STATISTICAL ANALYSIS ON FACTORS THAT HINDERS THE EFFECTIVENESS OF JUNIOR ATHLETICS PROJECTS IN NORTH WOLLO ZONE, ETHIOPIA

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Abstract

Background: *This study was conducted to assess factors that affect the effectiveness of junior athletics projects in north Wollo zone. The main objective of the study was identifying factors affecting the effectiveness of junior athletics projects in north Wollo zone.*

Methods*: The study used stratified sampling method to select the samples. Both primary and secondary source of data were used to gather reliable data. Mixed types of research approach (quantitative and qualitative) were employed. To achieve the objective of the study, cross-sectional study designed were employed. The collected data was organized, tabulated, and analyzed using descriptive and inferential method of data analysis.*

Results: *The results of Proportional Odds Model reveal that training year or duration on the training of the athlete, that are trained between 2.1 to 3 year and 3.1 to 4 years are 0.855 and 0.985 times respectively smaller in performance than those athletes who trained in the project for less than 1 year. The result showed that athletes who haven't the training field are 0.792 times less in performance than those athletes who have training field. In this study, those athletes who have well, bad and very bad relationship with their coach are 0.707, 0.989 and 0.979 times respectively lower in performance than athletes having very good relationship with their coach. In addition athletes who don't participate in planning with their coach are 0.849 times lower in performance as compare to those athletes who participate. Those athletes who don't get payment in the project are 0.952 times low in performance than athletes who get payment.*

Conclusion: *The study identified factors related to sport offices related, coach related factors, athlete related. Regarding to sport office related factors such as shortage of training equipment and facilities, non-availability of training fields, lack of supervision and follow up for coaches and athletics projects, shortage of competition opportunities for athletes. Among coach related factors inability to prepaid peridized and scientific training plan, lack of providing proper demonstration for athletes, not recruiting the athletes based on talent identification. Considering athlete related factors lack of motivation on athletics sport.*

Key Words: junior athletics projects, athletics Coach, junior Athlete, Talent identification, athletics Training, sport training Plan

Background: Ethiopians have a stunning result in athletics since 1950th by the strong struggle of great Ethiopian runners, for example as [1] stated that "African athletics was announced to the world in the 1960 Olympic as barefooted Ethiopian Abebe Bikila took the gold medal in the marathon, and repeated in 1964. Ever since the floodgate was opened, Ethiopia has captured 45 Olympic medals, all of them in long distance running through 2012, despite participating in three Olympic boycotts."

Now a day's many nations are coming to the competitions especially east African athletes are becoming dominant. Like Kenya and Uganda. The result of competitions that held after 2015, Ethiopia have lost many medals on the competitions on both world championships and Olympic Games and the Kenyans are becoming dominant in many races [2]. As [3] Ethiopia lacks a broad base and replenishes capable athletes in more diverse athletics sub-disciplines; organizing youth athletic sports training projects in selected talented areas of the country remains the only alternative.

North Wollo zone organized projects since 1992 E.C. and recently there are five athletics projects but they were not effective in regional competitions and feeding clubs. Moreover, the zone had lost its status what it had before 5 years (North Wollo zone sport office annual report, 2017). It needs immediate solution to bring back the level of the zone in athletics competitions. Therefore, the focus of this study is to asses factors affecting the effectiveness of north Wollo zone athletics project athletes.

Data and Methodology

Study Area

This study was conducted in North Wollo zone. This zone is located in the north east part of Amhara region; it is bordered on the south Wollo, on the west South Gondar, on the north by *Wag Hemra*, on the north east by Tigray Region, and on the east by Afar Region; part of its southern border is defined by the Mille River. Its highest point is Mount AbuneYosef. Its towns include Lalibela (known for its rock-cut churches) and Woldia. North Wollo acquired its name from the former province of *Wollo*. There are 10 woredas and 3 city administrations in the zone.

In north Wollo zone there are about five athletics projects. Those are Dawint (Kurba), Kobo town, Lalibela, Raya kobo (Robit) and wadla (Kone).

