


Article

Sports Academy as an Avenue for Psychosocial Development and Satisfaction of Youth Athletes in Ethiopia

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Abstract: This study aimed to explore a social-contextual view of talent development in sports by which the demographic and contextual factors of engagement, psychosocial development, and satisfaction, and the extent of their relationships, may be investigated concurrently. The sample ($n = 257$, $n_{\text{female}} = 122$, and $n_{\text{male}} = 135$) consists of youth athletes (mean age = 17.87 and standard deviation = 1.10), and cross-sectional survey data from two randomly selected sports academies in Ethiopia. Analyses involve group comparisons to identify differences and multiple regressions to examine predictions. Group comparison results show that enrollment in a sports academy accounted for a significant difference in youth athletes' measured engagement. Moreover, results of regression analyses indicate that higher psychosocial development and more satisfaction of youth athletes were associated with higher engagement and some demographic and contextual factors. Results also show that higher engagement of youth athletes was associated with some demographic and contextual factors. The group comparison results support the self-determination theory, providing evidence regarding the importance of social-contextual conditions in determining the engagement of youth athletes. The results of multiple regression analyses validate engagement theory and substantiate the results of previous studies on talent development. Specifically, it may be inferred that youth athletes' engagement is not only one of the results of participation in sports but also one of the processes contributing to higher levels of reported psychosocial development and satisfaction. The implications of these results for theory and practice are discussed.

Keywords: Ethiopia; youth development; sport academy; youth athlete; engagement in sports

1. Introduction

1.1. Background

Youth development refers to an individual's capacity to understand and engage with his/her environment [1]. Positive youth development (PYD) is an approach to working with youth that emphasizes productively building on youths' strengths to promote positive outcomes through providing them with opportunities, fostering positive relationships, and furnishing the support they need [2]. Hence, PYD constitutes not only positive experiences and relationships but also positive environments to capture the full potential of all young people to learn and thrive [3].

The participation of young people in organized sports significantly contributes not only to physical development; but to their intellectual, psychological, emotional, and social development as well [4]. This belief inspires the proliferation of sport-based youth development interventions that strive to use sport as a mechanism to create opportunities to achieve physical health, psycho-social development, and motor skills acquisition [5,6]. In a broader perspective, sport-based youth development interventions provide avenues through which sport meaningfully integrates into the public health agenda [7,8], for example, the sustainable development goals [9].

Far beyond the acquisition of sports specific skills, the participation of youth in sports has the potential to accomplish other important benefits, including psychosocial development and satisfaction [10]. The concept of psychosocial development refers to one's psychological development and interaction with a social environment, comprising of both psychological and social outcomes [11]. Important components of psychosocial development include an increase or change of internal and interpersonal psychosocial skills [12]. The internal psychosocial skills are implicit skills that involve motivation, self-awareness, and the ability to work hard, managing performance and process outcomes. Interpersonal skills are explicit skills that involve the ability to utilize team skills and general social skills.

Athlete satisfaction denotes a positive, affective state, resulting from a complex evaluation of the structures, processes, and outcomes associated with the athlete's overall experience over time [13]. It is considered as a critical component of affective success and productivity [14]. Research has indicated that student athletes' academic satisfaction is predictive of their athletic satisfaction, justifying their intimate relationship [15].

One important consideration in creating optimal context for PYD is engagement. Engagement is defined as an energetic state of involvement with personally fulfilling activities that enhances one's sense of efficacy [16]. It reflects a relatively enduring experience that is represented through positive emotions and cognitions in an activity [17], and requires persistence and concerted effort over time [18]. Research shows that engagement constitutes a frame of reference for promoting positive experiences in sport [19]. Youth engagement in sports has been identified as the most influential factor that determines learning and personal development in both in- and out-of-school contexts [20–22].

The concept of athlete engagement as it relates to youth sport is multidimensional, including cognition, feelings, and behaviors. Conceptually, the coach–athlete relationship is defined as a situation in which a coach and an athlete's cognitions, feelings, and behaviors are mutually and causally interrelated [23]. Active participation and teamwork refer to the involvement of youth athletes in organized sports that are intentional and deliberately focused on building capacity [24]. For example, active participation and teamwork can provide opportunities for youth athletes to learn important life skills such as cooperation, discipline, leadership, and self-control, among others. Attendance rate is about the proportion of time youth athletes participate in the regular sessions for a given level of sports education during the reference year [25]. Personal training refers to a voluntary, personalized, informal program through which a youth athlete gets further involved in sports training or practice, with the main intent being to optimize performance [26]. Hence, youth athletes spend additional time developing, for example, their technical and tactical skills [27].

Contextual factors denote characteristics unique to a group, community, society, and individual. Research in sports science shows that more varied psychological and social circumstances play an important role in talent development [28]. This is so because young talented athletes are entrenched in an environment that promotes and fosters their athletic talents [29].

Sports academies are the right place to create an optimal context for PYD [30]. They do so through designing and structuring developmental pathways through which youth athletes develop their talents, leading them to achieve high-level performance in sports [31] and a rounded personality [32]. Building on this last point, it must be emphasized that talent development is about the provision of the most conducive environments for athletes to accelerate their learning and performance [33]. Sports academies are prepared to provide such environments for youth athletes to promote self-discovery

and teach participants life skills, intentionally and systematically. This may involve, among others, systematic instruction, counseling, support, and high-quality training and practice [34].

1.2. Theoretical and Practical Rationale

In the sports sector, one of the key concerns of sport scientists, coaches, and policy makers is identifying talent in athletes and developing that ability to its fullest potential [34]. Identification and development of sport talent is a growing field of research and practice. Over the past century, discussions of talent have generally been embedded within the broader nature versus nurture controversy. Consequently, research on talent identification and development tended to be unidirectional, typically adopting genocentric or environmentalist positions [35]. Scholars criticized such positions since these override the processes involved in talent development. Following the advent of the Differentiated Model of Giftedness and Talent (DMGT), these positions have changed over the years. To advance understanding of talent development, a shift towards a multidisciplinary focus is necessary, along with a comprehensive, multidisciplinary, theoretical rationale.

