2.2.4 Career Development Self-Efficacy

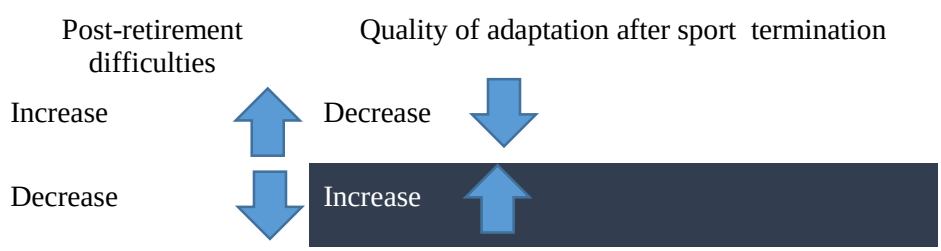
This term has been described as the confidence a person has that he or she can successfully handle career decisions (Betz, Klein, & Taylor, 1996). Self-efficacy refers to the "perceived ability to manage specific tasks necessary for career preparation, entry, adjustment, or change across diverse occupational paths." To establish the self-efficacy principle of career decision-making, which was described as the degree of confidence of an individual influenced by the achievement of career decision-making tasks. In

other words, it is the capacity of a person to make a career decision, and this definition relates to self-assurance (Moon, 2017). The scale consists of five factors related to career proficiencies, which are self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem-solving.

After a review of the related literature, the researcher was able to identify that the gap in the study related to the theoretical as well as empirical aspects. Therefore, by using a theoretical model that is illustrated in Figure 1, Figure 2, and Figure 3, the theoretical gap shown below was identified.

Figure 4

Theoretical Gap Identification



However, in this case the main focus was on the athletic factors and post-sport difficulties that were identified through the literature review. Therefore, in this study the collected empirical data are presented below as the hypotheses of the study. The research question Two (H1, H2, H3, H4) and Three (H5, H6, H7) were solved by using these hypotheses.

H1- Abrupt sports career termination decision would lead to a more difficult adaptation for the post-sport retirement life of athletes.

H2- Lower evaluation of sports achievements would lead to a more difficult adaptation for the post-sport retirement life of athletes.

H3- High athletic identity would lead to a more difficult adaptation for the post-sport retirement life of athletes.

H4- The lack of post-sport life planning would lead to a more difficult adaptation for the post-sport retirement life of athletes.

H5- Self-efficacy would have a significant mediating effect on sports career termination decision through the quality of adaptation for the post-sport retirement life of athletes.

H6- Self-efficacy would have a significant mediating effect on post-sport life planning and quality of adaptation for the post-sport retirement life of athletes.

H7- Self-efficacy would have a significant effect on the quality of adaptation for the post-sport retirement life of athletes.

2.3 Summary of Reviewed Literature

Concept	Authors and Years	Key Findings
Athletes' career termination	Ogilvie & Howe (1986) Werthner & Orlick (1986) Ogilvie & Taylor (1993)	Adaptation to the difficulties and trauma that follow career termination.
	Werthner & Orlick (1986) Alfermann & Gross (1997) Cecic Erpic (1998, 1999, 2000)	Voluntary career termination is correlated to a less difficult adaptation to post-sports life.
	Butt & Molnar (2009)	Involuntary retirement can lead to psychological difficulties such as reduced self-control.

Career transition process	Ogilvie & Taylor (1993)	A transition is an event or non-event that results in a change in assumptions about oneself and the world and thus requires a corresponding change in one's behavior and relationships.
	Cosha, LeCouteura, Crabb & Kettlera (2013)	Returning to compete in an elite sport was routinely depicted in media accounts as something that is not done often.
	Knights, Sherry & Ruddock-Hudson (2016) Lavallee (2019)	The area of career transition/ retirement from some elite sport that athletes are faced with when they end their competitive careers require an extensive range of psychological, interpersonal, and financial adjustments.
Athletic factors		
Gradualness	Werthner & Orlick (2014)	A gradual transitional process may lead to fewer difficulties related to adaptation to post-sports life.

	Ogilvie & Taylor (1993)	The quality of adaptation to post-sports life is also influenced by the gradualness of the process of athletic retirement.
Athletic achievement	Knights, Sherry, & Ruddock-Hudson (2016)	Athletes who attain the greater part of their goals related to sports, experience less difficultly during athletic retirement and in adapting to the post-sports life.
Athletic Identity	Brewer, Van Raalte (1993)	Athletic identity is one of the fundamental factors that influence and determine adaptation to post-sports life.
	Danish, Petitpas, & Hale, 1993; Roberts et al., (2015)	Athletic identity can have positive and negative consequences for participants in sports. It usually has a positive influence on sports achievements.
	Grove, Lavallee, & Gordon (2019)	A strong athletic identity influences the occurrence of difficulties and the duration of emotional and social adjustments needed to adapt to post-sports life.
Pre-retirement	Wylleman et al. (1993) Stambulova (1994)	The relationship between post-sports life planning and a less difficult adaptation to post-sports life has been empirically supported. Most

planning of post-sports life		athletes do not think in advance about their life after disengaging from active sports involvement.
Quality of retirement from sports	Werthner & Orlick (1986) Wylleman et al. (1993) Erpic (1998)	A high socio-educational status, which may influence the occupational opportunities in a post-sports career life also has a significant positive influence on the quality of life after retirement from sports.
	Ogilvie & Taylor (1993) Taylor & Ogilvie (1994, 1998)	The quality of the sports career transition and the adaptation to post-sports life thus depend upon athletic and non-athletic factors. That influence can result in a successful and relatively smooth transition, or present difficulties at the psychological, physical, psychosocial, and/or occupational level. These difficulties represent consequential factors.
	Knights, Emma, Ruddock-Hudson & Paul (2019)	There was a lack of organizational support, but they were satisfied overall with their social support network, which consisted of partners, family members, and friends.

Chapter 3. Method

This chapter describes how variables are measured and discusses the conceptualization, operationalization, and formulation of the research design. It also explains the sampling, data collection, data processing and scaling, data presentation and analysis.

3.1 Research Design and Approach

The purpose of the research can be exploratory, descriptive, explanatory or policy-oriented. These categories are not mutually exclusive though. Exploratory research might involve a literature search. The objective of exploratory research is to identify key issues and key variables. Descriptive research seeks to provide an accurate description of the observations made about the phenomena. Explanatory studies look for explanations regarding the nature of certain relationships. Hypothesis testing provides an understanding of the relationships that exist between variables. This research is of an explanatory nature. It is mainly focused on testing the hypotheses and understanding the relationship between variables.

The research approach is first planning the procedures for research that will cover all the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation. Research can be approached in

the following ways: Inductive/ Deductive, Applied/ Basic, and Qualitative/ Quantitative (Bassett & Bassett, 2003). It was decided to employ a deductive approach in this research to explore the new relationships between variables. Before collecting the data and analyzing same, a decision had to be made on whether the research approach should be Qualitative or Quantitative. There are three categories, which are, (a) Qualitative, (b) Quantitative, and (c) Mixed method. In this research, numerical data will be collected and analyzed. Therefore, this research can be considered as a quantitative study.

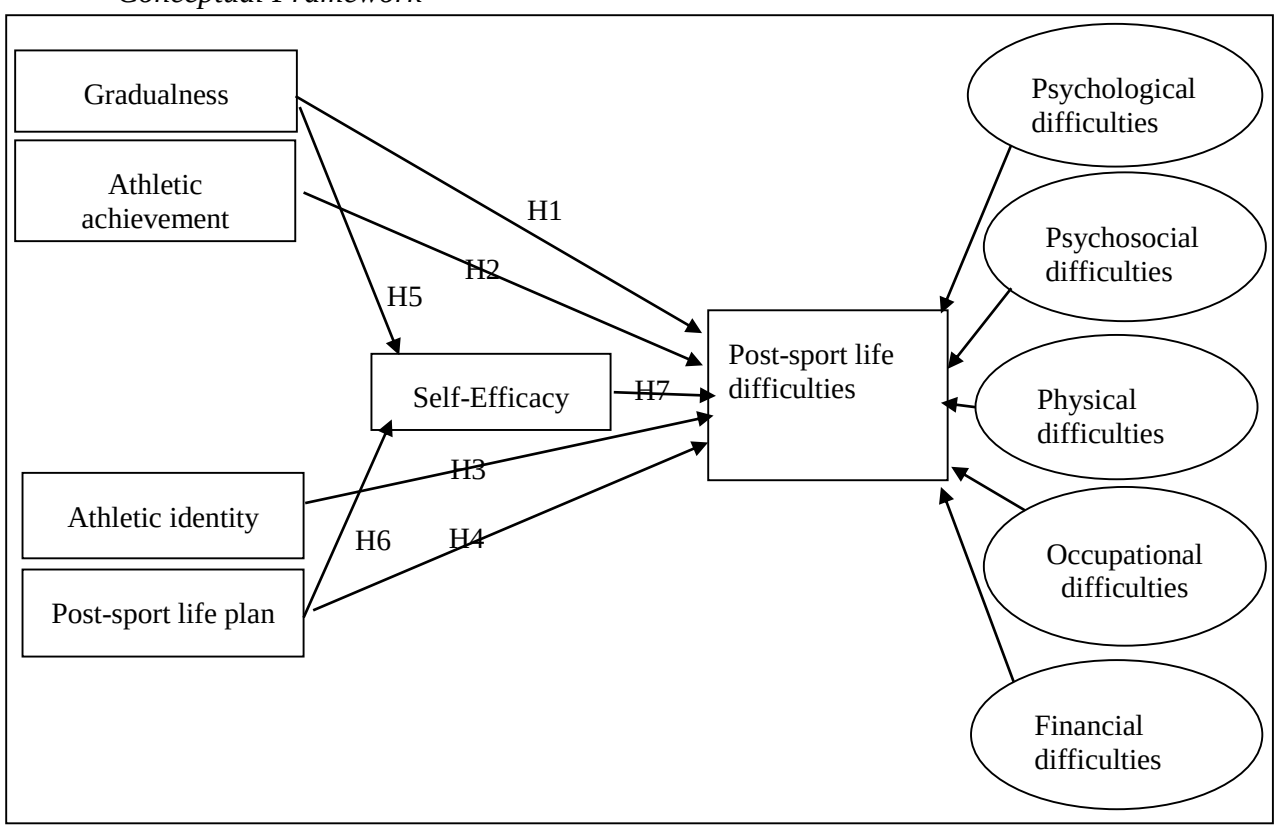
3.2 Conceptual Framework

After referring to the literature, it was found that the athlete career transition factor model is the most suitable one to use as a foundation for the conceptual framework of this study. The study of the effect of various factors, primarily the sports-related factors, on the quality of the process of transition has received increasing attention during the scientific analysis of sports career transition. In terms of athletes' termination, the conceptual model suggested by Taylor and Ogilvie (1994) offers a detailed description of how these variables impact the termination of sports careers, concentrating specifically on athletic variables. Reasons for sports career termination, factors related to retirement adjustment, and available resources influence the quality of sports career termination. Among the athletic antecedents and mediating factors that

determine the quality of the sports career termination process, the conceptual model emphasizes the voluntariness and gradualness of the sports career termination, the degree of athletic identity, the evaluation of athletic achievements, and the planning of a post-sports career life. Figure 2 shows the main conceptualization of this research idea.

