

# Bridging Need-Support Dimensions to Athlete's Intentions to Continue Sports through Enthusiastic and Constrained Commitment: An Empirical Study in China

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## Abstract

The choice of continuing to participate in sports and physical activities for athletes is impacted by many social and economic factors; however, the support that players get is an important indicator of their sport continuing intentions and motivations. The following research study aims to analyze the impact of certain need support factors on the continuing intentions of athletes in China. Moreover, it also aims to examine the mediating role of enthusiastic commitment and the constrained commitment of the athletes. In this case, the researcher collects the requisite information with the help of a survey questionnaire in which a total of 438 participants is selected for the research study as a sample size that has some experience in athletics and were of Chinese ethnicity. The process of data analysis is conducted with the assistance of several techniques and tests like rotated component matrix, KMO and Bartlett's test, confirmatory factor analysis, correlation analysis and structural equation modeling. The results of the research study shows that direct impact of autonomy support and relatedness support is significant and positive on intentions of continuing and the mediation of constrained commitment is full, while that of enthusiastic commitment is partial. The researcher has also included the overall implications and contributions of the study and the limitations of the process so that future scholars and researchers can further build on them in their work.

**Keywords:** Enthusiastic Commitment, Constrained Commitment, Autonomy Support, Relatedness Support, Competence Support, Intentions to Continue, Athletes, China.

## Introduction

China is a country that has been involved in sports for both, participation and spectating. A high percentage of the Chinese population participate in different games like badminton, football and other recreational sports that have been shown in Table 1 below. The number of athletes in China playing at national level, regional level, on the level of colleges and schools as well as on an international level are high. The commitment to sports can be referred to as a psychological state of mind for the athlete for staying resilient to sports over time (Tara K. Scanlan, Chow, Sousa, Scanlan, & Knifsend, 2016). Commitment to sports reflects the motivation and dedication of the athlete that connects and binds them to their choice of game and to participate in it over a continued time span. In the past few years, several researchers and scholars have provided a large amount of implicative research that shows that commitment of the athlete, or an employee in general, has a strong tendency to support the development of psychological constructs that lead to long term persistence (Dehghani, Saf, Vosoughi, Tebbenouri, & Zarnagh, 2018; González, Castillo, & Balaguer, 2019; McCormick, Meijen, & Marcora, 2018; O'Neil & Hodge, 2020; Gavin R. Slempp, Kern, Patrick, & Ryan, 2018). The Sport Commitment Model has been a guiding model for this research body (Tara K. Scanlan et al., 2016). It is a fact that the

employees that perceive that their managers and supervisors are supportive feel inclined to perform better and are more satisfied at their workplace. These employees will also have an increased level of trust, loyalty and commitment to work and show an increased creativity and innovation (Rigby & Ryan, 2018). In addition, the commitment levels are increased, and the levels of loyalty are also seen to increase (Collie, Shapka, Perry, & Martin, 2016).

The commitment dimensions are closely linked to the motivation and the psychological needs defined in the Self-determination Theory i.e., autonomy support, relatedness support and competence support (Gomez-Baya & Lucia-Casademunt, 2018; Keshtidar & Behzadnia, 2017; Orkibi & Ronen, 2017; Vanbelle, Van Den Broeck, & De Witte, 2017; Wang, Liu, Kee, & Chian, 2019).

**Table 1**

*Ratio of Participation by Sports type in China*

Most participated Sports in China	Percentage of Participation
Running/ jogging	14%
Badminton	9%
Football/ Soccer	8%
Cycling	8%
Swimming	8%
Others	47%
Do not participate in any kind of leisurely sports	6%

Source: Statista.com

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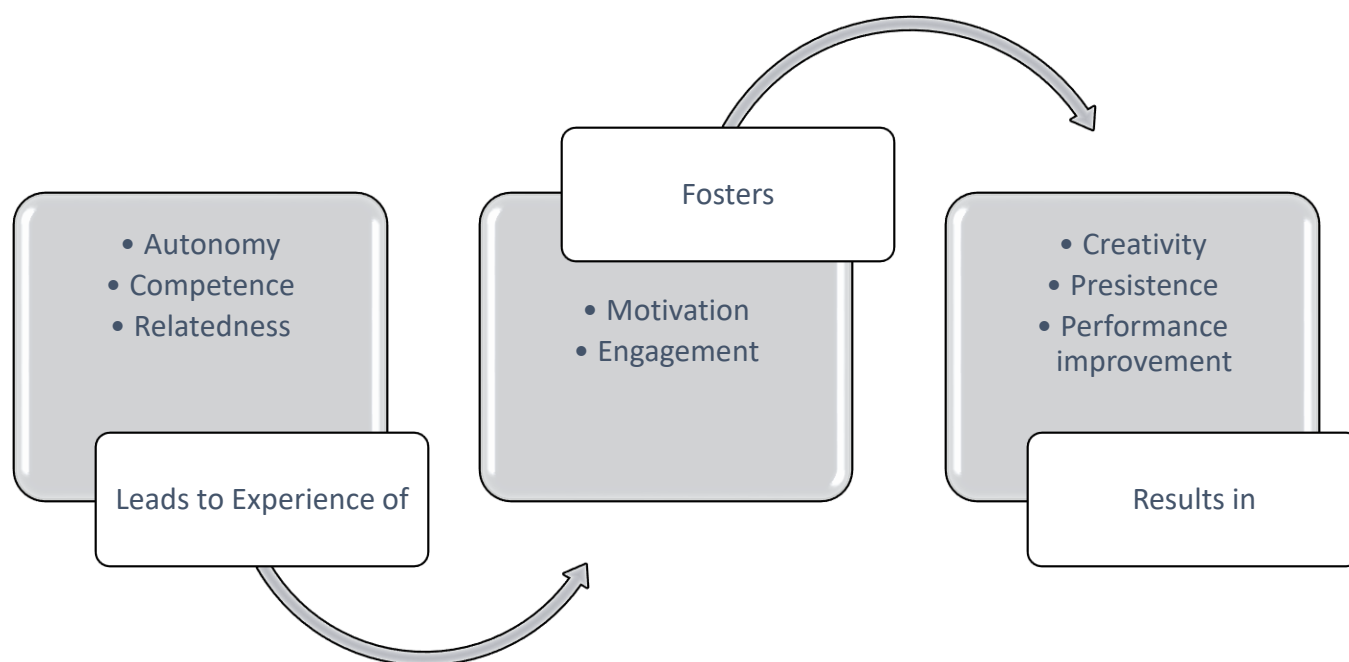