Promoting the engagement of youth athletes, particularly those in sports academies, has become increasingly important as today's youth athletes are tomorrow's world class athletes in competitive sports [36]. However, youth athletes' engagement in purposeful developmental activities has been declining across many schools and sporting academies [37], particularly in the African contexts [38]. Unless this trend is dramatically reversed, a greater number of youth athletes will ultimately end their education without attaining the required competencies and without gaining the necessary skills to develop self-sufficiency and professional autonomy. This issue is particularly important as the public becomes increasingly skeptical about the quality of education for young athletes in sports academies and distrustful about the role of sports in youth development [37].

Distinct strands of evidence indicate that predictions of sports participation or development may be more accurate if they are based on institutional contexts and the assessment of a variety of individual characteristics [39,40]. In relation to this, there is insufficient evidence about the demographic and social-contextual factors associated with youth athletes' engagement in sports academies [41,42], and the corresponding psychosocial development and satisfaction [43].

Conceptually, empirical research analyzing the determinants of learning and development in sports rarely considers institutional conditions, instructional processes, and support systems as an influential factor. From the methodological perspective, research focusing on the outcomes of participation in sports academies seldom includes multivariate educational, demographic, and contextual analyses. Despite its role as a key factor for learning and development, there is still a lack of empirical evidence about the effects of student engagement on psychosocial development and satisfaction among youth athletes in sports academies. This study primarily addresses these shortcomings.

1.3. Sports Academies for Promoting Learning and Development

Given the focus on sport as a means to achieve wider social and educational outcomes for young people, sport is frequently regarded as an effective mechanism for promoting PYD. Such thinking clearly underpins the view that the sport education environment is a salient context for developing the five indicators of PYD that include competence, confidence, connection, character, and caring [35].

More importantly, research shows that sports academies raise not only the standards of players but also their belonging, interest, social competence, and well-being [44,45]. Thus, sports academies provide opportunities for youth athletes to develop sports career pathways to national and international standards, at the same time providing opportunities to develop motivation, cooperation, communications, and social relationships [46].

1.4. The Developmental Pathways of Ethiopian Youth Athletes

The youth sports academy system is the highest-ranking development scheme in Ethiopia. Academies are special preparation systems set up and funded by the government and professional

clubs [47]. At the age of 15 to 17, promising youth athletes are selected to pursue their sports specialization at an elite level, while also attending to their education in school. Upon completion of the program, youth athletes are either signed on to a professional contract or released [48].

In a broad sense, the Ethiopian youth sports academies and the sports education programs therein represent sport-based youth development that characterizes a meaningful integration of sport into the public health issues [5]. This integration inspires the strategy of using sports to create among young people the attributes needed to achieve personal success [7]. The structured program in sports academies is arguably the most pivotal stage in an athlete's journey to the professional level as it provides a limited opportunity to accomplish his/her goal of becoming a professional [49].

Sports academies in Ethiopia have a developmental focus on the characteristics required to become successful athletes such as fundamental mental skills (e.g., concentration, attitudes, emotions, motivations), life skills (e.g., the ability to plan, monitor, self-evaluate), and physical skills (e.g., physical fitness and strength) [50]. Consequently, youth-athlete participants had the opportunity to learn throughout the program, and this facilitates PYD by fostering learning and psychosocial development at the same time [51].

Seen from the equity perspective, the Ethiopian sports academies operate in an equitable environment where boys and girls have equal opportunity to be involved and succeed. In this sense, sports academies help to produce young male and female athletes of a high standard required to participate at an elite or professional level locally and beyond. In sum, as a result of their participation in sports academies, youth athletes develop into more responsible, healthy, and active members of the society, and this has a profound influence.

1.5. Conceptual Model of the Study

1.5.1. Talent Development Theory and Engagement Theory

This study is guided by two theoretical perspectives: The talent development theory called the DMGT [52] and the engagement theory [17]. Both provide strong theoretical foundations that underscore the role of sports participation in promoting youth development [53].

The DMGT states that outstanding natural abilities are progressively transformed into outstanding, systematically developed skills and knowledge [52]. This implies that talent development is a dynamic process. This transformative process constitutes the heart of the DMGT, and it reveals itself when the person engages in systematic learning and practice [54,55]. Three types of conditions facilitate or hinder this transformative process: (a) Intrapersonal conditions, such as personal traits and self-management processes; (b) environmental conditions, such as socio-demographic factors, psychological influences (e.g., from parents, teachers, or peers), or special talent development facilities and programs; and (c) chance, for example, the "chance" of being born in a particular family or place; the "chance" of the young person being enrolled in a particular sport [56,57].

According to engagement theory, the concept of engagement comprises several domains, including athletes' active participation, and emotional commitment to their learning and development. This theory postulates that athletes' positive perceptions of team cohesion and coach rapport are positively associated with adaptive developmental experiences in sport [53]. Theory and research on youth athletes' participation in sports from talent development theory and engagement theory perspectives have had significant impacts on developing a greater understanding of the role of participation in organized sports for promoting youth athletes' positive behavior and development [49,58].

1.5.2. Components of the Conceptual Model

This study primarily explores how youth athletes' engagement in sports academies and demographic and social-contextual factors have predicted psychosocial development and satisfaction. The conceptual model of this study consisted of five demographic and social-contextual factors, along

with four engagement measures, and three developmental outcomes. Figure 1 presents the variables included and the directional relationships found between the variables.