Figure 5

Conceptual Framework



3.3 Variables and Operational Definition

The Study identified the five athletic factors most relevant to the athlete's career termination process. Specifically, gradualness, athletic achievements, post-sports life plan before termination, and athletic identity were described in the model. At the same time, the conceptual model recognized the five difficulties that have the most effect on the post-sports life of athletes. Whenever they can reduce these difficulties the quality of career termination might be expected to be high.

Therefore, the psychological, social, occupational, physical, and financial difficulties are going to be taken as the dependent variables. Besides self-efficacy, career decision, a newly recognized mediating variable, will be tested in this study. Hence, gender and age, which are defined as moderating variables, were identified after performing a thorough literature review.

Table 1

Clarification about Variables

Concept	Variables	Clarification	**Sources**
Sports career		The multiyear sports activities of the individual are aimed at high-level sports achievements and self-improvement in sport	European Federation of Sport Psychology (2000)
Career transition		An event or non-event that results in a change in assumptions about oneself and the world and thus requires a corresponding change in one's behavior and relationships	Schlossberg (1981)
Quality termination		An athlete has successfully adjusted to his new life without regular participation in the sport	Knights, Sherry, Ruddock-Hudson et al. (2019)
Post-sports life		Life after Sport	European Federation of Sport Psychology (2000)
Individual variables			

Athletic factors	Gradualness (Gradualness of sports career termination)	A gradual transitional process of sports career	Werthner & Orlick (1986)
	Athletic achievement	An athlete who achieves and sustains in a consistent manner a high level of athletic excellence in national or international competition.	Knights, Sherry, & Ruddock-Hudson (2016)
	Post-sport life plan	Post-sports life planning before retirement	Pearson & Petitpas (1990)
	Athletic identity	The degree to which an individual identifies with the athlete role	Roberts et al. (2015)
Dependent variables			
Post-sport life difficulties	Psychological difficulties	Influencing or intending to influence the mind or emotions	Baillie & Danish (1992)

	Psychosocial difficulties	Social and cultural loneliness, deficiency of social contacts and problems with building new relationships outside of sports.	Cecic´(1998) and Danish et al. (1993)
	Occupational difficulties	Degree of difficulties in making professional adjustments	Cecic´(1998)
	Physical difficulties	Reduction in physical training causing loss of lean muscle mass and fitness, altered body composition, and detraining or changes in nutritional practices as a function of occupation	Liu, Lee, Huang, Chien, Cheng & Kuo (2008)
	Financial difficulties	Degree of difficulties in financial adjustment	Wylleman et al. (1993)
Mediating variable			
Self-efficacy		An activity in which they believe they have the necessary skills to positively manage the demands of the situation	Bandura (1977)

3.4 Administering the Questionnaire

The questionnaire (see Appendix I) was initially prepared by the author based on the literature review. The questionnaire consisted of four major sections. The first section considered athletic factors and the second section presented the post-sport life difficulties. Section three covered the moderating variable question relating to career decision self-efficacy. Demographic and behavioral questions were contained in the last section. The questionnaire included a total of 60 items of which 47 items were related to the independent, dependent and moderate variables. The participants were asked to rate the items in each section on a 5-point Likert scale that ranged from strongly disagree (= 1) to strongly agree (= 5). The remaining 13 questions were related to demographic and behavioral matters. When preparing the questionnaire, the researcher made use of four scales that had already been proved as being consistent and accurate for the purpose of measuring these variables.

The Sports Career Termination Questionnaire (SCTQ)

Cecic and Erpic (2000) proposed that the SCTQ questionnaire should assess the characteristics of the sports career termination process by

evaluating the characteristics of an active sports career, sports career termination, transition to post-sports life, and adaptation to post-sports life.

Athlete Retirement Questionnaire (ARQ)

The Athlete Retirement Questionnaire (ARQ) was a 34-item instrument developed to address the transitional experiences of high-performance athletes. The ARQ consisted of self-assessment items designed to obtain information about the subjects' national team career, their retirement transition, and the practicality of providing transitional services to athletes. The content of the ARQ was based on a review of sports science and transition literature, as well as pilot interviews with high-performance athletes. Responses were indicated on a 5-point Likert scale, in the form of a forced-choice and open-ended format.

Athletic Identity Measurement Scale (AIMS)

Internal consistency values were calculated for both versions of the AIMS questionnaire. The AIMS is used to measure the strength and exclusivity of athletic identity including its cognitive, affective, and social foundations (Wylleman et al., 1999).

The Career Decision Self-Efficacy Scale (CDSE) (Taylor & Betz,1996)

The CDSE Moon (2017) has been used to test perceptions of self-efficacy for career decision-making tasks. Taylor and Betz proposed the CDSE as "the confidence of the person that he or she can complete the tasks necessary for making career decisions." The CDSE scale was designed to examine the practicality of the concept of self-efficacy. This scale can be used to recognize career indecision with high internal consistency and reliability.

3.5 Sampling Procedures

This section describes the population of the study, sampling and sampling procedures, recruitment of participants, and data collection. The study sample was selected by executing the five steps of the sampling process as depicted in Figure 6.

Figure 6

Sampling Process

Note: The sample selection procedure has five steps according to Sekaran and Bougie (2014)

Define the Population

Defining the population means providing precise information about the target population in respect of its elements, geographical boundaries and time. In this study, the main population comprised the athletes who had retired from national-level sport in Sri Lanka. In this study the researcher choosed main 24 geographical districts as geographical area and also the consider the athletes who was the maid career termination during the past ten years as apopulation.

Determining the Sample Frame

During the time of determining the sampling frame, the population of each sport will be taken into consideration. However, the available population statistics were not found to be in the same database. But according to the National Sports Federations of Sri Lanka, more than 1000 athletes have terminated their careers over the last ten years.

Determining the Sampling Design

Of the two major types of sampling (probability and non-probability sampling) that could be used for the determination of sampling size, non-probability sampling was selected as it was deemed to be the more appropriate sampling design choice for this study. It was also decided to go with

purposive sampling, as the sample must be selected to suit the specific purpose of this study.

Determine the Sampling Size

Based on the available statistics on enrolment of retired career athletes, the researcher decided to determine the size of the sample by using an online sample size calculator available at http://www.raosoft.com/samplesize.html. The sampling size is determined as recommended by Raosoft and is based on the following formula – where n= sample size, E= margin of error, N= population size, r= fraction of interesting responses and Z(c/100)= critical value for the confidence level:

$$x = Z(c/100)^2 r(100-r)$$

$$n = N x / ((N-1)E^2 + x)$$

$$E = \mathrm{Sqrt}[(N - n)x / n(N-1)]$$

According to this formula, the sample size selected for the study is at a 95% confidence level with a 5% margin of error, and a 50% response distribution of 300.

Executing the Sampling Process

Samples were selected from each of the national sports federations through the purposive sampling method with the permission of the athletes.

After choosing the purposive sample and obtaining the consent of the respondents, the questionnaires were distributed among them to get their answers.

3.6 Data Collection

An online survey, which is one of the most widely utilized survey methods, was used for the systematic gathering of data from the target respondents. The researcher collected data by using Google Forms, using it to distribute the questionnaires as well as to collect the responses through it. Finally, 302 responses were collected within the one-month data collection period.

3.7 Data Analysis Plan

After collecting data from the respondents, the data would be recorded in an SPSS sheet and cleaned up through editing, validating and imputation. An answer with missing values will not be considered as a complete response. The goodness of data is assessed through validity tests and reliability tests (how stably and consistently the questionnaire taps the variables).

Reliability and Validity of the data were verified before extracting descriptive information (Frequencies, Means, Standard Deviations and Errors) from the collected data. Then the normality test for data distribution was

administered to determine whether the data are parametric or non-parametric. This data analysis plan was executed using IBM's Statistical Package for the Social Sciences (SPSS) version 25 and IBM's Analysis of Moment Structures (AMOS) version 21 software.

Structural Equation Modelling (SEM)

The key analyses used were those that matched the statistical data analysis methods coming under the structural equation modelling (SEM) umbrella. The variance and covariance connected variables in a model are all based on these models. SEM results obtained during the Confirmatory Factor Analysis (CFA) led to deriving the structural model. These were discussed including their unit dimensionality, validity and reliability.

Path analysis

Models contrasted with path analysis approaches are usually concerned with the relationship between identified indicators. It is a way of evaluating theoretical interactions between influences (Shaheen et al., 2017). To explain this relationship, path analysis uses a series of regressions and correlations, but SEM models have an advantage over normal regression models in that they are able to take into consideration any measurement errors that might be contained in the variables observed (Oktaviani, 2018). There

are many opportunities as far as the model specification in path analysis is concerned. Therefore, they have multiple possibilities for modal instead of latent or hypothetical analysis.

3.8 Ethical Procedures

During the process of data collection, analysis and dissemination of the knowledge acquired through the study, the following ethical procedures were adhered to. The researcher would first request permission to conduct the research from the Dream Together Master Program of Seoul National University while the request to collect data would be made to the Sri Lankan national sports federations.

The researcher also made sure to obtain the fully informed consent of the respondents, to answer any questions they might have, to protect the confidentiality of their answers, and to strictly guard the privacy of the respondents. The researches strictly conformed to the ethical norms laid down by the Seoul National University. Besides, integrity and professionalism were maintained to ensure high standards in the research undertaking.

Chapter 4. Results

This chapter reports the results that were obtained through the study under several subheadings as data screening, sample characteristics, descriptive statistics, dimensions of the variables, fit of the CFA measurement model and structural model, path analysis and hypothesis testing.

4.1 Data Screening

The researcher has to consider carefully the type of statistical tests that must be employed to achieve the research objectives when screening the collected data as the conclusions of the study must protect the integrity of inferential statistics (Elsner & Tsonis, 1996). Since all the scaled items were set to the mandatory online version there were no missing data.

The data were collected from 307 respondents before the data collection period ended. Frequency analysis was performed with SPSS version 25 software, which provided much information regarding irrational or erroneous data such as wrong entries. Therefore, after deleting incompatible entries from the initial dataset, 295 entries were available for the analysis.

Normality

The normality of the dataset was checked through skewness and kurtosis values (please refer to Annexure II for tests of normality) for each variable. The rule of thumb used in the normality test was to look for skewness and kurtosis values that were greater than ±3. Variable values greater than ±3 were considered as non-normal data distribution.

4.2 Demographic Information

Demographic information such as gender, starting and ending age in sport, level of education, type of sport category represented and current position in that sport are shown in Table 2. According to that, out of 295 respondents 190were male (n= 190) and 105 were female (n= 105). This corresponds to 64.4% male and 35.6% female. Thus, the majority of respondents are males.

The ages at which the sample participants began their specific sports careers ranged from below 10 years (10.8%) to 26 years (0.3%) but the

majority started when they were from 11 to 15 years old (55.9%). 19.0% of the respondents were between 16 and 20 years of age. 9.8% were between

21 and 25 years of age. Looking at the career ending age of the participants, 32.2% of them were in the 26-30 year age group. More specifically, by the time they were between 15 and 20 years of age, 22.7% of athletes had already ended their career. 26.1% of sportspersons ended their career when they were 21-25 years old. 12.5% retired from serious sports when they were 31-35 years old.