Figure 1: Outcomes of Self-Determination

The objectives of the current study can be highlighted as below:

- To observe the impact that Autonomy support has on the athlete's intention to continue sports in China
- To observe the impact that Competence support has on the athlete's intention to continue sports in China
- To observe the impact that Relatedness support has on the athlete's intention to continue sports in China
- To examine the mediation role of enthusiastic commitment plays between overall need support (autonomy, competence and relatedness) and intention to continue sports in Chinese athletes.
- To examine the mediating role of constrained commitment plays between overall need support (autonomy, competence and relatedness) and intention to continue sports in Chinese athletes.

The scope of this study is to consider how athletes in China show the intentions to continue their sports participation because of the support from their managers in terms of autonomy, relatedness, and competence. Several past studies have explored the issues of work motivation, continuance and dedication (Cheng & O-Yang, 2018; De Muynck et al., 2017; Hagiwara, 2017; Keshtidar & Behzadnia, 2017; McCormick et al., 2018; Gavin R. Slemp et al., 2018; Gavin R Slemp, Kern, & Vella-Brodrick, 2015; Vanbelle et al., 2017) and they have had several benefits in terms of theory, practice, policy building and society. The theories of SCM and SDT have been widely explored in

these studies and the role of these models in increasing workplace satisfaction and motivation has been highlighted. Moreover, these studies can help in designing strategies for the managers, practitioners, and policymakers in terms of increasing the sports participation by athletes and other employees in their workplace environments. The rest of this paper has been structured into four parts which i.e., literature review, methodology, results and analysis, and discussion and conclusion. The literature review portion provides a theoretical framework overview and hypotheses for the research model. The methodology portion provides an overview of the choices regarding data collection and analysis techniques to be used. The results and analysis of the statistical techniques are provided in the next chapter whereas the last portion of the paper, discussion, and conclusion, summarizes the findings and discusses the design limitations, practical implications, and the future directions of this study.

## Literature Review

### Theoretical Background

This research is based on two theoretical frameworks: the Sports Commitment Model (SCM) and the Self-determination Theory (SDT). SDT has been presented as a theory of motivation in humans and has been applied to a number of sub-branches (Deci, Olafsen, & Ryan, 2017) like educational or exercise psychology. It is one of the most used and highly cited motivation theory (Deci & Ryan, 1985; Engström & Elg, 2015) that is comprised of several other mini-theories (Ryan &

Deci, 2017). One of these theories is the “Basic psychological need theory” according to which the well-being of a person can improve through satisfaction of three basic psychological needs i.e. competence, relatedness, and autonomy (Deci et al., 2017). The fulfilment of these needs has positive outcomes such as psychological growth and satisfaction (Collie et al., 2016; Cordeiro, Paixão, Lens, Lacante, & Sheldon, 2016; DeHaan, Hirai, & Ryan, 2016; Martela & Ryan, 2016; Ryan & Deci, 2000), while on the other hand, lower fulfilment trends for basic needs leads to negative consequences like hindrance in the growth of an individual to their potential (Chen et al., 2015).

The Sport Commitment Model can help in understanding the athlete's decision of participating or dropping out of a sports (Tara K Scanlan, Carpenter, Simons, Schmidt, & Keeler, 1993). The sports commitment is a part of this model and it is defined in the form of a psychological construct that can represent the athlete's dedication, resolve and desires regarding continuation of participation (Hall, Newland, Newton, Podlog, & Baucom, 2017; Tara K. Scanlan et al., 2016). The first version of this model defined five determinants of commitment i.e., opportunities given to the athlete to grow and prosper, the level of enjoyment that the athlete experience in participation, the investments in sports, the alternative options that the athlete has, and social constraints. However, in later researches, other determinants and sources of fostering and increasing commitment in athletes have been uncovered (Bandura & Kavussanu, 2018; Gabriele, Gill, & Adams, 2011; Green, 2005; McCormick et al., 2018; Tara K Scanlan, Russell, Beals, & Scanlan, 2003; Williams, 2013). In addition to the initial definition of the sports commitment, later researchers found that desire is not always the driver of commitment but instead, sometimes, obligatory feelings also drive commitment. Therefore, the Constrained Commitment construct is added to the research model that is defined as a psychological construct that represents the obligation perceptions of the athletes that make them persist to a sport in the long term (Tara K. Scanlan et al., 2016).