Study Design and Study Population

For this study a cross sectional study design was applied. The population frame includes 150 athletes from 5 athletics projects, 30 athletes each 15 male and 15 female, 5 project coaches, 5 woreda sport commission experts and one zone sport commission expert.

Sampling Technique and Sample Size Determination

The sample size determination formula by [4] was adopted for this study after considering the sight of the project as stratification. The reason why the researchers use the sight of the project as stratification is there is heterogeneity between the projects in training capacity.

$$n = \frac{\sum_{i=1}^{10} \frac{w^2 {}_i N_i P_i (1-P_i)}{w_i (N_i - 1)}}{V + \frac{\sum_{i=1}^{10} \frac{w_i N_i P_i (1-P_i)}{N_i - 1}}{N}}$$

Where, $V = (\frac{d}{Z\alpha/_2})^2$, Z is the upper $\alpha/_2$ points of standard normal distribution with $\alpha = 0.05$ level of significance, which is Z= 1.96. The degree of precision, **d** is taken to be 0.05 and the proportions, P_1, P_2 and $P_5 = 0.5$ represented the proportion of effectiveness among junior athletes within stratum. In this study the total population (N) is 150 with N_1= 30, N_2 = 30 …… N_5 =30. Thus, the stratum weights were calculated using the formula $w_i = \frac{N_i}{N}$ giving w_1= 0.2, w_2= 0.1 … w_5= 0.2. Consequently, the sample size calculated is 90.

Allocation of Sample Size

To determine the size of the sample from each stratum, equal allocation has been used which resulted in a sample of 18 athletes from each stratum.

Data

Data were obtained from both primary method of data collection (structured questionnaire, interviews as well as observation) and secondary method of data collection (athlete's portfolio, coaches training plan).

Study variables

The response/outcome variable in study is athlete's performance(High, medium and low) and The predictor (independent) variables considered were Athlete's age, training age(year), training day per week, training hour per day, Availability of training field, coaches' qualification, coaches' ability to plan, coaching experience, availability of training facility, support and follow-up by sport experts, getting competition opportunities, talent identification, performance test, Family and peer support, Motivation of athletes, practice of demonstration by the coach.

Methodology

Data on a sample of 90 athlete's which were from the junior athletics projects were examined using descriptive statistics and Ordinal logistic regression model.

Descriptive Statistics

Descriptive statistics refers to the techniques and methods for organizing and summarizing information obtained from the sample. Descriptive statistics is a kind of statistics, which describe the data using different measurements, like tables.

Ordinal logistic regression model

The general form of ordinal regression model may be written as follows

$$f(\gamma_j(x)) = \log\left(\frac{f(\gamma_j(x)}{1 - f(\gamma_j(x)}\right) = \log\left(\frac{pr(Y \leq j \backslash X)}{pr(Y > j \backslash X)}\right) = \alpha_j + \beta X, j = 1,2, \ldots k-1$$

$$\gamma_j(X) = \frac{e^{\alpha_j + \beta X}}{1 + e^{\alpha_j + \beta X}}$$

Where j indexes the cut-off points for all categories (k) of the response variable, the function

$f(\gamma_j(x))$ is the link function that connects the systematic components. (i.e $\alpha_j + \beta X$) of the linear model, the alpha α_j represents a separate intercept or threshold for each cumulative probability and β represents the regression coefficient [5].If multiple explanatory variables are applied to the ordinal regression model, βX is replaced by the linear combination of $(\alpha_j + \beta_1 X_{j1} + \beta_2 X_{j2} + \cdots + \beta_P X_{jP})$). In this study we used proportional odds model (POM).