Interestingly, all the athletes were educated. 178 out of the 295 respondents (60.3%) held a university degree. Of them, 113 held a Bachelor's degree *(n*= 113) and 65 held a Master's degree (*n*= 65). Percentage-wise this corresponded to 38.3% and 22.0% of the total number of respondents, respectively. Academic qualifications of the rest were below Ordinary Level (4.1%), Passed Ordinary Level examination (7.5%) and passed Advance Level examination 28.1%. Most of the respondents participated in individual sports events (70.2%) while the rest participated in team sports events (29.8%). Especially, there were 181 national level athletes (*n*= 181) representing 61.4% of the total sample and 114 International level athletes (*n*= 114) representing 38.6% of the total sample.

Table 2

Demographic Information

Demographic characteristics	*n*	%
Gender	Number	%
Male	190	64.4
Female	105	35.6
Level of education		
Below Ordinary Level	12	4.1
Ordinary Level	22	7.5
Advanced Level	83	28.1
Bachelor's degree	113	38.3
Master's degree	65	22.0
Category of sport		
Individual sports	207	70.2
Team sports	88	29.8
Level of participation		
National level	181	61.4
International level	114	38.6
Starting age for main sport specialization		
<10	32	10.8
11-15	165	55.9
16-20	56	19.0
21-25	29	9.8
>26	1	0.3
Sports career completion age		
15-20	67	22.7
21-25	77	26.1
26-30	95	32.2
31-35	37	12.5
36-40	2	0.7

Note: N= 295 (*n* representing each category as well as the percentage (%)

4.3 Descriptive Statistics

The information relating to the post-sports life of athletes is presented in Table 3, which includes the current position, type of withdrawal from active sport, period of adjustment, reason for the termination, and type of plan they had prepared for their post-sports life.

Out of 295 respondents, 168 athletes (56.9%) had withdrawn from active sports participation permanently. Some athletes had made a temporary decision (*n*= 57, i.e. 19.3%) while another 70 respondents (23.7%) were still unresolved. The position of 26.4% of athletes after termination was as coach while 25.1% had taken up employment in a non-sport field. During the post-sport life, a small number of athletes were engaged in administrative or management positions in the sports field. The figures were 8.1% and 2.7%, respectively.

Table 3

Athletes' Characteristics

Related characteristics	*n*	%
Type of withdrawal from active sport		
Permanent	168	56.9
Temporary	57	19.3
Unresolved	70	23.7

Current position		
As coach	78	78
As sports manager	8	8
As sports administrator	24	24
As sports instructor	31	31
In a non-sports field	74	74
Period of adjustment		
Less than one month	117	39.7
One month to three months	60	20.3
Four months to six months	32	10.8
Seven months to one year	30	10.2
One year to two years	41	13.9
Two years and more	13	4.4
Not yet adapted	2	0.7
Reason prompting the retirement		
Job-related reasons	126	42.7
Sport-related reason	32	10.8
Relationship-related reasons	30	10.2
Health-related reasons	46	15.6
Family-related reasons	19	6.4
Financial reasons	42	14.2
Type of plan for after sports life		
Holistic life plan	68	23.1
Long term plan	87	29.5
Intermediate term plan	73	24.7
Short term plan	31	10.5

Other	36	12.2

Note: N= 295 *(n* represented for each category as well as the percentage (%)

Period of adjustment is one of the important factors that is related to the post-sport life. There were 117 (*n*= 117, i.e. 39.7%) athletes who spent less than one month for their adjustment after leaving the sport career. 20.3% of athletes spent between one month and three months for the adjustment. Next longest period was between one year and two years and this represented 13.9% of the athletes who participated. The study also attempted to find out about the type of plan the athletes had in mind after their active sports life came to an end. Upon investigating this it was found there were 87 (*n*= 87, i.e. 29.5%) participants who had a long life plan, while 73 (*n*= 73, i.e. 24.7%) had an intermediate life plan, and 68 (*n*= 68, i.e. 23.1%) were considering a holistic life plan.

This study intends to comprehend fully the factors that play a part in the active sports life termination of athletes. In that context, it explores the exact reasons for the termination of the careers of athletes. Out of all participants 126 (*n*= 126, i.e. 42.7%) cited job-related reasons. Another 46 (*n*= 46, i.e. 42%) participants mentioned health-related reasons and financial reasons. Sport-related reasons were 32 (*n*= 32, i.e. 10.8%), while relationship and family-related reasons influenced 30 (*n*= 30, i.e. 19%) participants.

4.4 Measurement Model

The collected sample dataset obtained from the spectators was assessed to determine whether the statistical requirements for CFA and structural equation modelling had been met. After this, the data matrix was tested by using the correlation matrix, anti-image correlation matrix, Bartlett's test of sphericity, and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy in the following sections.

Many substantial correlations above 0.30 were found to be in the correlation matrix. This revealed that the items share common factors and therefore factor analysis was appropriate for using the dataset. *The Anti-Image Correlation Matrix* – Since all the elements in the anti-image correlation matrix (Appendix II) were higher than 0.50 and the majority of the off-diagonal values were low and represented the negative value of the partial correlation, the correlation matrix was deemed appropriate for use in factor analysis.

4.4.1 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis is a distinct kind of analysis about factors. It is used to examine whether the measurement of a construct is consistent with the researcher's interpretation of the existence of that construct. The CFA

method is employed to determine the construct validity. Model fit measurement was tested with chi-square degree of freedom (df). The CMIN/DF chi-square/df between 1 and 3 illustrates the model fit. The Comparative Fit Index (CFI) displays model fit values higher than 0.90 (Hu & Bentler, 1999). For Root mean residual Root Mean Square Error of Approximation (RMSEA) the value should not be less than 0.08 while Standard Root Mean Residual (SRMR) should not be greater than 0.09 (Rivera, Jacomossi, Barrichello, & Morano, 2018). The standard regression weight estimates showed that the variables indicated are significant and are representative of their corresponding latent variable. Composite Reliability (CR) and Average Variance Extracted (AVE) were calculated based on the final model using an Excel tool devised by Elsner et al. (1996). Every measurement model of a latent construct must be subjected to CFA before performing SEM on it (Awang, 2012). CFA was used to identify the underlying factors behind the gradualness of the termination decision, subjective evaluation of athletic achievements, athletic identity, organization of post-sports life under the independent factors and also psychological difficulties, social difficulties, occupational difficulties, physical difficulties, financial difficulties and the mediating factor of career decision self-efficacy, separately. IBM Analysis of Moment Structures (AMOS) software version 21

was used for CFA, along with the Maximum Likelihood Method. The CFA was undertaken using the same number of sample sizes (*N*= 295) for each dimension.

4.4.1.1 Factor Loading, Construct Reliability, Validity, and Internal Consistency

The factor loadings of the measurement items of the latent construct must be considered. When the factor loadings are of an acceptable level, unidimensionality is achieved. To ensure the unidimensionality of a measurement model, items with low factor loadings have to be dropped (Awang, 2012). There is a rule of thumb that the minimum factor loading should be higher than 0.5 (Hamid, Mustafa, Idris, Abdullah, & Suradi, 2011).

Reliability analysis for each factor was performed for the remaining items. The Cronbach's Alpha (α), mean, and standard deviation (S.D.) for each factor were determined. Reliability was measured via an internal consistency technique that computes using (α). An adequate value for α is 0.7 or higher (Peterson, 1994).

It is a requirement to consider three kinds of validity for the measurement model, specifically Convergent validity, Construct validity and Discriminant validity (Awang, 2012). Convergent validity is "the degree to

which two measures of the same concept are correlated" (Hair et al., 2010). Convergent validity can be confirmed by calculating the Average Variance Extracted (AVE). For every construct, the value of AVE has to be greater than 0.5 to get convergent validity (Awang, 2012). Average Variance Extracted (AVE) of 0.5 is required for achieving reliability and construct validity. Discriminant validity is "the degree to which two conceptually similar concepts are distinct" (Gronemus et al., 2010).

The perfect model fit is theoretically possible when chi-square has less than one degree of freedom. It is also possible if the estimated population parameters coincide with the sample parameters.

Table 4

Factor Loading, Construct Reliability, Validity and Internal Consistency

Construct	Item	*β*	*M*	*SD*	*α*	*CR*	*AVE*
The gradualness of the termination decision (GT)	GT1	0.82	3.34	1.09	0.79	0.76	0.62
	GT2	0.75					
	GT3	0.56					
Subjective evaluation of athletic achievements (AA)	AA1	0.76	3.43	1.08	0.76	0.76	0.52
	AA3	0.74					
	AA4	0.68					
	AA5	0.75					

The scale of athletic identity (AI)	AI1	0.77	4.33	0.75	0.85	0.85	0.54
	AI2	0.75					
	AI4	0.76					
	AI5	0.74					
Organization of post-sports life (PL)	PL1	0.52	4.12	0.76	0.73	0.75	0.44
	PL2	0.72					
	PL3	0.56					
	PL4	0.83					
Psychological difficulties (PD)	PD2	0.62	2.75	1.02	0.76	0.77	0.45
	PD3	0.73					
	PD4	0.76					
	PD5	0.58					
Social difficulties (SD)	SD3	0.77	2.16	1.19	0.80	0.87	0.69
	SD4	0.84					
	SD5	0.89					
Occupational difficulties (OD)	OD1	0.78	2.29	1.11	0.86	0.87	0.64
	OD2	0.89					
	OD3	0.87					
	OD4	0.65					
	PYD1	0.62	2.81	1.03			

Physical difficulties (PYD)	PYD2	0.81			0.80	0.81	0.51
	PYD3	0.72					
	PYD4	0.72					
Financial difficulties (FD)	FD1	0.81	2.67	1.14	0.86	0.86	0.62
	FD2	0.76					
	FD3	0.82					
	FD4	0.77					
Career decision self-efficacy (Self)	Self2	0.79	4.26	0.81	0.86	0.90	0.71
	Self3	0.92					
	Self4	0.85					
	Self5	0.82					

Note: β= Standardized factor loading*; M*= Mean; α= Cronbach's alpha*; CR*= Composite reliability*; AVE*= Average Variance extracted

Table 4 shows that all the factor loadings irrespective of their latent constructs are greater than 0.5. Thus, the unidimensionality of the overall measurement model is achieved. Reliability of each factor was higher than 0.7, which met the acceptable level. CR was GT= 0.765, AA= 0.768, AI= 0.857, PL= 0.757, PD= 0.770, SD= 0.872, OD= 0.879, PYD= 0.811, FD= 0.68, SE= 0.909 for all constructs, meeting acceptable levels. Average Variance Extracted (AVE) was higher than 0.5 for all constructs. Thus, reliability, construct validity, and internal consistency were achieved for the

overall measurement model. According to Table 4, all construct reliability values were greater than 0.7 with the CR ranging from 0.76 to 0.90. Therefore, the composite reliability attained the required level. The values of AVE were higher than 0.5 except for one of the factors. The AVE values ranged from 0.44 to 0.71. However, according to Fornell & Larcker's criteria (1981), the required level was achieved. Thus, based on all the values, the measurement model can be accepted as valid and reliable.