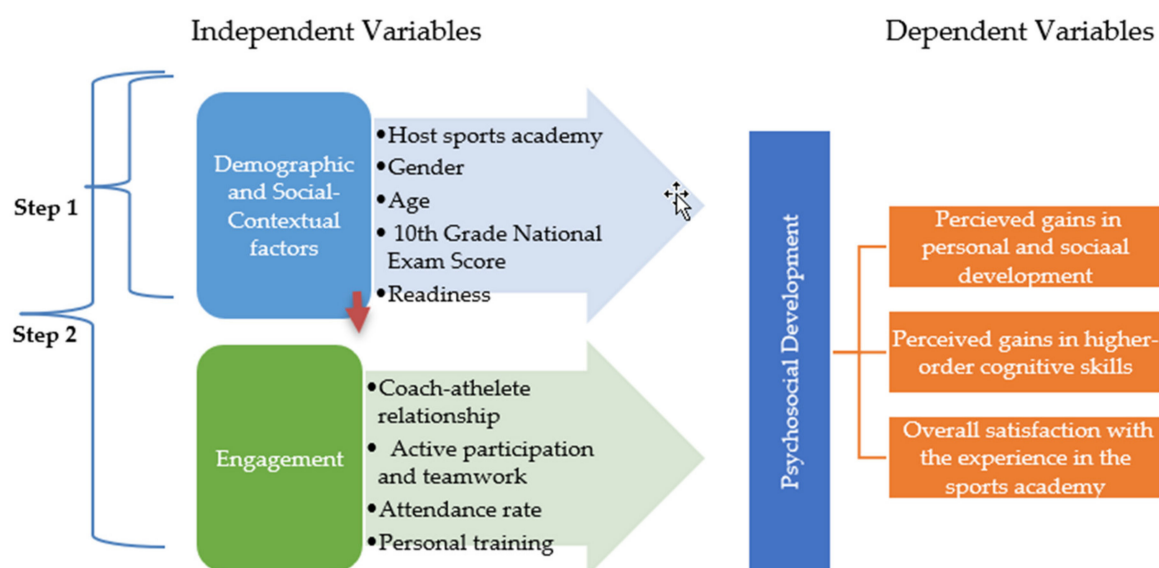


Figure 1. The conceptual model illustrating the relationships between the independent variables and dependent variables measured in the study.

It is clear from Figure 1 that the conceptual framework is multi-dimensional. Considering this framework, this study empirically tests the role played by demographic, contextual, and engagement factors in accounting for the variances sought in youth athletes reported developmental gains and satisfaction.

1.5.3. Descriptions of Sports Academies Studied

Tirunesh Dibaba Sports Academy is the first Ethiopian athletic training center established in 2010. It is located near Asella town, Arsi Zone, Oromia Regional State. Its establishment originates from Ethiopian athletes' accomplishments in the Beijing 2008 Summer Olympics, and the resultant commitment to accelerate and multiply athletic success. Hence, the academy was named after one of the most prominent female athletes, Tirunesh Dibaba, who won double golds in 5000 m and 10,000 m at the Beijing 2008 Summer Olympics [59]. This academy provides an opportunity for selected male and female youth athletes specializing in athletics and football major fields.

Ethiopian Youth Sports Academy (EYSA) is the other sports academy established in 2013 with the intent to expand the landscape of sporting success, and is in the capital Addis Ababa, Ethiopia. This sports academy is comprehensive, and hosts selected male and female youth athletes across nine major fields, including athletics, football, volleyball, handball, basketball, boxing, tennis table, taekwondo, and swimming. Details of these academies from entry to graduation, characterizing talent identification and development, were reported earlier in a peer-reviewed journal [50].

1.6. Hypothesis

Guided by the model (Figure 1), our interest was to identify those engagement variables that may relate with the youth athlete developmental outcomes after accounting for the contextual factors. Specifically, we tested the following hypotheses:

Hypothesis 1 (H1). *There is a difference in youth athlete engagement based on the sports academy enrolled.*

Hypothesis 2 (H2). *Youth athletes' personal characteristics and experience will have a moderate influence on youth engagement in sports and psychosocial development and satisfaction.*

Hypothesis 3 (H3). *Youth athletes' engagement predicts some selected youth psychosocial developments and satisfaction over and above the demographic and social-contextual factors.*

2. Materials and Methods

2.1. Research Design and Procedures

This study used a cross-sectional survey design. The quantitative conceptual models (see Supplementary, Figures S1–S3) informed the nature of the study and the variables measured. By assessing both developmental outcomes as well as the learning experiences involved in sport academies, and the demographic and social-contextual factors, the study attempted to develop a more complex picture of the phenomena under study [60].

The Ethiopian sports academies are in their early stages of development as centers of sports and education [61,62]. The present study randomly sampled from two of five sports academies in existence in Ethiopia. Tirunesh Dibaba Sports Academy is located near Asella town, Arsi Zone, Oromia Regional State and the EYSA is situated in the capital Addis Ababa. These academies enroll hundreds of youth athletes every year in a range of sports disciplines.

The final sample ($n = 257$, $n_{\text{female}} = 122$, and $n_{\text{male}} = 135$) included youth athletes (a mean age of 17.87 and a standard deviation of 1.10) from the two randomly selected sports academies, accounting for 63% of the youth athlete population enrolled in the two sports academies; data from this sample have been published elsewhere [63], and there may be a degree of overlap. Therefore, engagement was measured in each study, but the focus of the earlier published article was psychometric validation of the instrument.