### **Overall Need-Support Dimensions for the Athletes and Intention to Continue**

In this study, the independent side in the model is covered by the need support dimensions and the dependent variable is the athlete's intentions to continue. The need-support dimensions are the three basic psychological needs of SDT. It is vital to ensure the fulfilment of these psychological needs as their fulfilment can be directly linked to the positive organizational outputs or positive individual characteristics' development and outcomes (Rigby & Ryan, 2018). The satisfaction of the basic needs of an individual results in building trust, belief in the managers' ability to listen and comprehend your needs, belief in the availability and access of increased

opportunities for presenting personal point-of-view, job security feelings, recognition of growth and advancement opportunities and overall satisfaction with life and job. This positive affectivity leads to fostering a stronger urge to continue and an added passion for ones' job or work (Spehar, Forest, & Stenseng, 2016).

### **Autonomy Support and Intention to Continue**

Autonomy can be defined as the basic psychological need in oneself that creates an urge to be free in making one's choices in life and at work (Rigby & Ryan, 2018). It is the sense of having a choice in all the actions that are made by oneself and being responsible for one's decisions. Almost every person wishes to feel an ownership towards their work (Cheng & O-Yang, 2018). Moreover, the people who have autonomy at their workplace and other work related decisions do not face alienation or burnout, but instead feel belonged and work harder and better to achieve the organizational goals (Gavin R. Slemp et al., 2018). The support from managers or supervisors and the overall job design are determinants of how autonomous a person feels in their workplace environment. Vanbelle et al. (2017) discussed that the active work environment has high autonomy and can lead to increasing the employee willingness to continue their work. Keshtidar and Behzadnia (2017) also found a positive impact of autonomous motivations and support on the intentions to continue. In the context of this study, if the athlete reports that he/she has autonomy support, then their intentions to continue sports would be improved. Thus, the following hypothesis is presented by the researcher.

H1: Autonomy support from the managers has a significant impact on intention to continue sports in athletes.

### **Competence Support and Intention to Continue**

Competence can be explained as having mastery in a skill. Competence is also a basic need that helps employees or subordinates feel that they are effective for the organization, and that they have the tendency to become successful and can grow (Wang et al., 2019). When working in an organization, the competence needs are vital as the employees need to feel that they have what it takes to perform their assigned tasks and that they can perform all their daily tasks as they have the needed skills and resources (Gomez-Baya & Lucia-Casademunt, 2018). Keeping the competence needs fulfilled in individual employees allows them to feel motivated at work and increases their work continuance intentions (O'Neil & Hodge, 2020). Studies have mapped a link between competence support and sports continuing intentions in the athletes (O'Neil & Hodge, 2020; Rodrigues, Teixeira, Neiva, Cid, & Monteiro, 2020). This can be explained in that if the athletes perceive that they have skills and mastery in their sports, they would be inclined to continue playing. Thus, it is hypothesized that.

H2: Competence support from the managers has a significant impact on intention to continue sports in athletes.

### **Relatedness Support and Intention to Continue**

Another basic need is relatedness, or a sense of belonging, as it is vital to feel that one belongs with and matters to others (Rigby & Ryan, 2018). Every person has a need to develop meaningful connections with the people around them as it makes them feel supported in the fact that others need them and value them and their support (Wang et al., 2019). On the other hand, feeling isolated, unwanted or irrelevant to the ones around us means the need for relatedness go unfulfilled (Marshik, Ashton, & Algina, 2017). When the relatedness needs are fulfilled in the workplace, the employees tend to feel valued and respected and have a sense of inclusion (Gavin R. Slemp et al., 2018). The relatedness support is also linked to sports continuing in the past studies (O'Neil & Hodge, 2020; Rodrigues et al., 2020). Thus, the researcher proposes that;

H3: Relatedness support from the managers has a significant impact on intention to continue sports in athletes.

### **Mediation of Sports Commitment**

According to Tara K. Scanlan et al. (2016), there are two factors in sports commitment, one is the factor of enthusiastic commitment, which entails the desire or want of the athlete to commit, and the other is constrained commitment, covering factors that put duty or responsibility of commitment on the athlete's shoulders. The current study suggests that the psychological need fulfillment can lead to increasing the level of commitment vis-a-vis both the aspects, and that in turn leads to improved intentions of the athletes to continue. In their study, Ryan and Deci (2017) highlight that the three needs are essential for cultivating and maintain intrinsic motivation. For instance, positive feedback from the managers can lead to increasing enjoyment of the athlete in their sport and fulfil their needs, leading to greater satisfaction and continuance behavior (De Mynck et al., 2017; Karimi & Sotoodeh, 2020).