The purpose of subjecting the variables of a factor to CFA is to verify whether all the variables are loaded highly on a single factor. This is used to test whether there is consistency between the measurement of a construct and the researcher's understanding of the nature of that construct. The CFA method is substituted to determine the construct validity. Every measurement model of a latent construct must be subjected to CFA before performing SEM on it (Awang, 2012). Therefore, it is necessary to perform CFA on individual measurement models and get the results. The results obtained are summarized in Table 5.

Table 5

Fit Indices from the CFA

Construct	CMIN ($\chi 2$)	CMIN /DF	SRMR	TLI	CFI	RMSEA 90%
The gradualness of the termination decision -	6.53	3.27	0.05	0.95	0.98	0.09
Subjective evaluation of athletic achievements -	0.00	3.00	0.00	0.00	1.00	0.59
Athletic identity -	13.56	2.00	0.24	0.92	0.98	0.14
Organization of post-sports life -	21.09	0.60	0.01	1.00	1.00	0.00
Psychological difficulties -	6.02	3.01	0.04	0.95	0.99	0.08
Social difficulties -	13.42	2.00	0.08	1.01	1.00	0.00
Occupational difficulties -	11.77	5.88	0.04	0.95	0.98	0.13
Physical difficulties -	2.51	2.51	0.02	0.97	0.90	0.07
Financial difficulties -	6.51	1.00	0.02	0.94	0.99	0.13
Self-efficacy -	10.98	0.02	0.00	1.00	1.00	0.00
Cutoff -	Low $\chi 2$	≤ 3.0	≤ 0.08	≥ 0.9	≥ 0.9	≤ 0.10

Note: CMIN($\chi 2$)= Degree of freedom; CMIN/DF= Chi-square value divided by the degree of freedom; SRMR= Standardized Root-Mean-Square Residual; TLI= Tucker-Lewis coefficient; CFI= Comparative Fit Index; RMSEA= Root Mean Square Error of Approximation.

Athletic Factors

The four factors representing the athletic factors were subjected to CFA with fifteen variables (GT= GT1, GT2, GT3), (AA= AA1, AA3, AA4, AA5), (AI= AI1, AI2, AI4, AI5), (PL= PL1, PL2, PL3, PL4). The value of CMIN/DF was (GT= 3.270), (AA= 3.000), (AI= 2.000), (PL= 0.608), with the last two variables being below the recommended value of 3.0. The other fit indices also point to a fair and acceptable model fit. Values of NFI were (GT= 0.974), (AA= 1.000), (AI= 0.971), (PL= 0.93), thereby meeting the acceptable level, which is ≥0.90.

Application of the root mean square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI) rely heavily on the conventional cutoff values developed under the normal-theory of Maximum Likelihood (ML) with continuous data. The RMSEA values for the model were (GT= 0.088), (AA= 0.508), (AI= 0.14), and (PL= 0.000), which are equal to or less than 0.1. TLI should be overcome by the ≥0.90 level. For these four factors, TLI is also at an acceptable level. CFI was (GT= 0.982), (AA= 1.000), (AI= 0.975), and (PL= 1.000) with completed level. Therefore, all constructs achieve reliability and construct validity. Fit indices,

namely chi-square/df, CFI, SRMR, NFI, TLI, CFI, and RMSEA are in the acceptable 90% range.

Post-Sport Life Difficulties

Table 5 also shows the response factor from the athletes to post-sport life difficulties that were subjected to CFA with five constructs. They represent all nineteen variables, viz. (PD= PD2, PD3, PD4, PD5), (SD= SD3, SD4, SD5,), (OD= OD1, OD2, OD3, OD4), (PYD= PYD1, PYD2, PYD3, PYD4,), and (FD= FD, FD2, FD3, FD4). All fit indices pointed to a fair and acceptable model fit. The value of CMIN/DF was (SD= 2.00), (PYD= 2.519), (FD= 1.000), which were all within the recommended values. But two constructs (PD= 3.012) and (OD= 5.886) were not at an acceptable level. The RMSEA for the model (PD= 0.083), (SD= 0.000), (OD= 0.129), (PYD= 0.072), (FD= 0.137) were all at an acceptable level. These results are summarized in Table 5, which shows that each of the fit indices for the constructs was at an acceptable level. CFI was (PD= 0.986), (SD= 1.000), (OD= 0.985), (PYD= 0.996), (FD= 0.991). The measurement indicators NFI, TLI, and SRMR were at an acceptable level for all constructs.

Career Decision Self-Efficacy

As a final point, the response constructs for the athletes' career decision self-efficacy that was subjected to CFA were fulfilled with four variables (SELF= Self2, Self3, Self4, Self5). The value of CMIN/DF was 0.028, which is below the recommended value of 3.0. The RMSEA for the model was 0.000, which is less than 0.08 and so indicated a good model fit. Other fit indices also pointed to a fair and acceptable model fit (NFI= 1.000, TLI= 1.001, CFI= 1.000). The results are summarized in Table 5 that shows each of the fit indices. The final factor loading for each of the items is presented under its dimension in Table 5. These residual 38 items were used to develop the measurement model.

4.4.1.2 CFA Measurement Model

In SEM it is the measurement model that determines the association between constructs and their items (Henseler, 2017). The proposed CFA measurement model is presented in Figure 7. It shows the gradualness of the termination decision, subjective evaluation of athletic achievements, athletic identity, organization of post-sports life as an independent construct as well as psychological difficulties, social difficulties, occupational difficulties, physical difficulties, and financial difficulties as the dependent constructs with career decision self-efficacy as the mediating construct.

Fit Indices of the CFA Measurement Model

The first step in assessing the CFA measurement model was to consider the fit indices. Figure 7 shows that the initial overall measurement model has achieved a normed chi-square value of <5, CFI <0.9, and RMSEA <0.8. Thus, the model fits the dataset. As the model is used to assess unidimensionality, reliability, and validity, they are observed in the Amos output. The main attention is given to the modification indices and estimates. Factor loading of all items is greater than 0.5.

Table 6

Fit Indices for the CFA Measurement Model

Model	$\chi 2$	CMIN/DF	CFI	TLI	RMSEA	SRMR
Fit Model Confirmation	947.08	2.36	0.91	0.88	0.06	0.06
The criterion for the goodness of fit	Low $\chi 2$	1-3	≥ 0.9	≥ 0.9	≤ 0.10	≤ 0.08

Note: CMIN($\chi 2$)= degree of freedom; CMIN/DF= Chi-square value divided by the degree of freedom; SRMR= Standardized Root-Mean-square Residual; TLI= Tucker-Lewis coefficient; CFI= Comparative Fit Index; RMSEA= Root Mean Square Error of Approximation.

The value of CMIN/DF was 2.356 which is below the recommended value of 3.0. The RMSEA for the model was 0.068 which is less than 0.08 and therefore indicates a good model fit. Other fit indices also pointed to a fair and good model fit (NFI= 0.850, TLI= 0.887, CFI= 0.908). All the results are summarized in Table 6 including each of the fit indices for the CFA measurement model. AMOS was used for analysis along with the maximum likelihood method to estimate the parameters.

Correlations among Measurement Model

There is a rule of thumb that minimum factor loading should be greater than 0.5 (Gronemus et al., 2010). As all factor loadings achieved the accepted values all items can be kept as they are. However, the covariance matrix indicates higher correlations with some errors. The other aspect is that correlation with some constructs is almost 0.85. The correlations between the factors are presented in Table 7 and referring to it the variance for each of the factors was analyzed. The critical value of the estimates ranged from 4.690 to 9.376 for social difficulties, and all the estimated values were statistically significant at the 95% confidence level ($C.R.$ >1.96). Correlation co-efficient was at a significant level at p <0.01, P <0.05 as shown in Table 7.

Table 7

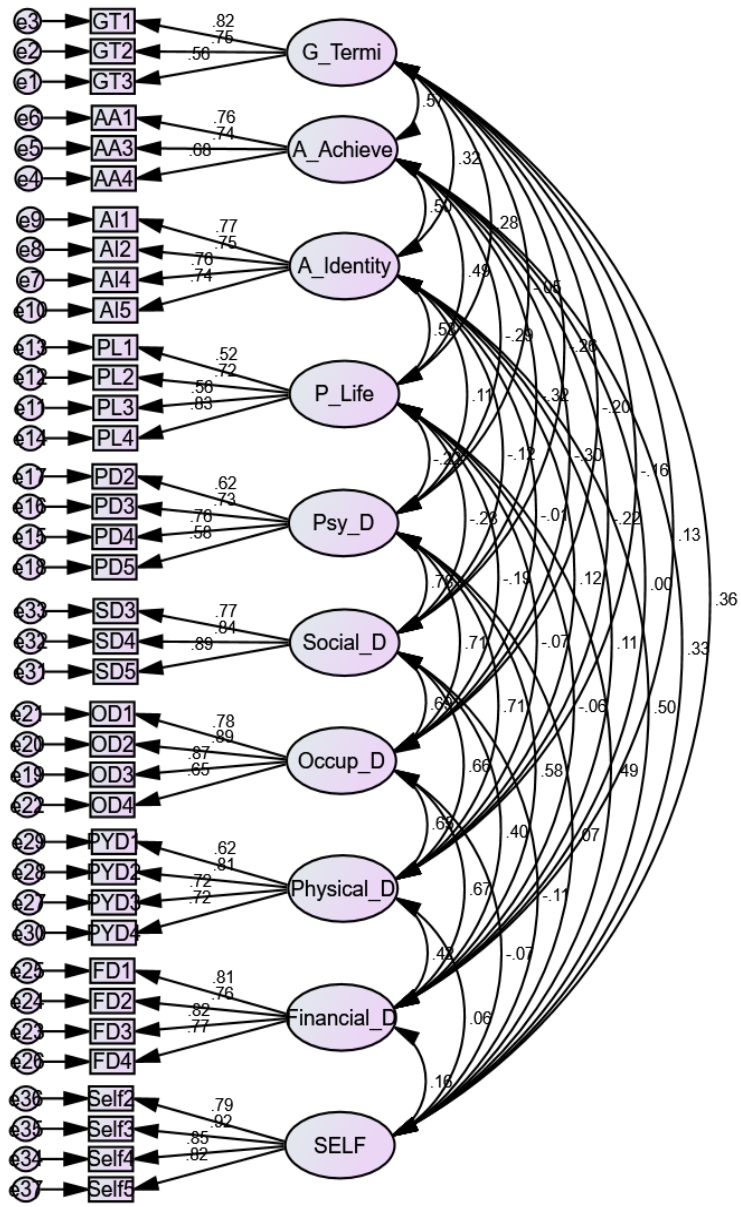
Correlations among the Latent Variables

	Correlations									
	GTT	AA	AI	PL	PD	SD	OD	PYD	FD	Self
GTT	_									
AA	0.45**	_								
AI	0.23**	0.38**	_							
PL	0.26**	0.36**	0.40**	_						
PD	-0.03	-0.19**	0.13*	-0.14*	_					
SD	-0.22**	-0.24**	-0.10	-.19**	0.61**	_				
OD	-0.12*	-0.23**	0.02	-.17**	0.59**	0.58**	_			
PYD	-0.13*	-0.16**	0.12*	-0.05	0.56**	0.56**	0.59**	_		
FD	0.13*	0.00	0.10	-0.03	0.48**	0.32**	0.60**	0.39**	_	
Self	0.31**	0.26**	0.40**	0.41**	0.09	-0.08	-0.03	0.07	0.15*	_