This research was approved by the EYSA Ethical Review Board. In total, 410 youth athletes were eligible for participation based on their enrolment status in the two sports academies studied. The researchers collected the relevant data from the study participants after obtaining verbal consent from the youth athletes' guardians, and written consent from the youth athletes in the respective sports academies. While a total of 274 consent forms were signed and questionnaires returned, 17 questionnaire responses were rejected since these youth athletes did not provide more than 50% of the needed information. In the final analysis, a total of 257 questionnaire responses were included. In terms of gender across the two academies, the distributions were similar (sample participants in Tirunesh Dibaba Sports Academy: $n = 119$, $n_{\text{female}} = 62$, and $n_{\text{male}} = 57$; and sample participants in EYSA: $n = 138$, $n_{\text{female}} = 60$, and $n_{\text{male}} = 78$).

The sample included a nationally representative cohort from all the nine regional states and one of the two city administrations. This means that the sample represents the country's youth population in key demographic characteristics. Hence, the cohort has enough similarity to the youth population of the country being studied and that results may be valid.

2.2. Instrumentation

The youth athlete psychosocial development and satisfaction items were generated from selected items from an athlete satisfaction scale [64] and a student engagement and learning outcome scale [65]. The questionnaire has been extensively adapted to the existing sports academy contexts via the application of experts' reviews, pilot testing, reliability tests, and advanced model fit tests. Research outputs have been published previously in an international peer-reviewed journal [63]. This study is entirely different from the one published earlier, in terms of analysis, as it examined the relationships of youth athletes' engagement in sports education and psychosocial development and satisfaction.

We used self-reported measures to collect the required data regarding our variables of interests. Engagement in sport was measured based on the individual youth athlete scores on composite measures in two domains, including active participation and teamwork and the coach–athlete relationship. Moreover, the youth-athlete attendance rate in the regular program and the time devoted for practical training were assessed as part of the engagement measure.

In addition, psychosocial development was measured based on the individual youth athlete scores on composite measures in three domains: Perceived gains in personal and social development (six items), perceived gains in higher-order cognitive skills (four items), and satisfaction driven from the experiences in the academies of sports (four items).

The youth athlete gains question items began with, “To what extent has your experience at this sports academy contributed to your knowledge, skills and attitudinal development in the following areas?” and were scaled 1 (very little) to 4 (very much). The satisfaction question items began with, “To what extent do you agree with each of the following statements that describe satisfaction with the experience at this sports academy?” and were scaled 1 (strongly disagree) to 4 (strongly agree).

2.3. Data Analysis

Independent *t* tests and chi-squared tests were used to examine differences in youth athlete engagement across the sports academies. In addition, the researchers used partial correlation analyses, as a preliminary step, to identify potential determinants of youth athletes’ engagement in the sports academies. The main intention of our analyses was to draw conclusions at the level of the individual, not the institutional level, so our report chiefly focuses on individual-level effects. All analyses were run using Stata 15 data analysis and statistical software package [66]. Across all analyses, the sports academy was dummy coded, with Tirunesh Dibaba Sports Academy entered as the model, and EYSA as the reference group. In addition, gender was dummy coded with the male entered as the model, and female as the reference group.

2.4. Preliminary Analysis

Table 1 presents results of the partial correlation analyses to identify the independent contributions of each personal variable to the prediction of engagement or youth development outcome.

Table 1. Summary of partial correlations for scores of engagement and developmental outcomes as a function of selected demographic characteristics and contextual factors (n = 257).

Variable	Car ^a	Apt ^b	AR ^c	Training Hours	Gpsdev ^d	Ghocs ^e	Satisfaction
Academy	−0.25 ***	−0.21 ***	−0.01	−0.22 ***	−0.39 ***	−0.42 ***	−0.52 ***
Gender	0.08	0.05	0.04	0.06	−0.15 *	−0.05	−0.14 *
Age	−0.04	−0.06	−0.16 *	−0.03	−0.07	−0.08	−0.07
Score ^f	0.01	0.07	−0.04	−0.06	0.17 **	0.08	0.12 ^{ms}
Readiness	0.28 ***	0.23 ***	0.13 *	0.15 *	0.07	0.09	0.18 **

Notes: ms, marginally significant $p < 0.10$. ^a: Coach–athlete relationship; ^b: Active participation and teamwork; ^c: Attendance rate; ^d: Gains in personal and social development; ^e: Gains in higher-order cognitive skills; and ^f: 10th Grade National Exam Score. Significant levels: ^{ms} marginally significant. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

As can be seen in Table 1, the five selected contextual factors have a significant association with at least one of the student engagement or positive youth development variables. It is clear from Table 1 that sport academy and youth athletes’ readiness have been associated with most of the engagement and positive youth development variables than the others.

3. Results

3.1. Overview

Two sets of analyses were performed in order to answer our research questions. The first set used multiple regressions to examine the relative influence of five contextual variables on youth athlete engagement in sports variables (Hypothesis 2). The second set used two-step multiple regressions to assess the relative influence of engagement variables on the developmental outcomes of youth athletes, separating the prediction of the contextual variables and the engagement variables (Hypothesis 3). However, as a first step, we ran group comparison tests on the student engagement measures to examine the pattern of significant differences between sample groups in the two academies (Hypothesis 1).

No gender or grade-level differences were found for the engagement variables; therefore, gender and grade-level are not considered in further group comparison tests. In addition, based on partial correlation analysis results, sporting event, class year, the administrative region from where the youth athlete came from, his/her Grade 8th National Exam Score, and motivation, do not show significant relationships; therefore these variables are not considered in further regression analyses.

3.2. Group Differences

Youth athletes in Tirunesh Dibaba Sports Academy and EYSA rate of attendance and personal training time usage was compared to evaluate whether their frequency distributions were significantly different. Tables 2 and 3 present the summary of the comparison test results.

Table 2. Results of group comparisons in attendance rate and personal training hours between youth athletes in the academies studied.