### **Mediation of Constrained Commitment**

The autonomous support of the managers can be considered as a determinant of constrained commitment as suggested by the current study. In this aspect, it cannot always be expected to make all possible choices at work as there are restrictions like time constraints and work outcomes required but can still allow the workers to feel belonged i.e., a sense of relatedness. However, even when the conditions are constrained like specific tasks and goals, the workers can still have some autonomy that gives them a sense of freedom and independence and can lead to creating

### **Table 2.**

#### *Literature Summary*

<b>Author</b>	<b>Main Contribution</b>	<b>Gap</b>
<b>Cheng and O-Yang</b>	Found organizational support to be an	Does not address psychological need-support

a sense of commitment towards work (O'Neil & Hodge, 2020). This means that even if the work conditions are not fully autonomous, one can still feel a level of volition in one's work and endorse the work as their own, adding value in it both for the individual and for the organization (González et al., 2019). In context of the current study, this can be explained as even if there are certain levels of rules that are communicated to the athletes by their employers or their managers, they can still feel autonomy, relatedness and competence support that leads to an increase in the commitment to sports and increases their intention to continue. Thus, the following hypotheses are formulated.

H4: The constrained commitment plays a significant mediation role between autonomy support and intention to continue sports

H5: The constrained commitment plays a significant mediation role between competence support and intention to continue sports

H6: The constrained commitment plays a significant mediation role between relatedness support and intention to continue sports

### **Mediation of Enthusiastic Commitment**

Enthusiastic commitment has been linked to higher enjoyment in the athletes, lower feelings of being constrained by social norms, high levels of personal investment, and having lower attractive alternatives (Keshtidar & Behzadnia, 2017; O'Neil & Hodge, 2020; Rodrigues et al., 2020). The autonomy can lead to increasing the sense of freedom and enjoyment in work, relatedness can increase the feeling of personal belonging and emotional investments and competence can result in an increase in feelings of accomplishment and success (Orkibi & Ronen, 2017). All these positive affective conditions are predecessors for increasing enthusiastic commitment in the athletes in the long term (O'Neil & Hodge, 2020)-, which has been linked to increase in the intention to continue. Thus, the enthusiastic commitment can act as a mediator in the research model and the following hypotheses are posited by the researcher:

H7: The enthusiastic commitment plays a significant mediating role between autonomy support and intention to continue sports

H8: The enthusiastic commitment plays a significant mediating role between competence support and intention to continue sports

H9: The enthusiastic commitment plays a significant mediating role between relatedness support and intention to continue sports

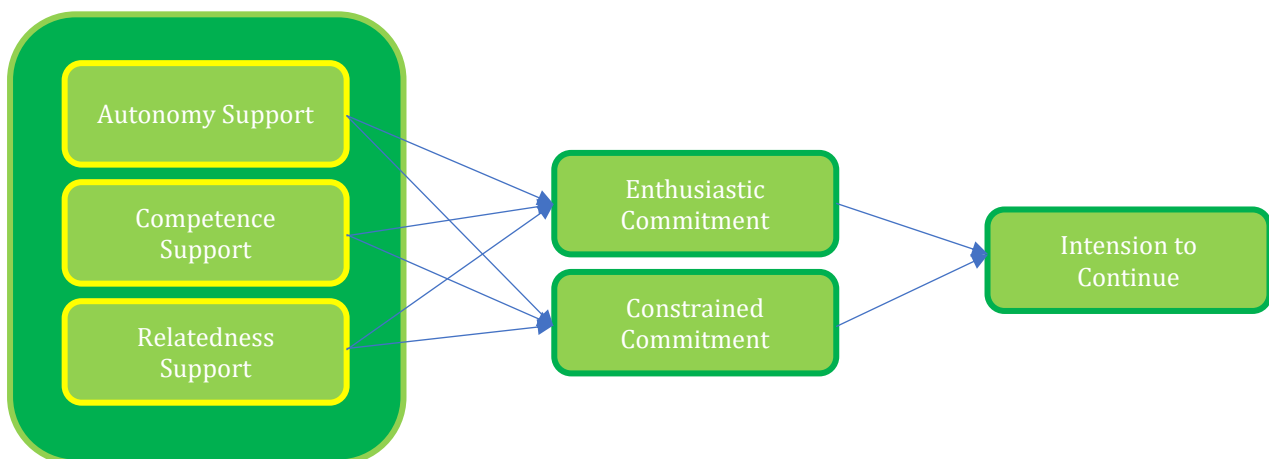
### **Literature Summary and Research Model**

The literature review presented in above sections is summarized to clarify findings in Table 2 below:

Author	Main Contribution	Gap
(2018)	important factor in increasing commitment to dimensions work	
De Muynck et al. (2017)	The researcher succeeds in linking autonomy support to increased enjoyment and perseverance in the players	Focus is on SDT only and the SCM is not discussed
Gomez-Baya and Lucia-Casademunt (2018)	The research establishes SDT as a valid approach for promoting job satisfaction and psychological well-being	Commitment is not explored
González et al. (2019)	Results show resilience of the athletes to lead to creating a sense of fulfillment and enjoyment	There is a need to explore the inverse relationship
Karimi and Sotoodeh (2020)	Psychological needs' fulfilment is indicative of increased motivation	There is a need to explore impact of need fulfilment on resilience or continued intention
Keshtidar and Behzadnia (2017)	Impact of autonomy support on intentions to continue is established	Lack of exploring the dimensions of sports commitment and other need-support dimensions
Marshik et al. (2017)	Autonomy in teachers can improve autonomy in students	Sports perspective not explored in this study.
O'Neil and Hodge (2020)	The research establishes positive impact of autonomy on commitment dimensions and their positive impact on continuing intentions in athletes	The researcher does not explore competence and relatedness support. The current model is based closely on this paper
Rigby and Ryan (2018)	Discusses and reviews SDT application to HR	This is a review only and it does not cover SCM
Rodrigues et al. (2020)	Enjoyment is found to be a strong indicator of exercise persistence	Need to explore motivation and commitment to sports
Tara K. Scanlan et al. (2016)	Introduced the dimensions of commitment	Lacks discussion about SDT
Gavin R. Slemp et al. (2018)	The autonomy support is found as a suitable leadership approach	Lack of discussion of other dimensions of need-support and commitment
Vanbelle et al. (2017)	High autonomy leads to high intention to continue	Lack of discussion of other dimensions of need-support and commitment
Wang et al. (2019)	Need-support discussed in academic settings	Lack of sports orientation in discussion