The proportional odds model (POM)

[6] details that the proportional odds model is used as a tool to model the ordinal nature of a dependent variable by defining the cumulative probabilities instead of considering the probability of an individual event. Consider a collection of p explanatory variables denoted by the vector X= $(X_1, X_2, \ldots, X_p)$. The relationship between the predictors and response variable is not a linear function in logistic regression; instead, the logistic regression function is used, which is the logit transformation of π.

$$\pi_i = \frac{\exp(\alpha_i + \beta_1 X_1 + \cdots + \beta_p X_p)}{1 + \exp(\alpha_i + \beta_1 X_1 + \cdots + \beta_p X_p)}$$

Then the logit or log-odds of having Pr(Y≤ i) = π_i is modeled as a linear function of the explanatory variables as:

$$\lambda_i(X) = logit[pr(Y \leq i)] = log\left[\frac{pr(Y \leq i)}{1 - pr(Y \leq i)}\right] = log\left[\frac{\pi_i}{1 - \pi_i}\right]$$
$$= \alpha_i + \beta_1 X_1 + \cdots + \beta_p X_p,$$

$0 \leq \pi \leq 1$, i = 1, 2, … , k-1 ,

Where: α_i = threshold value

β_j = parameter

X_j = set of factors or predictors

This equation is called proportional odds model.

Results and Discussion

Descriptive Statistics

This research was conducted in north wollo Zone and collected data on the performance of youth athletes. As reported by north wollo zone, there were ten athletics projects, but now a days there are only 5 projects, namely Kobo town, Robit, Kone, Gohe and Lalibela. The analysis presented in the study is based on 86 athletes who are found in north wollo zone athletics projects.

As we have got the information from north wollo zone sport office, we were planned to collect the data from one coach from each athletics projects a total of ten. However, practically we have got only five coaches. The data that we collect from coaches shows that 60% of the coaches have firs level coaching license and the remaining 40% have second level, only 20% of the coaches were selected the athletes by using talent identification, but the rest 80% of the athletes were selected without considering their talent, 80% of the coaches replied that they were not got any support from any stake holders, 40% of the coaches respond that they have an awareness on periodization, however as we have seen only 40% of the coaches were try to designed training plan, the coaches responded that 60% of the athletes had low motivation for training and the remaining 40% of the athletes had medium motivation for training, as 100% the coaches responded that they could not get competition opportunities for their athletes. And the detail statistics is attached in the table 1.

Table 1: Descriptive statistics related to coaches

Variable	Category	Frequency	Percent
project name	Kobo town	1	20.0
	Robit(Raya Kobo)	1	20.0
	Kon(Wadla)	1	20.0
	Goh(Dawunt)	1	20.0
	Lalibela	1	20.0
Coach's sex	Male	5	100.0
Coach's Educational level	Certificate	2	40.0

	Diploma	1	20.0
	Degree	2	40.0
Coach's Occupation	Teacher	3	60.0
	Sport Office Worker	1	20.0
	Office worker	1	20.0
Experience in Coaching	< 1 year	1	20.0
	2-2.99 year	2	40.0
	>3 year	2	40.0
Coaching Level	1st Level	3	60.0
	2nd Level	2	40.0
Motivation to be Coach	I love the profession	4	80.0
	To help athletes	1	20.0
Preparing a Plan	Yes	2	40.0
	No	3	60.0
Coach's Awareness on Periodization	Yes	3	60.0
	No	2	40.0
Talent identified by performance test	Yes	1	20.0
	No	4	80.0
Coach's effort to improve athletes fitness	Always	2	40.0
	Often	1	20.0
	some times	2	40.0
Athletes family Support	No	5	100.0

Availability of competition	No	5	100.0
Payment for Coaches	Yes	1	20.0
	No	4	80.0
Getting Equipment Support	Yes	1	20.0
	No	4	80.0
Availability of Training Fields	Yes	1	20.0
	No	4	80.0
Athletes Motivation for Training	Medium	2	40.0
	Low	3	60.0
Number of Training Days per week	3 days	3	60.0
	4 days	2	40.0
Training hours per Day	<1 hour	1	20.0
	1-2 hour	4	80.0
Providing Fitness test	Yes	1	20.0
	No	4	80.0
Evaluation the plan with athletes	Yes	1	20.0
	No	4	80.0
Major challenge of Athletics training	lack of training for coaches	1	20.0
	lack of equipment for training	2	40.0
	poor planning skill for training	1	20.0