**p <0.01, *p <0.05

Figure 7

CFA Measurement Model

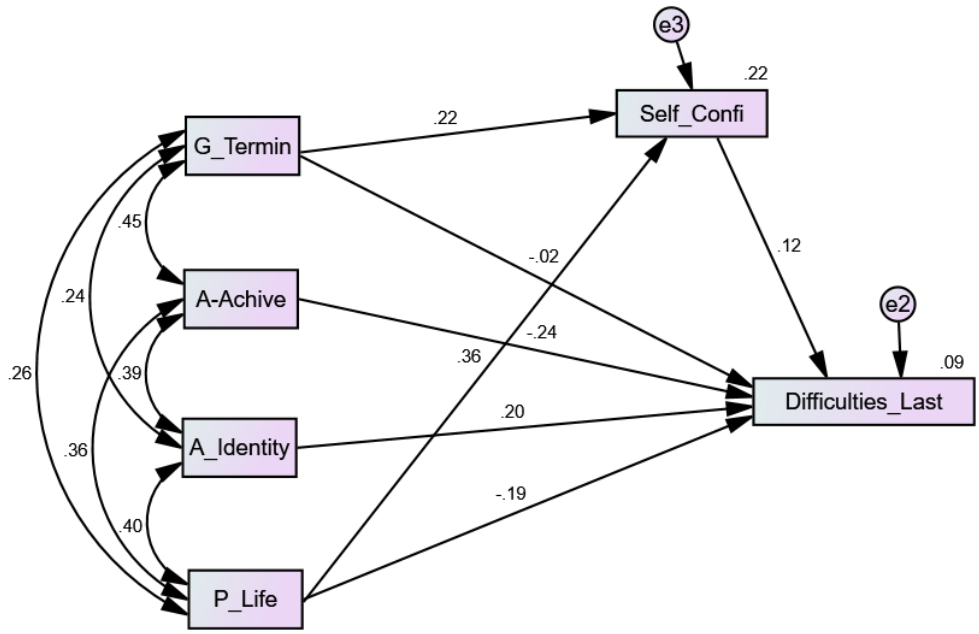


4.5 Structural Model

Based on the CFA measurement model shown in Figure 7, the structural model was developed. Hence, by substituting the CFA factors the hypothesized model was tested using a Simultaneous Equation Model (SEM). The structural model with its coefficients is presented in Figure 8. The fairness of the model was evaluated based on the fit indices that are discussed in the next section. The researcher was able to identify two latent constructs, namely post-sport life difficulties and athletic factors. Post-sport life difficulties have five constructs and they were computed as one variable. Moreover, athletic factors too have four indicators. The regression effect of Self-efficacy on athletic factors is depicted using a single-headed arrow as shown in the figure.

Figure 8

Structural Model



Note: The path analysis shows associations between post-sport difficulties and endogenous athletic-related variables (viz. gradual termination, athletic achievement, athletic identity, post-sport life plan), mediating for self-efficacy. Coefficients presented are standardized linear regression coefficients. $^{***}p$ <0.001.

Fit Indices of the Structural Model

The minimum default structural model was achieved. The value of CMIN/DF was 2, which is below the recommended value of 3.0. The RMSEA for the model was 0.057, which is less than 0.08 and indicated a match with good model fit. The other fit indices were fair and the overall model fit was

good (TLI= 0.93, CFI= 0.94, SRMR= 0.04). The fit indices of the model are summarized in Table 8.

Table 8

Fit Indices for the Structural Model

Model	$\chi 2$	CMIN/DF	CFI	TLI	RMSEA	SRMR
Fit Indices	20.98	2.00	0.94	0.93	0.05	0.04
The criterion for the goodness of fit	Low $\chi 2$	1-3	≥ 0.90	≥ 0.90	≤ 0.08	≤ 0.08

Note: CMIN($\chi 2$)= Degree of freedom; CMIN/DF= Chi-square value divided by the degree of freedom; SRMR= Standardized Root-Mean-square Residual; TLI= Tucker-Lewis coefficient; CFI= Comparative Fit Index; RMSEA= Root Mean Square Error of Approximation.

4.1.1 Path Analysis

Path analysis is a form of multiple regression statistical analysis used to evaluate causal models by examining the relationships between a dependent variable and independent variables. In this case, Post-Sport life difficulties constituted the dependent variable and four athletic factors were the independent variables, while career decision self-efficacy performed a mediating role. Among all the factors, athletic identity (0.20) exerted a

positive influence on post-sport life difficulties, and gradual termination (-0.20) did not appear to have a significant influence on post-sport life difficulties. However, athletic achievements (-0.24) and post-sport life plan (-0.19) had a significant influence on the post-sport life difficulties of athletes. Further, in mediation association in which an intervening variable mediates an independent variable and influences it, the association can be either partial or full (Elsner et al., 1996). According to the path diagram, the mediating effect of career decision self-efficacy is not strong enough to overcome difficulties.

Table 9

Standardized Regression Weights

			Estimate	*SE*	CR	*p*
Self_	<---	GT	0.16	0.0	4.21	***
Self	<---	PL	0.37	0.05	6.66	***
Difficulties	<---	GT	-0.01	0.05	-0.28	0.77
Difficulties	<---	PL	-0.21	0.07	-2.86	0.00**
Difficulties	<---	AA	-0.1	0.05	-3.54	***
Difficulties	<---	AI	0.23	0.07	3.1	0.00**
Difficulties	<---	Self	0.13	0.06	1.96	0.05*

***p <0.001, **p < 0.01, *p <0.05

4.6 Hypothesis Testing

Four hypotheses were developed to answer research question two and three hypotheses were developed to answer research question three. The statistical values and results of the hypothesis tests are summarized in Table 9. In this table it can be seen that the significant regression path indicates ***p <0.001, **p <0.01, *p <0.05. According to the path representing linear regression values, the hypothesis can be stated as follows.

H1- Abrupt sports career termination decision would lead to a more difficult adaptation to post-sport retirement life for athletes.

According to RQ2, hypothesis (H1) proposed that Abrupt Sports Career termination decision would make it more difficult for athletes to adapt to a post-career life. Since the statistical results presented in Table 9 (R= -0.01) are accepted, the hypothesis should be $C.R.$ >1.96 or t-value <-1.96. The probability of getting a critical ratio as large as 0.282 in absolute value is 0.778. In other words, the regression weight for GT in the prediction of Difficulties is not significantly different from zero at the 0.05 level. According to that, there was insufficient evidence to reject the null hypothesis of this study. Therefore, it can be concluded that the hypothesis is not

acceptable because abrupt sports career termination decision would not lead to more difficulties for athletes in adapting to post-retirement life.

H2- Lower evaluation of sports achievements would lead to more difficulties for athletes in adapting to a post-sport retirement life.

According to RQ2, hypothesis (H2) proposed that lower evaluation of sports achievements would lead to a more difficult career termination process for athletes. Since the statistical results in Table 9 accepted the null hypothesis ($C.R.$= -3.543), the value was below the acceptable level, which means that $C.R.$ >1.96 or t-value <-1.96). The probability of getting a critical ratio as large as 3.544 in absolute value is less than 0.001. In other words, the regression weight for AA in the prediction of Difficulties is significantly different from zero at the 0.001 level. According to that, there was insufficient evidence to accept the null hypothesis of this study. Therefore, it can be concluded that a lower evaluation of sports achievements would lead to a more difficult adaptation for the post-sport retirement life of athletes.

H3- Strong athletic identity would lead to more difficulties for athletes in adapting to a post-sport retirement life.

Hypothesis (H3) proposed that a strong athletic identity would lead to a more difficult career termination process for athletes. Since the statistical

results in Table 9 rejected the null hypothesis ($C.R.$= 3.078), the value was below the acceptable level, which means $C.R.$ >1.96 or t-value <-1.96. The probability of getting a critical ratio as large as 3.187 in absolute value is 0.001. In other words, the regression weight for AI in the prediction of Difficulties is significantly different from zero at the 0.001 level. According to that, there is insufficient evidence to accept the null hypothesis of this study. Therefore, it cannot be concluded that a strong athletic identity would lead to a more difficult career termination process for athletes. Also, there have positive impact in between the two variables.

H4- The lack of planning for a post-sport life would make it more difficult for athletes to adapt to a retirement life.

Hypothesis (H4) proposed that the lack of a post-sport life planning would lead to a more difficult career termination process for athletes. According to the statistical results presented in Table 9, the value of C.R. ($C.R.$= -2.86) was below the acceptable level of ($C.R.$ >1.96 or <-1.96), which means the probability of getting a critical ratio as large as 2.862 in absolute value is 0.004. In other words, the regression weight for PL in the prediction of Difficulties is significantly different from zero at the 0.01 level. According to that, there was insufficient evidence to accept the null hypothesis of this

study. Therefore, the conclusion was that the lack of post-sport life planning would lead to more difficulties to athletes in adapting to their retirement life.

H5- Abrupt sports career termination decision would have a significant effect on quality of adaptation to retirement life of athletes.

According to RQ3, hypothesis (H5) proposed that abrupt sports career termination decision would result in low Self-efficacy when athletes wanted to adapt to a Post-Sport Retirement life. According to the statistical results in Table 9, the value of C.R. ($C.R.$= -2.86) was under the acceptable level, which means ($C.\ R.$ >1.96 or <-1.96). The probability of getting a critical ratio as large as 4.213 in absolute value would be less than 0.001. In other words, the regression weight for GT in the prediction of self-efficacy is significantly different from zero at the 0.001 level. According to that, there was insufficient evidence to accept the null hypothesis of this study. Therefore, the conclusion was that low sports career termination decision would lead to low Self-efficacy in adapting to Post-Sport Retirement life for athletes and that high sports career termination decision would result in high Self-efficacy when adapting to Post-Sport Retirement life for athletes.

H6- Lack of post-sport life planning would have a significant effect on quality of adaptation to the retirement life of athletes.

Hypothesis (H6) proposed that lack of post-sport life planning would lead to low Self-efficacy in adapting to the Post-Sport Retirement life of athletes. According to the statistical result given in Table 9, the value of C.R. ($C.R.$= 6.66) was under the acceptable level, which means ($C.R.$ >1.96 or <-1.96). Thus, the probability of getting a critical ratio as large as 6.667 in absolute value is less than 0.001. This means the regression weight for PL in the prediction of Self-efficacy was significantly different from zero at the 0.001 level. According to that, there was insufficient evidence to accept the null hypothesis of this study, and therefore, the conclusion was that lack of post-sport life planning would lead to low Self-efficacy in adapting to Post-Sport Retirement life for athletes. Higher level of post-sport life planning would lead to high Self-efficacy in adapting to the Post-Sport Retirement life of athletes.

H7- Self-efficacy would have a significant effect on the quality of adaptation to the post-sport retirement life of athletes.

Hypothesis (H7) proposed that high self-efficacy would lead to a less difficult adaptation to the retirement life of athletes. According to the statistical results in Table 9, the value of C.R. ($C.R.$= 1.96) was under the acceptable level, which means that ($C.R.$ >1.96 or <-1.96). Thus, the probability of getting a critical ratio as large as 1.962 in absolute value is less than 0.050. This means that the regression weight for self-efficacy in the prediction of difficulties is significantly different from zero at the 0.05 level (two-tailed). Accordingly, there was insufficient evidence to reject the null hypothesis of this study. Therefore, the conclusion was that high self-efficacy would lead to a higher level of difficulty in adapting to the retirement life of athletes. Low Self-efficacy would lead to less difficulty in adapting to retirement life for athletes.