The above conducted literature review highlights the gaps in existing literature vis-à-vis psychological support needs in relation to sports commitment

have led to the proposal of the following research model.



dimensions and their impact on intentions of athlete to continue. These gaps and above-mentioned hypotheses

Figure 2: Research Framework

## Methodology

In this section, the methodological details of the research process are discussed. The researcher conducts this study using the positivism philosophy of research, by appointing an exploratory research paradigm and a quantitative research design. Other

details are discussed as followed.

### Population and Sampling Technique

A population is a collection or a group of people that can be defined as having common and observable characteristics. The researchers select a population that can serve their research purposes. The targeted population in this study is the Chinese people who have

some athletic experience. As for a sample, it is the subset of total population that can represent the opinion of the overall population. In this study, sample is decided without a sampling frame i.e., as there is no sampling frame found that could fit the researcher's needs, the non-probability sampling technique is used to approach samples. The convenience and snowball sampling techniques have been employed in this quantitative research. In convenience sampling, data is collected by the researcher through samples who are easily accessible (Etikan, 2016) and in snowball sampling technique, initially sample recruits are selected by researchers than later samples are based on referrals (Naderifar, Goli, & Ghaljaie, 2017).

## Data Collection Approaches

### Time Horizon

There are two kinds of research designs in terms of time horizons; cross-sectional or longitudinal researches. In this study a single step data collection is required due to which a cross-sectional approach has been utilized.

### Data Collection:

In this study, the data collection instrument used is a closed ended-structured survey-based questionnaire. Initially, the researcher develops the first draft of the questionnaire and put it up for pilot testing. The questionnaire is made up of two portions; first is the demographic portion to collect the demographic profile and to filter out the suitable respondents and the second pertains to variable-wise questioning. Pilot testing of survey questionnaire has been conducted with 25 respondents including 15 general respondents, 5 academic experts, 2 language experts and 3 athletic field experts. For making the questionnaire more effective, the pilot test results are conducted to give some suggestions regarding the rephrasing of a few questions and adding some items. The questionnaire is distributed to the targeted sample only after accounting for these adjustments.

The researcher then selects 10 known athletes that had been emerging in various sports at a national level in China for the past 5 years through their managers and 7 of them agree to participate in this study. Each of them agrees to distribute the questioners to further links, and in doing so, a total of 700 questionnaires have been roughly distributed through online means like Facebook messenger and WeChat. At the end of one month time, the researcher has been able to collect 378 questionnaires and send reminder IMs to non-respondents. After a waiting period of further 2 weeks, the researcher has a sample collection of a total of 455 questionnaires out of which 438 are included in the final sample while the rest are discarded on the account of missing or inappropriately filled questionnaires.

### Measurement Scales

The researcher uses a questionnaire-based research

instrument to collect responses on statements regarding research variables on a 5-type Likert scale comprising of the following options: "1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree". All these scales are written in English. The questionnaire has two parts i.e., demographic data collection portion and the main part that collects data for the variables included in the study. A total of 25 items are included in the variable data collection portion and the details regarding their collection are given below.

### Autonomy Support, Relatedness Support and Competence Support

Autonomy support, competence support and relatedness support are the three independent variables explored in this study. The items for the measurement of these variables are adopted from the research work by O'Neil and Hodge (2020) and by Fernet, Austin, Trépanier, and Dussault (2013). Moreover, autonomy support is measured using 3 items, competence support was measured using 4 items and relatedness support was also measured using 4 items.

### Constrained Commitment and Enthusiastic Commitment

Enthusiastic and constrained commitment are the mediating variables in this study. A 5-item scale is used to measure the enthusiastic commitment mediation role and a 6-item scale has been adopted to measure the role played by constrained commitment. These scales have been adopted from the study by O'Neil and Hodge (2020) and they have been adjusted and reworded according to the needs of the current study.

### Intention to Continue

Intention to Continue is the dependent variable in this study and has been adopted from the study by O'Neil and Hodge (2020). Three items are included in the final questionnaire that have been used to measure the intention to continue sports by the athletes in this study.