Variable	Tirunesh Dibaba	EYSEYSA	Pears Pearson Chi-Squared Test on Chi-Squared Test	Cohen's d
Attendance rate	Frequency	Frequency		
<50%	28	28		
From 51% to 74%	16	28	2.7199	0.2068
From 75% to 94%	26	24		
From 95% to 100%	49	58		
Personal Training hours				
No schedule at all than my regular session	20	35		
Less than an hour	36	59	14.9219 **	0.4966
From 1 h to 3 h	39	33		
From 4 h to 6 h	18	10		
From 7 h to 10 h	4	1		
More than 10 h	2	0		

Note: Cohen's d = effect size. Effect size (Cohen's d) computed by transforming the Person chi-squared value [67]. Significance levels. ** $p < 0.01$.

Table 3. Results of group comparisons in active participation and teamwork and coach-athlete relationship between youth athletes in the academies studied.

Variable	Tirunesh Dibaba		EYSA		95% CI		DF	T Test	Cohen's d
	M	SD	M	SD	LL	UL			
Apt ^a	2.46	0.64	2.21	0.69	0.13	0.62	255	3.03 ***	0.38
Car ^b	2.31	0.65	1.97	0.67	2.04	2.21	255	4.12 ***	0.52

Note: CI = confidence Interval; LL = lower Limit; UL = upper Limit; DF = degrees of freedom; ^a: Active participation and teamwork; ^b: Coach-athlete relationship. Significance levels: *** $p < 0.001$.

As shown in Table 2, the significant chi-square statistics imply that, only for personal training hours, the distribution of scores for the youth athlete group in Tirunesh Dibaba Sports Academy is not the same as for the distribution of scores for youth athletes in EYSA. When the chi-squared results were transformed in terms of effect sizes, there is a significant moderate difference in time usage for personal training (Cohen's $d = 0.4966$).

In addition, it is clear from Table 3, the levels of active participation and teamwork and coach–athlete relationship of youth athletes in Tirunesh Dibaba Sports Academy and youth athletes in EYSA were compared to evaluate whether their means were significantly different. The test for active participation and teamwork was significant, $t(255) = 3.03, p < 0.001$. Similarly, the test for coach–athlete relationship was significant, $t(255) = 4.12, p < 0.001$.

As can be seen from Table 3, youth athletes in Tirunesh Dibaba Sports Academy ($M = 2.46, SD = 0.64$) reported reasonably higher scores in active participation and teamwork than youth athletes in EYSA ($M = 2.21, SD = 0.69$). The result was similar for the coach–athlete relationship as well. Youth athletes participating in Tirunesh Dibaba Sports Academy ($M = 2.31, SD = 0.65$) reported slightly higher scores in coach–athlete relationship than youth athletes in EYSA ($M = 1.97, SD = 0.67$).

Overall, the results indicate that the two groups appear relatively different in their levels of engagement. The results indicate that the youth athletes in Tirunesh Dibaba Sports Academy group had slightly more engagement experiences in active participation and teamwork, coach–athlete relationship, and personal training hours spent during the academy season than youth athletes in EYSA.

3.3. Summary Results of Regression Analyses

Four separate multiple regression analyses were conducted to examine the relationship between youth athletes' engagement and the five potential predictors. Table 4 presents the summary results of the regression models.

Table 4. Summary of regression models predicting the four components of engagement in sports.

DV ^e	Independent Variable	B	SE ^a	t Value	p	B	F Value	R ²
Car ^b	Sports academy	0.23	0.06	3.98	0.0000	0.24 ***	8.07 ***	0.14
	Gender	0.08	0.06	1.30	0.1960	0.08		
	Age	−0.02	0.03	−0.66	0.5130	−0.04		
	Score ^c	0.01	0.06	0.18	0.8580	0.01		
	Readiness	0.23	0.05	4.56	0.0000	0.28 ***		
Apt ^c	Sports academy	0.22	0.06	3.43	0.0010	0.21 **	6.14 ***	0.11
	Gender	0.06	0.07	0.86	0.3910	0.06		
	Age	−0.03	0.03	−0.98	0.3290	−0.07		
	Score	0.07	0.07	1.13	0.2610	0.07		
	Readiness	0.20	0.05	3.71	0.0000	0.23 ***		
Attendance rate	Sports academy	0.01	0.15	0.09	0.9250	0.01	2.79 *	0.05
	Gender	0.11	0.16	0.65	0.5150	0.04		
	Age	−0.19	0.08	−2.53	0.0120	−0.17 *		
	Score	−0.09	0.16	−0.59	0.5550	−0.04		
	Readiness	0.28	0.13	2.14	0.0340	0.14 *		
Hours spent for personal training	Sports academy	0.46	0.13	3.53	0.0000	0.22 ***	4.07 **	0.08
	Gender	0.13	0.14	0.94	0.3470	0.06		
	Age	−0.03	0.07	−0.51	0.6070	−0.04		
	Score	−0.13	0.14	−0.93	0.3530	−0.06		
	Readiness	0.27	0.11	2.43	0.0160	0.15 *		

Note: ^a Standard error, ^b coach–athlete relationship, ^c 10th Grade National Exam Score, ^d active participation and teamwork, ^e dependent variable. Significance levels * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

As can be seen from Table 4, the variabilities accounted for by the four models range between 0.05 and 0.14 in student engagement. In those four regression models, youth athletes' readiness was the

highest predictor of coach–athlete relationship ($\beta = 0.28$). In addition, the youth athlete’s age negatively predicted attendance rate ($\beta = -17$). Meaning, the rate of attendance decreases as the youth athlete age increases.

3.4. Results of the Regression Analysis Models Predicting Developmental Outcomes

Two-step hierarchical multiple regressions were conducted on the three youth athlete outcome measures. Detailed quantitative results of the two-step hierarchical regressions summaries are presented in Table 5.

Table 5. Summary of the two-step hierarchical regression models of engagement in sports predicating psychosocial development and satisfaction measures (n = 257).