Table 10

Results of Testing the Hypotheses

Research Questions	Hypothesis	Results

RQ1	H1- Abrupt sports career termination decision would lead to more difficulty in adapting to the retirement life of athletes.	Rejected
	H2- Lower evaluation of sports achievements would lead to more difficulty in adapting to the retirement life of athletes.	Accepted
	H3- High athletic identity would lead to more difficulty in adapting to the retirement life of athletes.	Accepted
	H4- The lack of post-sport life planning would lead to more difficulty in adapting to the retirement life of athletes.	Accepted
RQ3	H5- Self-efficacy would have a significant mediating effect on sports career termination decision and on quality of adaptation to the retirement life of athletes.	Accepted
	H6- Self efficacy would have a significant mediating effect on post-sport life planning and on quality of adaptation to the retirement life of athletes.	Accepted
	H7- Self-efficacy would have a significant effect on the quality of adaptation to the retirement life of athletes.	Accepted

The conceptual model presents four athletic factors and the overall post-sport life difficulties as the independent and dependent variables. But according to the literature review the post-sport difficulties have five factors altogether. Also, the CFA (Figure 7) results confirmed that difficulty has five factors. They are, psychological difficulties, social difficulties, occupational difficulties, physical difficulties, and financial difficulties.

Chapter 5. Discussion

This chapter summarizes all the research matters dealt with by the study, discusses the findings and the implications from the academic and managerial standpoints. Then it mentions the limitations of the study, and offers suggestions for future research. Finally, the chapter ends with the conclusion.

5.1 Summary of the Findings

The summary of the study focuses on discussing the key findings under the study objectives. This study primarily focuses on the effect of athletic factors on the quality of adaptation to Post-Sport Retirement of national-level athletes in Sri Lanka. According to that context, researcher focused on three main research objectives – 1) *To identify the fundamental factors determining the quality of adaptation to post-sport termination, 2) To analyze the effect of these factors on the quality of adaptation to post-sport termination, and 3) To examine the effect of adjustment self-efficacy as a mediating factor on the quality of adaptation to post-sport termination.* To realize these objectives, a review of the literature was done to identify the four athletic factors and the five difficulties, which would influence the quality of adaptation to post-sport retirement life.

To facilitate conduct of the study, researcher developed seven hypotheses to cover all the research objectives. The findings of the research that are relevant to each objective are discussed in the following section.

5.1.1 The First Research Objective

To identify the effective factors of quality of adaptation to post-sport retirement.

The quality of adaptation to post-athletic career retirement is determined by sports career termination difficulties, which may be of a psychological, social, physical, financial or occupational nature or a combination thereof, and difficulties with organizing the post-sports life (Alfermann, Stambulova, & Zemaityte, 2004). After studying the factors governing effective career termination, Taylor and Ogilvie (1994) developed a conceptual model of retirement adaptation among athletes. Additionally, this model is able to examine the nature of the career transition process, such as factors related to transition adaptation, managing resources that affect the responses to career transition, quality of adjustment to career transition, and also possible treatment issues for stressful reactions to career transition.

The conceptual model underlines the voluntariness, gradualness of the sports career termination, the degree of athletic identity, the evaluation of

athletic achievements, post-sport career life, and mediation factors that determine the quality of the sports career termination process.

According to the rule of thumb, the minimum factor loading should be higher than 0.5 (Hamid et al., 2011). Therefore, in this study four athletic factors such as gradualness of sports career termination, degree of athletic identity, evaluation of athletic achievements, planning of a post-sport life and five types of after termination difficulties were identified.

5.1.2 The Second Research Objective

To analyze the effect of various factors on the quality of adaptation to post-sports retirement.

The researcher was able to identify two latent constructs, namely post-sport life difficulties and athletic factors. Post-sport life difficulties have five constructs and they were computed as one variable. Moreover, athletic factors have four indicators. Based on previous research it was hypothesized that an abrupt sports career termination, a lower evaluation of sports achievements, the lack of a post-sports life planning, and a high athletic identity would lead to a more difficult adaptation to life after the sports career termination.

The gradualness of the process of athletic retirement was found to have no effect on the quality of sports career termination. This is not in

keeping with the findings of Werthner and Orlick (1986) and Wylleman et al. (1993). Therefore, if athletes make their career termination decision a gradual process its cannot affect the quality of adaptation after career termination though they may have fewer difficulties. However, when looking at difficulties separately, they may have a significant impact on social and physical difficulties. It means that when there is a gradualness of termination that would lead to less social and physical difficulties for Sri Lankan athletes.

The consistency of the sports career termination process was related to achieving the stated athletic goals before the sports career came to an end. To some degree, this corroborates the descriptive results of Werthner and Orlick (1986), who found that after retirement from the sports phase, athletes who had managed to achieve their objectives suffered fewer difficulties. However, these researchers did not have reliable information about the kind of problems that athletes had to deal with. According to the current study, the hypothesis was at a significantly acceptable level, which is that lower evaluation of sports achievements would lead to a more difficult career termination process for athletes. Conversely, the highest athletic achievement and satisfying experience of sports life would lead to a better quality of career termination for athletes. Poor athletic achievements had a negative influence on post-sport life, leading to difficulties. Therefore, if athletes want to face

fewer difficulties out of these five types of difficulties and increase the quality of their post-career life, they should aim for the highest athletic achievements.

In the same way, Pre-retirement planning is seen as one of the most significant factors that can contribute to a less difficult adaptation process (Coakley, 1983). According to Cecić Erpič et al. (2004), the gaps in the operationalization of post-sports career planning between the current results and those of other authors may show some differences. Also, according to the research, several activities were operationalized, ranging from continuing education to vocational activities and activities related to the social network of athletes. As per the current study results, the more attention paid to retirement planning for post-sport life, the more significant the impact on the quality of career termination. Furthermore, if athletes have a pre-retirement plan for post-sport life, they can reduce the psychological, social, financial, and occupational difficulties significantly. But there is no evidence to suggest that physical difficulties would be reduced.

The degree of athletic identity and its domination over other social positions also exerts a major influence on the quality of the sports retirement process; in particular, the degree of psychological difficulties faced and the degree of difficulties associated with the organization of post-sports life.

These findings tally with the results of other researches (Martin et al., 2014; Brewer, Raalte, & Petitpas, 2000). According to the results of the current study, athletic identity has a significant relationship with quality of career termination. It means that low athletic identity would not lead to a less difficult sports career termination. In terms of the Sri Lankan context, athletic identity does not does not have any influence in reducing post-sport difficulties.

As per the second research objective, gradual career termination decision has no significant effect on improving the quality of adaptation to post-sport career termination. It means that this factor would not lead to a more effective career termination of athletes. But when considering the difficulties separately some of the factors provide acceptable support for them as explained above. Athletic identity, sports achievements and post-sport life plan would lead to effective career termination. Accordingly, each difficulty can be reduced individually in terms of these factors.

5.1.3 The Third Research Objective

To examine the effect of career decision self-efficacy as a mediating factor on the quality of adaptation to post-sport retirement.

The third research question sought to examine the statistical effect of career decision self-efficacy as a mediating factor on quality of adaptation to the career termination process of elite athletes.

As facilitators, self-efficacy was substituted where perceived barriers served as obstacles to such a method, but this is consistent with previous research (Wendling & Sagas, 2020). Important positive experiences with each other have shown more support for the model, self-efficacy, career goals, and career preparation, indicating that setting career goals and planning for a career after sport is facilitated by improved confidence in making career decisions. Previous studies found that higher self-efficacy contributed to increased competency in behavior. In terms of that, the current study focuses on the mediating effect of career decision self-efficacy on gradualness of career termination decision and post-sport life plan to facilitate adaptation to change in career or retirement. However, there was insufficient evidence to reject the null hypothesis of this study, thereby confirming there is a statistically significant mediating effect of career decision self-efficacy on post-sport life difficulties. It means that if self-efficacy was high, then post-sport life difficulties will also be high. Looking at H5 and H6 it can be seen they have a significant impact on the gradual termination of post-sport life

plan and self-efficacy. It means that when this factor is positive the difficulties are also positive.

5.2 Implications of the Study

The results of this study have important theoretical implications and practical policy implications for the sports field and policymakers in the sports administration. Some of them had observed a negative and significant impact of post-sport life difficulties on former national level athletes of Sri Lanka. The way of handling and managing human resources was critical to achieving the goals of both the athletes and the institutions themselves. The results proved that the importance of athletic factors in developing "quality of adaptation to career termination" of athletes was a vital asset to the sports sector.

The balancing quality of post-sport life domains increases the in-role and extra-role behaviors of athletes, as they are more willing to put in additional effort into their sports life. Hence, based on the empirical findings and concluding remarks, the following recommendations are proposed.

The junior level is an important developmental period for many emerging seniors to shape their identity for adulthood and make career decisions. It is critical to provide junior sportspersons with suitable learning

opportunities as that will inspire them to plan for a career after leaving sport. Specially designed programs will develop the abilities of student-athletes to prepare for their future careers. Therefore, career preparation courses offered to athletes should be analyzed to assess their efficiency using the available measures and model. Also, cultivating key personal traits and some career management skills may directly or indirectly prepare the athletes for a career after sport.

Career specialists, administrators, coaches, and sports psychologists may help improve the athletes' ability to make career choices, which will in turn enable them to set practical career goals and pursue them. These aspirations are more likely to be converted into career plans with student-athletes taking the requisite steps to move towards defined goals.

Introduction of career guidance and post-sport life plan will greatly benefit national-level athletes as they can apply these not only for sport but also for life. Further, retired athletes who are perceived as maintaining a high quality of post-sport life can serve as role models for encouraging junior athletes engaged in sports activities presently. The Sri Lankan government can formulate a retirement policy for athletes by initiating career development

programs, and arranging telework and alternative schedules for solving the issue of post-sport difficulties faced by those athletes who are past their prime.

Although retired athletes are performing an important role as coach in many sports activities, they also play a hidden role that is not very visible when considered in the Sri Lankan context. As for the findings, many former athletes have social difficulties and psychological difficulties because they are highly dissatisfied about the lack of appreciation for their contributions. The government should therefore pay more attention to this matter and offer suitable rewards to make them feel more motivated and productive.

Considering the Sri Lankan sports sector, it is still rather non-systematic and lacking in the proper application of diplomacy and policy implementation. Hence, creating a conducive and pleasant sports environment will go a long way towards conducting the operations smoothly and without any pressure. It will also minimize the stress and dissatisfaction of athletes while enhancing the proper management of this sector.

Although there is no such thing as the best retirement practice or policy, many governments around the world adopt different approaches to assist athletes in the country to adapt comfortably to a post-sport life. It is recommended to the Sri Lankan government to consider the relevant factors

that affect the athlete's quality of life in the context of their achievements and pride and in bringing honor to the country. Therefore, the government should develop an institutional and regulatory framework in the Sri Lankan context to assist the athletes to enjoy a good quality of post-sport life.