### Statistical Analysis

In this study, the data collected from quantitative approach is analyzed on SPSS. The main analysis is the Structural equation modeling (SEM) for the purpose of analyzing mediating and direct relationships in between the research variables and for testing the validity of the proposed hypotheses. Multiple tests have been performed as preliminary steps such as demographic data profiling, descriptive statistics, and normality tests to define the characteristics of the data set, Cronbach's alpha, KMO and Bartlett's test and factor analysis to test sample reliability and adequacy and fit statistics to ensure model fitness. Moreover, the researcher has adopted several precautions to mitigate common method variance issues in the dataset. For the removal of any social desirability bias in their responses, the respondents are assured that the

obtained responses will remain confidential, and the cover letter of the questionnaire reinforced that their anonymity will be maintained at all steps of the study. Harman's factor analysis has been carried out for each individual variable in the study to evaluate the CMV bias. In this test, un-rotated factor analysis tests are conducted that show whether the factors individually occupy most of the variance and the individual variance of all the factors needs to be below 50% threshold for CMV to be absent. The Pearson's correlation analysis has also been carried out.

## Results and Analysis

In this chapter, the researcher presents the results in tabular form for various tests applied in this study as well as their interpretations of these findings.

### Demographic Profile

The demographics are characteristics of a population that define or describe it and are vital for determining that the participants are adequate for representing the entire targeted population. Data has been collected against three variables in this study, these include gender, age, and athletic experience.

- **Gender**

Out of the total 438 respondents, 242 are males and 196 are females i.e. 55.3% are men and 44.7% of the sample is comprised of women. While the disparity is low, it still shows that there are more men involved in athletics in China.

- **Age**

The age variable has been divided into 4 groups. The first group is made up of all respondents under 25, last one comprises of those above 45 while the middle two have ten year intervals (i.e. 25-35 and 35-45). 136 respondents fall in the first range (31.1%), 190 fall in the second range (43.4%), 96 in the third range (21.9%) and the last interval has 16 respondents (3.7%).

- **Experience**

The variable of experience is also divided in 4 groups; below 2 years of experience, 2-5 years, 5-8 years and above 8 years' experience. 71 out of 438 i.e. 16.2% of the respondents have below 2 years'

experience, 189 out of 438 i.e. 43.2% have experience between 2 to 5 years, 138 out of 438 i.e. 31.5% have experience between 5 to 8 years and 40 of 438 i.e. 9.1% have above 8 years of experience.

### Descriptive statistics and Sample Tests

The dataset used in a research needs to be accurate, normally distributed, and reliable. The first test applied to the dataset by the researcher is the Cronbach's alpha test. As a rule, this statistic should have a value equal or greater than 0.7 to show internal consistency in the scale items. Table 3 confirms this criterion is met by all variables showing presence of internal consistency. Moreover, the minimum and maximum are 1 and 5 respectively showing absence of any value outside the chosen scale i.e., 5-type Likert scale. Average of mean values is around 3.2 and the standard deviation varies from 0.98601 to 1.32611. The skewness statistics needs to be within the bounds of +1 and -1 to confirm a normal data distribution, which has been clearly shown in Table 3. Thus, the data is found to be normally distributed.

**Table 3.**

*Descriptive, Reliability and Normality*

	$\alpha$	Min	Max	Mean	SD	Skewness
AS	.924	1.00	5.00	3.1925	1.20880	-.251
CS	.914	1.00	5.00	3.1884	1.05426	-.163
RS	.876	1.00	5.00	3.2631	.98601	-.313
CC	.967	1.00	5.00	3.5114	1.16762	-.533
EC	.902	1.00	5.00	2.9219	1.32611	.402
ITC	.937	1.00	5.00	3.3486	1.15129	-.436

Moreover, KMO and Bartlett's test is used to test sample adequacy. The value for KMO statistics is 0.924, which is close enough to 1 to have significance and the significance value of Bartlett's test is also accurate enough to reject the null hypothesis. Thus, results in Table 4 show that the sample is adequate, and variables are unrelated meaning that the data can be used for factor analysis.

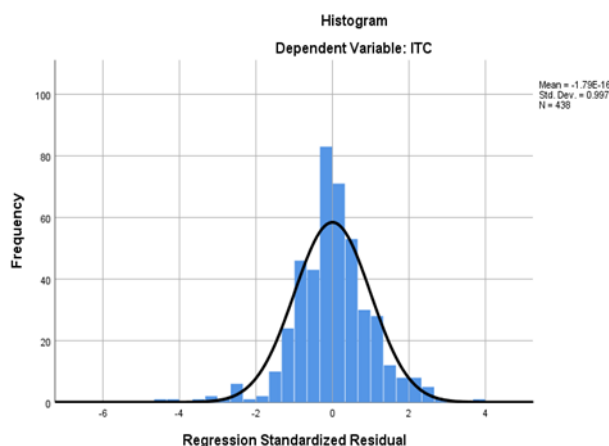


Figure 3: Regression Standardized Residual Histogram

The inspection of the regression standardized residual histogram has been given in Figure 2 that shows that the data is normally distributed. Moreover, the P-P plot is also presented for the regression standardized residuals in Figure 3 that has shown that the data is

normally distributed and there is very little variation in the observed and expected values as they are shown to be along the line, without any significant differences from it.