Dependent Variable	Independent Variable	B	SE ^a	t Value	p	B	F Value	R ²
Step One								
Gains in personal and social development	Sports academy	0.55	0.08	6.62	0.0000	0.38 ***	12.91 ***	0.21
	Gender	-0.21	0.09	-2.37	0.0180	-0.15 **		
	Age	-0.04	0.04	-1.05	0.2940	-0.07		
	Score ^c	0.23	0.09	2.65	0.0090	0.15 **		
	Readiness	0.08	0.07	1.17	0.2420	0.07		
Step Two								
Gains in personal and social development	Sports academy	0.44	0.08	5.86	0.0000	0.31 ***	19.50 ***	0.42
	Gender	-0.24	0.08	-3.12	0.0020	-0.17 **		
	Age	0.00	0.04	-0.08	0.9380	0.00		
	Score	0.17	0.08	2.23	0.0270	0.11 *		
	Readiness	-0.04	0.07	-0.56	0.5750	-0.03		
	Csr ^d	-0.50	0.20	-2.50	0.0130	-0.33 *		
	Apt ^e	1.02	0.18	5.62	0.0000	0.73 ***		
	Attendance rate	0.10	0.03	3.24	0.0010	0.16 **		
Training hours	0.00	0.04	0.06	0.9520	0.00			
Step One								
Gains in higher-order thinking	Sports academy	0.63	0.09	7.35	0.0000	0.43 ***	12.65 ***	0.20
	Gender	-0.07	0.09	-0.79	0.4300	-0.05		
	Age	-0.05	0.04	-1.19	0.2340	-0.08		
	10th Grade NES	0.12	0.09	1.32	0.1870	0.08		
	Readiness	0.11	0.07	1.48	0.1410	0.09		
Step Two								
Gains in higher-order thinking	Sports academy	0.50	0.08	6.41	0.0000	0.34 ***	18.29 ***	0.40
	Gender	-0.11	0.08	-1.35	0.1780	-0.07		
	Age	-0.01	0.04	-0.30	0.7660	-0.02		
	10th Grade NES	0.06	0.08	0.82	0.4150	0.04		
	Readiness	-0.02	0.07	-0.35	0.7240	-0.02		
	Csr	-0.39	0.21	-1.89	0.0590	-0.25		
	Apt	0.94	0.19	4.98	0.0000	0.66 ***		
	Attendance rate	0.09	0.03	2.87	0.0040	0.15 **		
Training hours	0.03	0.04	0.70	0.4820	0.04			
Step One								
Satisfaction	Sports academy	0.71	0.07	9.55	0.0000	0.51 ***	24 ***	0.33
	Gender	-0.17	0.08	-2.15	0.0330	-0.12 *		
	Age	-0.04	0.04	-1.04	0.3010	-0.06		
	Score ^b	0.15	0.08	1.90	0.0580	0.10		
	Readiness	0.18	0.06	2.86	0.0050	0.15 **		
Step Two								
Satisfaction	Sports academy	0.60	0.07	8.55	0.0000	0.43 ***	24.45 ***	0.48
	Gender	-0.21	0.07	-2.94	0.0040	-0.15 **		
	Age	0.00	0.03	-0.15	0.8830	-0.01		
	Score	0.12	0.07	1.69	0.0920	0.08		
	Readiness	0.06	0.06	0.93	0.3510	0.05		
	Csr ^c	-0.07	0.18	-0.38	0.7070	-0.05		
	Apt ^d	0.55	0.17	3.30	0.0010	0.41 ***		
	Attendance rate	0.09	0.03	3.21	0.0020	0.15 **		
Training hours	0.02	0.03	0.72	0.4730	0.04			

Note: ^a: Standard Error, ^b: 10th Grade National Exam Score, ^c: Coach-athlete relationship, ^d: Active participation and teamwork. Significance levels * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

As can be seen from Table 5, in the first step, the contextual factors statistically predicted perceived gains in personal and social development, when entered first into the regression model; Step 1: Model $R^2 = 0.21$, $F(5, 247) = 12.91$, $p < 0.001$. Similarly, in Step 2, when the four engagement variables were added to the regression model, they brought significant changes in predictions. Step 2: Model $R^2 = 0.42$, $F \text{ Change } (9, 243) = 19.50$, $p < 0.001$.

Moreover, as shown in Table 5, of all the predictors used in Steps 1 and 2, active collaboration and teamwork has the highest prediction of the criterion variable, perceived gains in personal and social development ($\beta = 0.73$, $t(243) = 5.62$, $p < 0.001$). Male youth athletes have larger gains than their female counterparts do.

Moreover, as can be seen in Table 5, in the first step, the contextual factors statistically predicted gains in higher-ordered cognitive skills, when entered first into the regression model; Step 1: Model $R^2 = 0.20$, $F(5, 247) = 12.65$, $p < 0.001$. Similarly, in Step 2, when the four engagement variables were added to the regression models, they brought significant changes in predictions. Step 2: Model $R^2 = 0.40$, $F \text{ Change } (9, 243) = 18.29$, $p < 0.001$. Of all the predictors used in Steps 1 and 2, again, active participation and teamwork have the highest prediction of the criterion variable, gains in higher-order cognitive skills ($\beta = 0.66$, $t(243) = 4.98$, $p < 0.001$).

As can be seen in Table 5, in the first step, the contextual factors statistically predicted satisfaction, when entered first into the regression model; Step 1: Model $R^2 = 0.33$, $F(5, 247) = 24$, $p < 0.001$. Similarly, in Step 2, when the four engagement variables were added to the regression models, significant changes occurred in predictions. Step 2: Model $R^2 = 0.48$, $F \text{ Change } (9, 243) = 24.45$, $p < 0.001$. Of all the predictors used in Steps 1 and 2, academy type has the highest prediction of the criterion variable, satisfaction ($\beta = 0.51$, $t(247) = 9.55$, $p < 0.001$). It was also found that the relationship between gender and satisfaction outcome may be spurious as well as the relationships between 10th grade exam score and youth athletes' satisfaction. These apparent relationships disappeared when the engagement variables entered the model.