	lack of plan to each athletes	1	20.0

In this study we try to incorporate the data from sport expert through interview regarding to this, we have incorporate 5 woreda and one zonal sport office experts on why the performance of the athletes becoming low? Based on this, the Woreda experts themselves were respond that they are not interested to support and supervise day today activities of the training, because of the fear that the coaches had knowledge on scientific training, Dearth of training facility, equipment and training field. Athlete's family need more support from the athlete in labor work and athletes missed training days (the athlete did not have enough time to practice). The Zone sport office did not give any support, the community did not give more attention for athletics like football and other sport, Lack of budget because there is low support form stockholders, and finally, according to the zonal sport expert response the report that sends from woreda sport office was fake.

Table 2 below, shows that the relative frequency distributions of the status of the athletics performance, 7% of the athletes had high performance, 11.6% had moderate performance and the rest 81.4% of the athletes had low performance.

Table 2: Proportion of the Athletes in Performance

Performance of the athletes	Freq.	Percent
High	6	7.0
Medium	10	11.6
Low	70	81.4
Total	86	100.0

The performance of the athletes according to selected background characteristics are shown in Table 3. The number of low performance and medium performance of athletes were found higher among the training year (duration on the training) 1-2 year and less than 1 year (44.2% and 4.65%), training days less 2 days and 3 days (70.9% and 4.7%), duration of training per day 1-2 hour (29.1% and 4.7%) Moreover, about 81.4% percent of the total numbers of Athletes are low in performance. All the selected independent 11 variables were significantly

associated with the athletes performance status (Chi-square statistics and p-values are mentioned in Table 3).

Table 3: Athletes performance status according to selected independent variables

Co-variables		Athlete's performance				Pearson chi-square (p-value)
		High (%)	Medium (%)	Low (%)	Total (%)	
training year (duration on the training)	< 1 year	0(0)	4(4.65)	22(25.6)	26(30.2)	38.994 (0.000)
	1-2 year	1(1.16)	2(2.3)	38(44.2)	41(47.7)	
	2.1 - 3 year	1(1.16)	2(2.3)	8(9.3)	11(9.5)	
	3.1 - 4 year	3(3.5)	2(2.3)	2(2.3)	7(16.3)	
	> 4 year	1(1.2)	0(0)	0(0)	1(1.16)	
number of training days per week	< 2 days	3(3.5)	4(4.7)	61(70.9)	68(79.1)	64.364 (0.000)
	3 days	2(2.3)	4(4.7)	7(8.1)	13(15.1)	
	4 days	1(1.2)	2(2.3)	22.3()	5(5.8)	
	> 4 days	0(0)	0(0)	0(0)	0(0)	
duration of training per day	< 30 munities	0(0)	2(3.4)	18(20.9)	20(23.2)	41.166 (0.000)
	30 - 59 munities	1(1.2)	2(3.4)	24(27.9)	27(31.4)	
	1-2 hour	3(3.5)	4(4.7)	25(29.1)	32(37.2)	
	> 2 hour	2(3.4)	2(3.4)	3(3.5)	7(8.1)	
Availability of training fields	Yes	0(0)	2(3.4)	17(19.8)	19(22.1)	6.838 (0.033)
	No	6(7)	8(9.3)	53(61.6)	67(77.9)	
coach athlete	very good	2(3.4)	4(4.7)	14(16.3)	20(23.2)	60.876