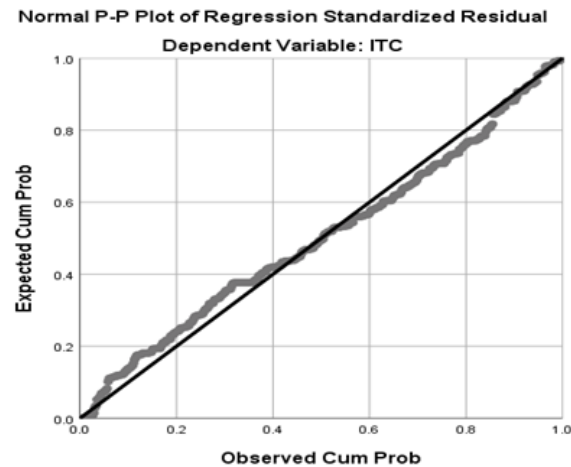


Figure 4: Normal p-p plot of Regression Residual Histogram

Table 4.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.924
Bartlett's Test of Sphericity	Approx. Chi-Square	10221.839
	Df	300
	Sig.	.000

The researcher has used the rotated component matrix for factor analysis to check the contribution of each individual item in the overall scale. The results in Table 5 show that the loading of each factor is greater than 0.6, thus all scale items contribute in the variance of the overall construct. The matrix has also been checked for cross-loading and there is no cross-loading observed. This shows that the data is reliable.

Table 5.

Rotated Component Matrix

	Component					
	1	2	3	4	5	6
AS1					.836	
AS2					.859	
AS3					.846	
CS1			.803			
CS2			.877			
CS3			.842			
CS4			.789			
RS1				.739		
RS2				.760		
RS3				.811		
RS4				.826		
CC1	.844					
CC2	.860					
CC3	.832					
CC4	.884					
CC5	.911					
CC6	.898					
EC1		.861				

EC2	.812
EC3	.814
EC4	.802
EC5	.846
ITC1	.788
ITC2	.790
ITC3	.821

To further check for inaccuracies, common method variance is tested using the Harman's single factor test. The results for this test are presented in Table 6 which shows the individual factor variance and total variance using sums of squared loadings. For CMV to be in control, the total variance needs to be below 50%. As per the results, the total variance extracted in this study is 40.644%, meaning that there is no issue of CMV in the data.

Table 6.

Total Variance Explained

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings		
	Total	% of Variance	Total	% of Variance	Cumulative %
1	10.161	40.644	10.161	40.644	40.644
2	3.042	12.167			
3	2.494	9.975			
4	2.313	9.253			



5	1.460	5.840	77.879
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### Correlation and Hypothesis Tests

To perform a correlation analysis, the researcher uses the Pearson Correlation statistics that is used to find the underlying correlation existing between the study variables in this research. The results in Table 7 show that all of the correlations are significant at  $p < 0.01$ . Autonomy support has a positive correlation with constrained commitment (0.45), intention to continue (0.676), competence support (0.316) and relatedness support (0.281); however, the correlation with enthusiastic commitment is negative (-0.22). Competence support has a positive correlation with three variables i.e. it has a coefficient of 0.439 with constrained commitment, 0.389 with intention to continue and 0.529 with relatedness support; however, the correlation with enthusiastic commitment is negative (-0.267). Similarly, relatedness support has a negative correlation with enthusiastic commitment (-0.330) and positive with constrained commitment (0.431) and intention to continue (0.424). Constrained commitment has a negative correlation with enthusiastic commitment having correlation value of -0.31 and positive with intention to use having a coefficient of 0.487. Finally, the correlation of enthusiastic commitment and intention to use is also negative with a correlation value of -0.235.

**Table 7**

#### Correlation Testing

	AS	CS	RS	CC	EC	ITC
AS	1					
CS	.316**	1				
RS	.281**	.529**	1			
CC	.450**	.439**	.431**	1		
EC	-.220**	-.267**	-.330**	-.310**	1	
ITC	.676**	.389**	.424**	.487**	-.235**	1

The hypothesis testing results are given in Table 8 below. The results show that the direct impact of autonomy support and relatedness support on intention to continue is significant and positive in impact while that of competence support is insignificant. Moreover, the value for impact of autonomy support is 0.588 and that of relatedness support on intention to continue is 0.210.

**Table 8.**

#### Hypothesis Testing

Hypothetical Path	B	T	P-Value	VIF
AS→ITC	.588	16.662	.000	1.134
CS→ITC	.091	2.287	.023	1.450
RS→ITC	.210	5.325	.000	1.418
R Square	.519	-	-	-
F Stat	158.418	-	-	-
P value	.000	-	-	-

The mediating paths hypotheses results are shown in

Table 9 below. The results show that the constrained commitment has full while enthusiastic commitment has partial mediation. The mediation of constrained commitment increases the impact of autonomy support on intention to continue by 0.098, between competence support and intention to continue by 0.188 and that between relatedness support and intention to continue by 0.188. On the other hand, the mediation of enthusiastic commitment between the relations of autonomy support and intention to continue and between relatedness support and intention to continue are insignificant whereas that between competence commitment and intention to continue is positive and significant with a coefficient of 0.041.