According to the findings, the number of dependent variables was statistically significant and had a negative impact on the athletic factors. The findings also revealed that when the number of independent variables increased, the post-sport difficulties of the athletes were reduced. Thus, it is advisable for the national federation of sports bodies, the national Olympic committee and the sports ministry to pay attention to providing a supportive mechanism for athletes, especially in respect of national and international level competitions.

As the athletic achievements, post-sport life plan, and athletic identity have the effect of maximizing the quality of post-sport life, it will not be a big challenge for the administrative and policymaking officials to create a sound institutional environment to maintain the concerned domain in a robust state from the beginning to end. In this respect, two matters should be considered. One is the development of policies and boundary management strategies to

guide the athletes' careers. The other is the creation of opportunities for athletes to cultivate their strategies to balance the various demands.

5.3 Limitations of the Study

This study is subject to the following limitations, with the major limitation being that the findings of this study cannot be applied to every kind of athlete, as its focus is on national level athletes. This study was mainly conducted with the focus on athletically related factors as the independent variable for the post-retirement life of athletes.

One of the major findings of this study was that the gradual transition and athletic identity did not have a statistically significant effect on the athlete's quality of post-sport life. The study focused only on the model proposed by Taylor and Ogilvie (1994a). However, when discussing that topic, the factor of athletic achievements and post-sport life plan were closely knitted into it. Every variable was measured using a quantitative method and given a rating through a Likert scale. However, the actual quality of the retirement about athlets could not be measured using this scale, as this study did not use panel analysis to measure the variables.

Despite the lack of empirical evidence in the three models presented, they still managed to provide an insight into what appear to be logical ways

of synthesizing ideas about retirement in sport. Also, in this study the population comprised the entire sports team and therefore the findings could not be generalized to include individual sportspersons. This has proved to be a limitation of this study.

As the researcher and the respondents of the study were subject to time and resource constraints because of remote geographical locations and inaccessibility to the research field due to the COVID-19 pandemic, the respondents had to answer the questions in the absence of researcher.

5.4 Suggestions for Future Research

This study focused on the relationship between athletic factors and effective sports career termination. Thus, research on the same topic but covering all types of sports is recommended for future study. Also, comparative studies with other governments that have similar governmental contexts are also important to identify the areas missed by the Sri Lankan government so that it can learn from their policies. There is a notable absence in Sri Lanka of career assistance research initiatives focused on theoretical principles or modules. In general, more effort should be made to design a structured research program in this respect. The empirical questions could be driven by the currently applicable conceptual models.

On the other hand, there is a strong need for athletes to obtain help from their sports federations. Future research should be aimed at defining the role that these federations should play in athletes' career growth and their future transition from elite sport. Finally, no transition performance measure has been included. In future studies, multiple regression analysis should be performed to evaluate those variables that contributed the most to a good transition from the sport.

5.5 Conclusion

This study confirms that the relationship between athletic factors and quality of career termination is a dynamic and multifaceted phenomenon. Therefore, this study focused on the three research questions related to the quality of career termination process. Then, five hypotheses were proposed and there was insufficient evidence to reject two of the hypotheses of this study. With two other hypotheses there was a statistically significant relationship. According to the research question, two qualities of the post-sport life model have been developed with scales, which is unique as this is an important model to judge the quality of career termination in the sports sector. This can be used by scholars, managers, and decision-makers as a measurement tool in the athlete’s career planning and development context.

References

Alfermann, D., Stambulova, N., & Zemaityte, A. (2004). Reactions to sports career termination: a cross-national comparison of German, Lithuanian, and Russian athletes. *Psychology of Sport and Exercise, 5*(1), 61-75.

Awang. (2012). Overview of Structural Equation Modeling (SEM). *A Handbook on SEM*, 1-17.

Carapinheira, A., Mendes, P., Carvalho, P. G., & Travassos, B. (2018). Sports career termination in football players: Systematic review. *Revista Iberoamericana de Psicologia Del Ejercicio y El Deporte*, *14*(1), 61–65.

Cecić Erpič, S., Wylleman, P., & Zupančič, M. (2004). The effect of athletic and non-athletic factors on the sports career termination process. *Psychology of Sport and Exercise, 5*(1), 45-59.

Coakley, J. J. (1983). Leaving competitive sport: Retirement or rebirth? *Quest, 35*(1), 1-11.

Cosh, S., LeCouteur, A., Crabb, S., & Kettler, L. (2013). Career transitions and identity: A discursive psychological approach to exploring athlete identity in retirement and the transition back into elite sport. *Qualitative Research in Sport, Exercise and Health*, *5*(1), 21-42.

Demetriou, A., Jago, A., Gill, P. R., Mesagno, C., Demetriou, A., Jago, A., & Gill, P. R. (2018). Forced retirement transition : A narrative case study of an elite Australian Rules football player. *International Journal of Sport and Exercise Psychology*, *18*(3), 1-15.

Elsner, J. B., Tsonis, A. A., Elsner, J. B., & Tsonis, A. A. (1996). Multivariate

Statistics. *Singular Spectrum Analysis*, 29-35.

Erpicˇ, S. C., Wylleman, P., & Zupancˇic, M. (2004). The effect of athletic and non-athletic factors on the sports career termination process. *Psychology of Sport and Exercise, 5*(1), 45-59.

Fernandez, A., Stephan, Y., & Fouquereau, E. (2006). Assessing reasons for sports career termination: Development of the Athletes' Retirement Decision Inventory (ARDI). *Psychology of Sport and Exercise, 7*(4), 407-421.

Gronemus, J. Q., Hair, P. S., Crawford, K. B., Nyalwidhe, J. O., Cunnion, K. M., & Krishna, N. K. (2010). Potent inhibition of the classical pathway of complement by a novel C1q-binding peptide derived from the human astrovirus coat protein. *Molecular Immunology, 48*(3), 305-313.

Grove, J. R., Lavallee, D., & Gordon, S. (1997). Coping with retirement from sport: The influence of athletic identity. *Journal of Applied Sport Psychology, 9*(2), 191-203.

Hamid, M. R. A., Mustafa, Z., Idris, F., Abdullah, M., & Suradi, N. R. M. (2011). Measuring Value-Based Productivity: A Confirmatory Factor Analytic (CFA) Approach. *International Journal of Business and Social Science, 2*(6), 85-93.

Hatamleh, M. R. (2013). the Life Transitions of High-Performance Athletes Retirement From Sport. *European Scientific Journal, 99*(1), 857-881.

Hattersley, C., Hembrough, D., Khan, K., Picken, A., Maden-Wilkinson, T., & Rumbold, J. (2019). Managing the transition into retirement from the sport for elite athletes. *Professional Strength & Conditioning*, (53), 10-

16.

Haven, L. (2008). The Effects of Athlete Retirement on Parents. *Journal of Applied Sport Psychology, 1*(1), 42-56.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.

Knights, S., & Sherry, E. (2019). The End of a Professional Sports Career: Ensuring a Positive Transition. *Journal of Sport Management, 33*, 518-529.

Knights, S., Sherry, E., & Ruddock-Hudson, M. (2016). Investigating Elite End-of-Athletic-Career Transition: A Systematic Review. *Journal of Applied Sport Psychology, 28*(3), 291-308.

Knights, S., Sherry, E., Ruddock-Hudson, M., & O'Halloran, P. (2019). The End of a Professional Sports Career: Ensuring a Positive Transition. *Journal of Sport Management, 33*(6), 518-529.

Lavallee, D. (2000). Theoretical Perspectives on Career Transitions in Sport. *International Perspectives*, 1-27.

Lavallee, D., Gordon, S., & Robert Grove, J. (1997). Retirement from sport and the loss of athletic identity. *Journal of Personal and Interpersonal Loss, 2*(2), 129-147.

Martin, L. A., Fogarty, G. J., & Albion, M. J. (2014). Changes in Athletic Identity and Life Satisfaction of Elite Athletes as a Function of Retirement Status. *Journal of Applied Sport Psychology, 26*(1), 96–110.

Park, S. (2012). Investigating Athletes' Retirement from Sport : From Decision-Making to Optimal Support Programmes, 282-290.

Park, S., Tod, D., & Lavallee, D. (2012). Exploring the retirement from sport decision-making process based on the transtheoretical model. *Psychology of Sport and Exercise*, *13*(4), 444-453.

Petreson, Robert A. (1994). A meta-analysis of Cronbach's Coefficient Alpha. *Journal of Consumer Research*, *21*(9), 381-391.

Rivera, J. R. D., Jacomossi, R. R., Barrichello, A., & Morano, R. S. (2018). Using structural equation modelling: patterns and trends of publications in Brazilian journals. *Revista de Gestão*, *25*(3), 291-302.

Roberts, C. M., Mullen, R., Evans, L., & Hall, R. (2015). An in-depth appraisal of career termination experiences in professional cricket. *Journal of Sports Sciences*, *33*(9), 935-944.

Shaheen, F., Ahmad, N., Waqas, M., Waheed, A., & Farooq, O. (2017). Structural Equation Modeling (SEM) in Social Sciences & Medical Research: A Guide for Improved Analysis. *International Journal of Academic Research in Business and Social Sciences*, *7*(5), 132-143.

Sinclair, D. A. (1993). Positive Transitions From High-Performance Sport. *The Sport Psychologist*, *7*(1), 138-150.

Taylor, J., & Ogilvie, B. C. (1994a). A conceptual model of adaptation to retirement among athletes. *Journal of Applied Sport Psychology*, *6*(1), 1-20.

Taylor, J., & Ogilvie, B. C. (1994b). A conceptual model of adaptation to

retirement among athletes. *Journal of Applied Sport Psychology*, *6*(1), 1-20.

Torregrosa, M., Boixadós, M., Valiente, L., & Cruz, J. (2004). Elite athletes' image of retirement: The way to relocation in sport. *Psychology of Sport and Exercise*, *5*(1), 35-43.

Webb, W., Nasco, S., Riley, S., & Headrick, B. (1998). Athlete identity and reactions to retirement from sports. *Journal of Sport Behavior, 21*(3), 338-362.

Wendling, E., & Sagas, M. (2020). An Application of the Social Cognitive Career Theory Model of Career Self-Management to College Athletes' Career Planning for Life After Sport. *Frontiers in Psychology, 11*(1), 1-9.

Wylleman, P., Lavallee, D., & Alfermann, D. (1999). Career transitions in competitive sport. *Sport Psychology: Theory, Applications and Issues*, *28*(3),584-610.

Appendix I

Questionnaire

Section 01- Contains questions about athletic factors that national-level athletes have in their sports career,

Section 02- Contains questions about difficulties that athletes face after their career termination,

Section 03- Contains questions related to the career decision self-efficacy scale,

Section 04- Contains questions about demographic factors.