relationship	Good	3(3.4)	3(3.5)	23(26.7)	29(33.7)	(0.000)
	Bad	1(1.2)	3(3.5)	24(27.9)	28(32.6)	
	Very bad	0(0)	0(0)	9(10.5)	9(10.5)	
providing remedial activities	Yes	4(4.7)	5(5.8)	15(17.4)	24(28)	6.181 (0.045)
	No	2(2.3)	5(5.8)	55(64)	62(72.1)	
Involvement of athletes in planning	Yes	0(0)	1(1.2)	14(16.3)	15(17.4)	8.650 (0.013)
	No	6(7)	9(10.2)	56(65.1)	71(82.6)	
payment for athletes	Yes	5(5.8)	7(8.1)	16(18.6)	28(32.6)	25.010 (0.000)
	No	1(1.2)	3(3.5)	54(62.8)	58(67.4)	
Evaluation the plan with athletes	Yes	4(4.7)	6(7)	2(2.3)	12(14)	23.042 (0.000)
	No	2(2.3)	4(4.7)	58(67.4)	64(74.4)	
providing fitness test	Yes	5(5.8)	6(7)	29(33.7)	40(46.5)	32.560 (0.000)
	No	1(1.2)	4(4.7)	41(47.7)	46(53.5)	
Coach's effort to improve athletes fitness	Always	3(3.5)	4(4.7)	19(22.1)	26(30.2)	120.668 (0.000)
	Often	2(2.3)	4(4.7)	12(14)	18(20.9)	
	some times	1(1.2)	2(2.3)	39(45.3)	42(48.8)	

Proportional Odds Model (POM)

In this study ordinal logistic regression is selected for analyzing the athlete performance data using the explanatory variables associated with the dependent variable. In our initial selection of variables, we looked for risk factors that clearly demonstrated in different previous extensive research performed and also for variables significant for bivariate analysis with Pearson chi-square association measure. After these factors were identified, the ordinal logistic regression procedure was used in combination with the

stepwise selection method. This enabled used to select those significant variables, which contribute to athlete performance. Accordingly, training year (duration on the training), number of training days per week, duration of training per day, Availability of training fields, coach athlete relationship, providing remedial activities, Involvement of athletes in planning, payment for athletes, Evaluation the plan with athletes, providing fitness test, Coach's effort to improve athletes fitness, Practice of demonstration by the coach, Availability of training equipment, support from stakeholders are included in the model.

Proportional odds model with logit function was developed for performance of the athlete. To identify the factors that affect performance of the athlete and to estimate their effect, the study fitted proportional odds model. The results of the proportional odds model are given in Table 4. Having fitted proportional odds model, a test procedure[7] was run to see whether the fitting of a proportional odds model is appropriate for the data. Brant's (1990) test procedure produced a significant chi-square value of 142.62 (p-value=0.075) indicating that a parallel lines assumption is fulfilled. The results of Brant tests were shown in the last column of Table 4, which reveals that all the variables were found insignificant.

Table 4: Results of POM using athlete's performance status as three ordered response categories

Co-variable		Regression Coefficient	P-value	Estimated OR	95% CI for OR	Brant test (p-value)
Training year or duration on the training [< 1 year as ref]	1-2 year	-1.703	0.021	0.182	0.10 - 3.143	0.241
	2.1 – 3 year	-1.928	0.000	0.145	0.011 – 4.185	0.261
	3.1-4 year	-4.200	0.001	0.015	0.000 – 2.999	0.120
	>4 year	-10.621	0.035	0.058	0.560 – 0.897	0.110
number of training days per week[< 2 days as ref]	3 days	2.409	0.051	11.125	0.993 – 124.68	0.051
	4 days	2.188	0.000	8.923	0.070 – 114.53	0.377
	>4 days	9.765	0.000	17.407	0.665 – 102.65	0.999
duration of training per	30-59 minute	0.671	0.000	1.957	0.146 – 26.210	0.612