**Table 9**

#### Mediating Effect

Hypothetical Path	B	T	P-Value
AS→CC→ITC	.098	5.212	.000
CS→CC→ITC	.188	6.571	.000
RS→CC→ITC	.188	6.392	.000
AS→EC→ITC	.019	2.191	.022
CS→EC→ITC	.041	2.717	.006
RS→EC→ITC	.021	2.210	.027

## Discussion and Conclusion

### Discussion

The objective of this study is to explore the impact of Need-support dimensions (autonomy, competence, and relatedness support needs) on the athletes' choice or intentions to continue sports. Moreover, the sports commitment dimensions (enthusiastic and constrained commitment) are studied as mediators in this study. Nine hypotheses have been formulated for fulfilling the research objectives. The first three hypotheses are designed to predict the direct impacts of the overall need-support dimensions on the intention to continue. The first hypothesis (autonomy support and intention to continue) is accepted. The results show that an increase of 1 unit in autonomy support will increase the intention to continue by 58.8%. Vanbelle et al. (2017) support these findings as they indicate that a high level of autonomy can increase the intentions to continue work. Other studies also support these findings (O'Neil & Hodge, 2020; Gavin R. Slemph et al., 2018). The second hypothesis (competence support and intention to continue) is rejected by the SEM testing. The results are not significant at a significance level of 0.01. This result is, however, contradictory to several other studies (Gomez-Baya & Lucia-Casademunt, 2018; O'Neil & Hodge, 2020; Orkibi & Ronen, 2017). The third hypothesis (relatedness support and intention to continue) has been accepted as the results show that an increase of 1 unit in relatedness support will increase the intention to continue by 21%. Several studies have supported that relatedness can lead to increasing the feelings of continuing work such as work dedication

and motivation etc. (Butz & Stupnisky, 2017; Hiltz, Part, & Bernacki, 2018). The next three hypotheses are presented to show the mediation of constrained commitment. The mediation of constrained commitment is found to be full i.e., the hypotheses 4, 5 and 6 are accepted by the SEM indirect relationship testing. If one unit of constrained commitment is increased, the mediation improves the indirect effects of autonomy support by 9.8%, competence support by 18.8% and relatedness support also by 18.8%. Moreover, the next three hypotheses are presented to show the mediation of enthusiastic commitment. The mediation of enthusiastic commitment is partial as the mediation for autonomy and relatedness is insignificant and that for competence support is significant. Thus, hypotheses 7 and 9 are rejected and 8 is accepted by SEM indirect path testing. By increase of one unit in the enthusiastic commitment, the mediation improves the indirect impact of competence support on intention to continue by 4.1%. However, past papers have shown support for both the enthusiastic commitment and constrained commitment in contradiction to the current study (O'Neil & Hodge, 2020). Some studies have shown cultural variation in that the results of impact of these commitments are culturally variant (Hagiwara, 2017).

## Conclusion

The current study has been conducted in the context of China to test the impact that sports commitment model and psychological needs of the self-determination theory can play on the intentions to continue sports by the athletes. The study is designed using a positivist philosophy in the form of a quantitative research design. The findings of the study show that:

- Autonomous support from the managers can help the athletes feel freedom in choice and decision making and leads to creation of intentions of continuing sports among Chinese athletes. Moreover, the relatedness support is also important in this respect. However, the competency support is not shown to have an evident impact on the intentions to continue,
- The constrained commitment as shown to be highly impactful for mediating the impact of psychological needs on the athletes' intentions to continue. Whereas the enthusiastic commitment only increases the impact of competence commitment. This can be explained in the light of the fact that enjoyment can be increased when the athlete has a belief in their competencies.

## Implications

A valuable research study needs to make contributions to the existing body of knowledge on a given subject and have certain implications for future research works. The current study contains multiple contributions in terms of theory. First, the researcher

has discussed the theory of self-determination in the context of this study. Secondly, the sports commitment model has also been discussed as it is also the basis of the theoretical framework used in this current study. Thirdly, the researcher has presented an overview of findings and gaps identified in a table of the reviewed literature. All these contributions lead to increasing the literature content available for the self-determination theory and the sports commitment model which will be helpful for academic scholars to improve their understanding of these concepts. Moreover, peer researchers will find the literature summary helpful while conducting research on any similar topic. The study also has numerous practical contributions. The findings of the study have practice-enhancing implications for the athletes' coaches and managers as they are guided about the psychological needs of their athletes. These findings will prove helpful for modification of the existing coaching styles prevalent in sports industry in China and similar cultural regions. Moreover, the dynamics of the coach-athlete relationship will also be changed because of the findings. The study also has policy implications for sports organizations as they may be encouraged to change the policies and organizational environment to increase the support available for athletes to increase their commitment levels towards their sports.

## Future Research Recommendations

There are limitations in research works conducted by even the most accurate methods and by the most qualified researchers. These limitations serve as sources of possible future directions to further the research work on the topic under study. The first limitation that can be identified in this study is the fact that it is based on an online survey technique which lacks the rawness or personalized touch that the self-administered or a DOPU based survey has. These kinds of data collection techniques allow the researchers and the respondents to come in direct contact and increase the rate of response. Future researchers should opt this technique as soon as the threats from Covid-19 are reduced. Another limitation is that the time for this study is constrained, and the researcher has opted for a cross-sectional time frame; for this reason, the author advice future researchers to conduct longitudinal research with a similar research model to see how the intention to continue for athletes is impacted by various factors over a longitudinal time frame. Moreover, in geographical terms, the research scope is limited to China and is only based on data collected from athletic individuals. The future researchers can work in two dimensions from this point onward; one is that they can gather data from countries other than China and the second is that they can test the model on other professions or for other kinds of behavioral testing. Moreover, future researchers should add mediating and moderating variables other than the ones that have already been used in this paper.

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