Instructions:

1= Completely Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Completely Agree

Section 01

Scale: Sports Career Termination Questionnaire (SCTQ; Cecic´ Erpicˇ, 2000)							
IV-01	**The Gradualness of the Termination (Gradual Transitional Process)** **Definition:** Examine the decision to end a sports career with the gradual transitional process (Werthner & Orlick, 1986)						
1.	I ended my sports career gradually						
2.	I did not doubt my decision to end my sport career						
3.	I had a planned schedule for my sport termination						
4.	I concentrated on building a career gradually						
IV-02	**Subjective Evaluation of Athletic Achievements** **Definition:** Evaluation of the level of performance from their own perspective when they decided to end their sports career (Knights et al., 2016)						
1.	I was at the peak of my sports career						
2.	I was at the stage where my performance was improving						

3.	I was at the point where I could be satisfied with my sporting achievements					
4.	I have achieved most of my major goals in my sports life					
IV-03	**Organization of Post-Sports Life** **Definition:** Post-sports life planning before making firm retirement decision (Pearson & Petitpas, 1990)					
1.	I was optimistic about my future					
2.	I planned to go to work or have an education after my sport career					
3.	I have been finding a new career or an area of interest					
4.	I have the confidence to rebuild my life after sport					
Scale: Athletic Identity Measurement Scale (AIMS) (Brewer et al., 1993)						
IV-04	**Athletic Identity** **Definition:** The degree to which an individual identifies with the athlete role (Roberts et al., 2015)					
1.	I feel confident about myself when I engage in sports					
2.	I spend more time thinking about my sport than anything else					
3.	I need to participate in sport to feel good about myself					
4.	I had good recognition as an athlete in the society					
5.	I realized sport is the most important part of my life					

Section 02

Scale: Athlete Retirement Questionnaire (ARQ) (Sinclair & Orlick,1993)						
DV-01	**Psychological Difficulties** **Definition:** Influencing or intended to influence the mind or emotions (Baillie & Danish, 1992)					
1.	I feel a sense of underachievement in sports-related goals					
2.	I feel uncertain of future difficulties when planning my future					
3.	I feel incompetent in activities other than sports					
4.	I feel low self-worth after I terminated my sport career					
5.	I feel a lack of self-control					
DV-02	**Social Difficulties**					

	Definition: Social and cultural loneliness, deficiency of social contacts and problems with building new relationships outside of sports (Cecic´ Erpicˇ, 1998; Danish et al., 1993)					
1.	I am missing the lifestyle of an athlete					
2.	I am always missing sports-related social activities					
3.	I am missing friends from the sports environment					
4.	I feel some difficulties in establishing social contacts					
5.	I feel relationship difficulties with people after the end of my sports career					
DV-03	**Occupational Difficulties** **Definition:** Degree of difficulties in professional adjustment (Cecic´ Erpicˇ, 1998)					
1.	I face difficulties as I don't have professional knowledge					
2.	I have problems with finding a job					
3.	I feel difficulties in adjusting to the requirements of the occupation					
4.	I cannot find any sport-related job after the end of my active sports participation					
DV-04	**Physical Difficulties** **Definition:** Loss of lean muscle mass and fitness caused by reduced physical training, altered body composition, and detraining or changes in nutritional practices as a function of occupation (Liu, Lee, Huang, Chien, Cheng, I. S., ... & Kuo, C. H., 2008)					
1.	I did not feel like eating and my appetite was poor					
2.	I don't feel very energetic right now					
3.	I have some trouble when doing exercises					
4.	I have low physical fitness after I stopped active sports					
DV-05	**Financial Difficulties** **Definition:** Degree of difficulties in meeting Financial needs after retirement (Wylleman et al., 1993)					
1.	I have some difficulties in meeting family expenses					
2.	I feel financial stress					
3.	I feel stressed about debt					

4.	I have no other income sources after ending my sports career					

Section 03

Scale: The Career Decision Self-Efficacy Scale (CDSE) (Taylor & Betz,1996)						
MV-01	**Career Decision Self-Efficacy** **Definition:** The belief they have the necessary skills to positively manage the demands of the situation (Bandura, 1977)					
1.	I could choose the right career decision for myself when I am happy and stress-free					
2.	I could take systematic steps to complete my work successfully					
3.	I could think carefully before making any decision myself					
4.	I could make the maximum effort to make a good career decision for myself					
5.	I could easily solve problems even at a difficult time					

Section 04-

Demographic Questions

1. Sex

Male Female

2. Level of Education

Below Ordinary Level (O/L)
Upto Ordinary Level (O/L)
Upto Advanced Level (A/L)
Bachelor's Degree

Master's Degree

Diploma

3. Category of Sport

Individual Sports
(Sport in which participants compete as individuals)
Team Sports
(Sport in which individuals are organized into opposing teams and compete)

4. Name of the Sport

5. Representing Organization/ Association/ Club

6. At what age did you start your main sport specialization?

7. What is the highest level of competition you participated in during your sports career?
    i. National
    ii. International
8. In which year did you finish your Sports Career?
9. How old were you when you finished your sports career?
10. Is your withdrawal from active sport (as an athlete)?
    Permanent
    Temporary
    Unresolved
11. What type of plan did you prepare for your post-sports career?
    Holistic Life Plan (until death)
    Long Life Plan (until your next career retirement)
    Intermediate Life Plan (until the next career stage)
    Short Life Plan (until the next decision)
    Other
12. Reason for your decision to retire from sports?

    Career-related reasons (finding a good professional position, graduation from the University)
    Sport-related reason (decrease or stagnation in sport results, sense of accomplishment, age)
    Relationship-related reasons (relations with a coach, teammates, officials, family members)
    Health-related reasons (physical or mental exhaustion, consequences of injuries, diseases)
    Family-related reasons (desire to start your own family, to have children, family duties)
    Financial reasons (necessity to increase your income)

13. How long was the period (in months) between your sports career termination and your feeling of adjustment to life after sports?
    Less than one month,
    Between one month and three months
    Between four months and six months
    Between seven months and one year
    Between one year and two years
    Two years and more
    I have not yet fully adapted to my new situation after my athletic career termination

Thank you very much for your participation! 

Appendix II

Normality Test

	N		M	SD	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
	Valid	Missing						
AV1	295	0	3.34	1.358	-0.303	0.142	-1.094	0.283
AV2	295	0	3.19	1.569	-0.211	0.142	-1.509	0.283
AV3	295	0	3.03	1.619	0.018	0.142	-1.627	0.283
AV4	295	0	3.82	1.343	-0.901	0.142	-0.401	0.283
GT1	295	0	3.34	1.415	-0.369	0.142	-1.170	0.283
GT2	295	0	3.62	1.314	-0.613	0.142	-0.802	0.283
GT3	295	0	3.07	1.308	-0.007	0.142	-1.122	0.283
GT4	295	0	4.08	1.105	-1.129	0.142	0.613	0.283
AA1	295	0	3.57	1.325	-0.548	0.142	-0.932	0.283
AA2	295	0	3.45	1.357	-0.413	0.142	-1.065	0.283
AA3	295	0	3.72	1.209	-0.867	0.142	-0.097	0.283
AA4	295	0	3.02	1.384	0.039	0.142	-1.307	0.283
AI1	295	0	4.67	0.721	-2.768	0.142	8.563	0.283
AI2	295	0	4.18	0.996	-1.075	0.142	0.313	0.283
AI3	295	0	4.15	1.005	-1.289	0.142	1.289	0.283
AI4	295	0	4.28	0.972	-1.507	0.142	2.052	0.283
AI5	295	0	4.20	0.975	-1.232	0.142	0.933	0.283
PL1	295	0	4.24	1.002	-1.429	0.142	1.708	0.283
PL2	295	0	4.23	0.987	-1.417	0.142	1.802	0.283
PL3	295	0	3.74	1.179	-0.643	0.142	-0.535	0.283
PL4	295	0	4.30	0.930	-1.453	0.142	1.872	0.283
PD1	295	0	2.89	1.206	0.076	0.142	-0.966	0.283
PD2	295	0	3.06	1.267	-0.159	0.142	-1.036	0.283
PD3	295	0	2.34	1.273	0.670	0.142	-0.679	0.283
PD4	295	0	2.67	1.437	0.300	0.142	-1.242	0.283
PD5	295	0	2.94	1.327	0.159	0.142	-1.173	0.283
SD1	295	0	3.44	1.235	-0.310	0.142	-0.854	0.283
SD2	295	0	2.89	1.258	0.202	0.142	-0.976	0.283
SD3	295	0	2.28	1.495	0.758	0.142	-0.942	0.283
SD4	295	0	2.11	1.223	0.966	0.142	-0.118	0.283
SD5	295	0	2.06	1.302	1.030	0.142	-0.156	0.283

OD1	295	0	2.07	1.219	0.846	0.142	-0.436	0.283
OD2	295	0	2.27	1.379	0.775	0.142	-0.655	0.283
OD3	295	0	2.15	1.235	1.017	0.142	0.094	0.283
OD4	295	0	2.70	1.416	0.308	0.142	-1.185	0.283
PYD1	295	0	2.09	1.208	0.958	0.142	-0.014	0.283
PYD2	295	0	2.75	1.359	0.317	0.142	-1.098	0.283
PYD3	295	0	3.07	1.312	-0.102	0.142	-1.225	0.283
PYD4	295	0	3.36	1.306	-0.424	0.142	-0.920	0.283
FD1	295	0	3.10	1.356	-0.103	0.142	-1.221	0.283
FD2	295	0	2.87	1.331	0.134	0.142	-1.208	0.283
FD3	295	0	2.39	1.299	0.541	0.142	-0.842	0.283
FD4	295	0	2.33	1.428	0.677	0.142	-0.961	0.283
Self1	295	0	3.89	1.204	-0.931	0.142	-0.079	0.283
Self2	295	0	4.23	0.947	-1.532	0.142	2.618	0.283
Self3	295	0	4.33	0.855	-1.502	0.142	2.712	0.283
Self4	295	0	4.35	0.913	-1.747	0.142	3.224	0.283
Self5	295	0	4.18	0.953	-1.310	0.142	1.635	0.283

국문초록

운동 요인이 선수의 은퇴 결정과 은퇴 후 질적인 삶에 미치는 영향

디피카

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이 연구는 스포츠 선수들의 은퇴 시점에 대한 선택, 운동 성과의 주관적 평가, 운동 후 생활 계획 및 운동 정체성은 운동 후 생활 적응의 질에 영향을 미치는 요인을 파악하는데 있다. 연구의 목적을 달성하기 위해서 은퇴 한 지 10 년 미만인 295 명의 스리랑카에서 국제 또는 국가 수준의 엘리트 선수들을 대상으로 하였다. 참가자들은 스포츠 후 생활에 대한 적응의 질에 대한 스포츠 경력 과정 전환의 특성에 대한 참가자의 인식을 평가하는 설문지를 사용하였다. 방법론은 구조방정식을 사용하였다. 그 결과 스포츠 경력 종료 프로세스의 품질이 운동 성과와 스포츠 후 생활 계획 및 운동 정체성에 크게 좌우된다는 것을 발견하였다. 또한, 자기 효능감이 은퇴 후 생활 계획과 종료의 점 진성에 대한 매개 요소로서 중요한 역할을 한다는 것을 결과가 나왔다. 이 연구는 스포츠 강제 퇴직의 영향에 대한 독특한 통찰력을 제공한다. 앞으로 이 연구의 결과를 바탕으로 적극적인 스포츠 기간 동안 선수들이 은퇴를 준비하고 지원하는 데 더 많은

주의를 기울여야하며, 스리랑카 정부는 스포츠 생활과 사후 스포츠 생활의 균형을 효과적으로 맞추기 위해 체육 은퇴 정책과 서비스 센터를 구축 할 수 있다.

주요어: 운동요인, 은퇴선수, 은퇴 후 삶, 자기효능감

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