4. Discussion

Emphasizing the developmental needs of participants in a sports academy setting, in this study, we tested the variances in psychosocial development and satisfaction accounted for selected demographic and contextual factors and youth athletes' engagement domains. Group comparison tests were used, identifying differences among youth athletes classified by academy enrolled in in terms of the four engagement components. Moreover, multiple regression analysis was used to examine the demographic and contextual factors in promoting youth athletes' engagement, psychosocial development, and satisfaction.

Despite increased attention paid to youth-to-senior professional transition in sports in recent years, very little is known about the specific features of youth athlete engagement in sports academies, the factors accounting for the variance in engagement, and how that is related with youth developmental outcomes. This study explored the demographic and social-contextual factors that matter in youth athletes' engagement in sports practice, presumably institutional and personal factors.

4.1. Engagement Scores between Youth Athletes Enrolled in Sports Academies

The first hypothesis tested was whether there is a difference between the two groups (Tirunesh Dibaba Sports Academy and EYSA) in the youth athletes' engagement (Hypothesis 1). The results confirm this hypothesis (see Tables 2 and 3), indicating significant group differences with effect sizes ranging from 0.20 to 0.52 between the two groups on the engagement variables measured, including attendance rate, personal training, active participation and teamwork, and coach–athlete relationship. These group differences are low to moderate effects [68]. This indicates that the sports academy environment is contextually different. This is in line with the findings reported in the literature in these fields, as context matters most in sports education experiences [49,69].

This may be attributed to differences in institutional program quality representing the supportiveness of the environment, and the opportunities created for engagement. In previous work, these have been outlined as key points of difference [70]. Moreover, these group comparison results corroborate the self-determination theory perspective, providing empirical evidence that justifies that youth athletes enrolled in sports academies can be engaged or remain passive largely depending on the social conditions in which they develop and function [71]. In other words, the social-contextual conditions either facilitate or hinder the natural processes of self-motivation for task engagement [72].

4.2. Factors Affecting Youth Athlete Engagement

The second hypothesis tested was whether some demographic and contextual factors were associated with higher youth-athlete engagement experience (Hypothesis 2). The results support this prediction (see Table 4), indicating that there was a positive relationship between youth athlete engagement and demographic and contextual factors. This finding is consistent with previous work suggesting that demographic and contextual factors may be related to youth athlete engagement [28]. Age was the only demographic variable found to be a significant predictor of youth-athlete engagement experience. Moreover, two contextual variables were found to be significant predictors of youth-athlete engagement: Academy enrolled in and readiness for sports education.

4.3. Relating Psychosocial Development and Satisfaction with Engagement, Demographic, and Contextual Factors

The third hypothesis tested was whether some demographic and contextual factors and higher levels of engagement were associated with higher psychosocial development and satisfaction (Hypothesis 3). The results support this prediction (see Table 5), indicating that there was a positive relationship between engagement, psychosocial development, and satisfaction. In particular, gender was the only demographic variable found to be a significant predictor of youth athletes' psychosocial development and satisfaction. Moreover, two contextual variables were found to be significant predictors of youth athletes' psychosocial development and satisfaction: Academy enrolled in and prior ability score. This finding is consistent with previous work suggesting that psychosocial development and satisfaction may be closely related to youth athlete engagement [73]. It is also consistent with previous work linking the outcomes of sports participation to the context in which that participation takes place [28].

Research findings show that engagement plays a key role in mediating between the contextual influences and developmental outcomes in youth athletes [32]. However, youth athletes' learning and developmental perspectives, and the meaning attached within the learning context, appear crucial [74].

According to the regression results presented in this study, youth athletes' engagement in sport practice as well as psychosocial development and satisfaction relate with some selected demographic and social-contextual factors. This finding is consistent with research results reported in the literature on this field. In fact, it is the context where the sport takes place that really matters for the positive experience and the resulting developmental outcomes youth athletes obtain [75]. Seen from a developmental perspective, the evidence presented in this study shows that Ethiopian youth sports academies are devoted to youth development through promoting engagement in sports learning [75]. These aspects of the program are often less visible but equally important in fostering psychosocial development and satisfaction [5].

The participation of youth athletes in the sports academies has several outcomes far beyond the development of athletic- and sport-specific skills [76], positively impacting psychosocial development and satisfaction [77]. While this justifies the contribution of organized sports to aspects of development [19], the evidence presented in this study could have a more strategic function in understanding the roles, social processes, and mechanisms of sport-for-development in the context of a sports academy program.

Engagement requires that youth athletes interact while performing complex tasks, thus building relationships while making developmental progress [73]. As the results of this study suggest, the more engaged youth athletes are in a sports academy, the more likely they are to achieve psychosocial development and satisfaction. From this, it may be inferred that youth athlete engagement is not only one of the results of participation in sports education but is also one of the processes contributing to higher levels of reported developmental gains and satisfaction. These results have important implications for sports academies in Ethiopia and beyond. When youth athletes become disengaged from the complex tasks in the academy, it represents both a failure for the academy and a developmental disadvantage for the individual youth athlete. In fact, engaging well in the academy significantly increases a youth athlete's opportunities to learn and develop, whereas disengaging (engaging poorly) restricts future opportunities for education and career [48].

Generally, there does appear to be some consensus, including the findings reported in this study that demographic and social-contextual factors determine successful and beneficial engagement in sports experiences as well as the resultant positive psychosocial development and satisfaction. Therefore, the results are generally indicative and consistent with earlier studies that participation in sports is positively related to several cognitive and non-cognitive outcomes [78].