day[< 30 munities]	1-2 hour	1.58	0.000	4.856	0.258 – 91.393	0.291
	>2 hour	-25.676	0.011	0.0007	0.002 – 0.065	0.996
Availability of training field [Yes as ref]	No	-1.569	0.000	0.208	0.008 – 5.666	0.352
Coach athlete relationship[Very good as ref]	Good	-1.226	0.000	0.293	0.021 – 4.180	0.366
	Bad	-4.538	0.000	0.011	0.000 – 0.411	0.065
	Very bad	-3.848	0.000	0.021	0.000 – 2.579	0.116
Providing remedial activities [Yes as ref]	No	1.171	0.382	3.226	0.2331 – 44.63	0.382
Involvement of athletes in planning[Yes as ref]	No	-1.89	0.000	0.151	0.008 – 2.814	0.205
payment for athletes [Yes as ref]	No	-3.026	0.000	0.048	0.000 – 2.914	0.148
Evaluation the plan with athletes [yes as ref]	No	4.691	0.071	10.901	0.671 – 17.720	0.071
providing fitness test [Yes as ref]	No	-1.402	0.000	0.246	0.017 – 3.615	0.307
Coach's effort to improve athletes fitness[always as ref]	Often	30.439	0.990	0.297	-	0.990
	Some times	31.022	0.905	0.166	-	0.990
practice of demonstration by the coach [always as ref]	Sometimes	-1.748	0.000	0.174	0.007 - 4.330	0.286
	Never	-3.359	0.000	0.035	0.001 - 2.292	0.116
Availability of training equip ment [Yes as ref]	No	0.891	0.000	0.437	0.109 - 54.313	0.574
Support from stakeholders [yes as ref]	No	-1.133	0.000	3.105	0.027 – 36.09	0.640

/cut1		22.580		-		-
/cut2		29.404		-		-

Over all brant test of parallel regression assumption: Chi-square = 142.62, p-value =0.075

Goodness-of-fit test of overall model (Likelihood Ratio): Chi-square = 317.92, p-value = 0.000, Pseudo R2 = 0.652

Determinants of Athlete's Performance Status

In POM, around 10 independent variables in the model were found to be significant predictors of the athlete performance. However, variables like providing remedial activities, Evaluation of the plan with athletes, Coach's effort to improve athlete's fitness are not statistically significant. In addition, the result of Brant test (p-value) for each covariate category shows that the value or the effect of the coefficient is constant over the category of the response variable.

The results of POM reveal that training year or duration on the training of the athlete, that are trained between 2.1 to 3 year and 3.1 to 4 years are 0.855 and 0.985 times respectively smaller in performance than those athletes who trained in the project for less than 1 year. Athletes who took the training 3 days, 4 days and greater than 4 days per week are 11.12, 8.92 and 17.41 times respectively higher in performance than those athletes who took the training less than 2 days per week. Those athletes who took 30-59 minutes, 1-2 hour 1.96, 4.86 and 0.001 times respectively higher in performance than those athletes who took the training less than 30 munities per day but those athletes who took the training greater than 2 hour per day are 0.999 times less in performance than athletes trained less than 30 minutes per day.

Availability of training field is the other important variable which has a positive effect on the development of the athlete's performance. In this study different forms of Availability of training field (i.e available (yes) and not available (no)) were tested for investigating their effect on the performance of the athlete. The result showed that athletes who haven't the training field are 0.792 times less in performance than those athletes who have training field.

Coach athlete relationship were important factor in this study, those athletes who have well, bad and very bad relationship with their coach are 0.707, 0.989 and 0.979 times respectively

lower in performance than athletes having very good relationship with their coach. In addition athletes who don't participate in planning with their coach are 0.849 times lower in performance as compare to those athletes who participate. Those athletes who don't get payment in the project are 0.952 times low in performance than athletes who get payment.

The other important variable, which were identified by the POM, were providing fitness test by the coach. Athletes not provide fitness test by their coach are 0.754 times low in performance than athletes provide fitness test by their coach. Athletes sometimes or never made demonstration by their coach are 0.862 and 0.965 times respectively lower in performance than athletes made demonstration by their coach. The last important variables, which were significant in this study, were availability of training equipment and Support from stakeholders. Athletes who did not have training equipment are 0.563 times lower in performance but did not Supported by stakeholders are 3.105 times higher.

DISCUSSIONS

In this study, an attempt has been made to develop a method that can help to identify factors that affect the performance of the athlete. Accordingly, Proportional odds model was fitted.