According to the ecological systems theory, human development and human behavior are the results of person–context interactions [79]. An ecological perspective on talent development highlights the central role of the environment as it affects an elite youth athlete [80] and mirrors the complexity of talent development processes and outcomes [81]. In this sense, developing sports talent is a multifaceted phenomenon, requiring research approaches that incorporate interdependencies and interactions between athletes and their environment.

In this study, we elucidate developmental theory and engagement theory as a multidisciplinary theoretical rationale for capturing how multiple interacting factors can predict psychosocial development and satisfaction of youth athletes. The results of the analysis suggest that individual characteristics and institutional contexts play an important role in shaping engagement, psychosocial development, and satisfaction of youth athletes in the sports academies studied. Based on this, we recommend emphasizing the individual nature of youth athlete trajectories in a particular sport, and identifying the range of interacting factors that impinge on the performance potential of the individual youth athlete [82].

4.4. Study Limitations and Directions of Future Research

In this study, as in any multiple regression analysis model, we ascertained relationships, but we can never be sure about the underlying causal mechanism. Due to this, the capacity to determine the existence and direction of causal links between youth athletes' sports participation and indicators of psychosocial development and satisfaction is limited by the fact that the study was cross-sectional. Thus, it is recommended that the causal links between participation in organized sports and youth psychosocial development and satisfaction be further investigated through intervention-based and longitudinal studies.

The sample youth athlete participants in the two sports academies (i.e., $n = 257$) may be considered a small sample for multiple regression. Another potential limitation of this study is that the sample included only youth athletes at sports academies; hence, the study confines itself within the age range of 16 to 20, leaving aside other developmental stages. Future research should examine the relation between reported developmental gains and satisfaction and engagement across other developmental stages (e.g., children and adult athletes), as different age groups may place different degrees of emphasis on engagement in sports. Another topic that needs more research is the trends of youth athlete engagement over the years. Thus, future research should focus on longitudinal studies to measure youth-athlete engagement over time

Another limitation of the study is the focus on broad conceptualizations of outcomes, including perceived developmental gains and satisfaction. Future research may wish to examine other indices of

outcomes, such as physical tests, interest, and values. Likewise, future research may also examine whether these different indices of outcomes are differentially affected by engagement.

In a broader perspective, there are three main interpersonal relationships in sport. These are youth–peer relationships [83,84], coach–athlete relationships, and youth–parent relationships [85]. Seen from these possible variants of relationships, the present study focuses exclusively on coach–athlete relationships, thus ignoring the effects of other relationships, such as relationships with peers and parents. Hence, this was one potential limitation of this study. The extent to which different relationships (e.g., youth athlete–coach, peers, and parents) mutually affect each other remains an important topic for future research.

5. Conclusions

The effects of demographic and contextual factors on youth participation in organized sports and positive youth development have gained considerable attention in the past two decades [7,19,86]. This is particularly true in sports academies, where researchers have increasingly recognized that athletic and education performances may be affected by individual and institutional conditions [87,88]. Previous research shows that youth-athlete engagement in sports may be associated with multiple outcomes, especially during enrollment years [6,11]. What this literature does not make clear, however, is which demographic and contextual factors promote engagement and development outcomes. In this article, we explore this issue by examining some demographic and contextual factors on engagement, psychosocial development, and satisfaction of youth athletes.

According to the evidence presented in this study, the sampled youth athletes had ample engagement experiences; however, there were low to moderate differences in engagement scores between youth athletes enrolled in the two academies studied. Additionally, demographic and contextual factors, such as academy enrolled, gender, age, prior ability score, and readiness for sports education emerged as key factors predicting aspects of engagement, psychosocial development, and satisfaction. However, this study found differential effects of these factors on psychosocial development and satisfaction measured. Moreover, the study found that higher levels of engagement in sports education predict higher levels of developmental outcomes over-and-above demographic and social-contextual factors.

The model presented in this study represents an initial attempt to describe and evaluate the effects of various demographic and social-contextual factors affecting engagement in sports education and the resultant outcomes in the context of sports academies. It appears that the extent of youth athlete engagement in sport in the studied two sports academies, as evidenced in this study, can potentially affect youth athletes' developmental outcomes. The five demographic and social-contextual factors of youth athletes' engagement, as evidenced in this study, can potentially affect their psychosocial development and satisfaction.

This study contributes uniquely to the sports education literature by testing theoretical predictions regarding the relationship between reported engagement, developmental gains, and satisfaction. Further, this study uses multivariate analysis and group comparison tests. Thus, the results of this study have considerable generalizability and the robustness of results across a variety of participant characteristics, measures of engagement, psychosocial development, and satisfaction.

To conclude, the evidence presented in this study will be relevant for sport academy administrators, coaches, and program designers who are anticipating future improvement in youth athletes' experiences in sports academy programs. The analyses generally confirm the practicability of the theoretical construct to frame youth-athlete engagement and the corresponding hypothesized resultant effects on psychosocial development and satisfaction. Hopefully, this would provide the basis for a constructive dialogue among staff members of sports academies regarding the need for a self-critical and self-improving institutional culture and understanding the social processes and mechanisms that might lead to desired outcomes for youth athletes.

Supplementary Materials: The following are available online at <http://www.mdpi.com/2071-1050/12/7/2725/s1>, 1. Regression models, Figure S1: Regression models representing the relationships of contextual factors and engagement variables, and 2. Two-Steps hierarchical regression models predicting developmental outcomes, Figure S2: Regression Models representing the relationships of contextual factors and youth athlete developmental outcome measures, and Figure S3: Regression models representing the prediction of contextual factors and engagement variables together on the three developmental outcomes variables.

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