The POM becomes appropriate model for analyzing the considered data since the p-value of chi-squared Brant test for overall model is insignificant at 5% level of significance indicating proportional odds assumption is appropriate, and almost all (except some) of the considered variables were found significant in the POM. Even though, the proportional odds assumptions for overall model was appropriate by using Brant test for each covariate, we have assessed wither the effect of each slope are constant in all category of the response variables. Moreover, the result shows that the effect of the each slopes are constant in all category of the response variables (i.e low, medium and high performance).

In this study training year (duration on training) was statistically significant on performance of the athletes, as the training year increased the performance of the athlete decrease implies that the training that delivered for the athlete do not bring progression on athletes performance. According to [8] if the training loads are too far apart the athlete's fitness level will keep returning to original levels. Widely spaced loading will produce little or no fitness improvement. So from this we can understand that the athletes were not doing their training based on a regular base or they were missing their training days.

Regarding to training hours per day athletes who trained less than 30 minutes and more than 2 hour per day have less in performance. This result is supported by [8] If the training load is not great enough there is little or no overcompensation and if loading is too great, will cause the athlete to have problems with recovery and he may not return to original levels of fitness. Athletes who got training field and equipment have better performance than those do not get training field and equipment this finding is supported by [9].

Most of the coaches have not any form of training plan. Only few number of coaches were prepared training plan and as we refer their plan the designed plan is not scientifically designed, on the same issue, similar result on study that conducted by [10] stated that most of youth project coaches were not prepared weekly, monthly and annual plan.

Athlete who had better coach athlete relationship had better training performance, when we compare with those did not have good coach athlete relationship. This result is similar with [11]. Identifying the talent of the trainees during athlete's recruitment had great impact on the performance of the athletes. This finding is supported by [12] talent identification is a knowledge based task in which the coach should be capable of applying scientific tests in measuring psychological, physiological, social, and technical abilities when identifying talented athletes with a potential of becoming elite.

Most of the athletes were not motivated for athletics training because they did not get support from family and friends. These supported by [10] parents of the athletes did not support their children's in order to get training in the project.

Considering sport experts ability to support coaches in athletics training, experts have not the ability to support coaches on training issues. Similar with this study, [13] stated the sport organization has not qualified human resource such as qualified office experts, losing education and modern coaching science .In addition to this [10] zone sport office and the regional sports commission does not provide regular technical support.

Conclusions

Generally, in the study we assessed different factors that affect effectiveness of junior athletics projects this factors can be categorized as sport office related factors, coach related factors, athlete related factors, parental related factors, and community related factors. When we compare the impact, those factors sport office related factors have a great impact on athlete's performance, which is followed by coach related factors and thirdly athlete related factors affect athlete's performance.

Regarding to sport office related factors, shortage of training equipment and facilities, non-availability of training fields, absence of reward for best performers in the competitions, lack of capacity building training for coaches and sport experts, lack of supervision and follow up for coaches and athletics projects, shortage of competition opportunities for athletes, giving unequal emphasis for each sports, organizing false report by woreda experts.

Among coach related factors, inability to prepaid peridized and scientific training plan, inability to create awareness for athletes and families about athletics training and its benefits, dearth of providing the training without interruption, lack of providing physical fitness test to assess training effectiveness, lack of providing proper demonstration for athletes, lack of organizing true age portfolio for the athletes, not recruiting the athletes based on talent identification.

Considering athlete related factors lack of motivation on athletics sport, being material driven when they came to raining area. In addition, Stockholders related factors include lack of supporting athletics projects morally and financially are the basic determinant factors that affect the athletics projects.

Declarations

Abbreviation: POM: Proportional Odds Model

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Ethics approval and consent to participate:

This study was conducted in accordance with the Declaration of Helsinki. The research review committee of Woldia University approved this study (wdu/506/12), which was performed in accordance with the guidelines for cross sectional studies involving human participants published by our Institutional Review committee. Written, informed consent was obtained from all participants after they were given a complete explanation of the purpose of the study.

Consent for publication:

Not applicable.

Competing interests: The authors declare that they have no competing interests.

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