Global Scientific JOURNALS

GSJ: Volume 10, Issue 5, May 2022, Online: ISSN 2320-9186
www.globalscientificjournal.com

SOCIOLOGICAL AND ECONOMICAL DETERMINANTS OF ETHIOPIAN LONG AND MIDDLE DISTANCE ATHLETES` SUCCESS

MASSRESHA ERAGO GEBREGIORGIS AND KISHORE KUMAR C.K. (PhD)

1. ABSTRACT

The objective of this study was to assess sociological and psychological determinants of Ethiopian athletes` success in the world long and middle distance running events. The study used mixed methods research designs and questionnaire based survey research method. The researchers have been implemented nonparametric test called Kruskal-Wallis test that alternative test of one way ANOVA. The final result indicated that Ethiopian athletes joined to formal running training with low socioeconomic status because of this, athletes have been faced economic problems during their running training. These effects to conclude that low SES affects athletes running performance positively, that low SES leads to have high performance and then they have been came successful, Finally Ethiopian athletes' have been shown significant economic change on Ethiopian their life and their families` life through international long and middle distance running competition rewards. The main determinants of their success were motivation to overcome economic problems (athletics as a livelihood strategy to get out of poverty), the athletes motivation to alleviate their economic problems and other comparative advantages such as altitudes that living and training at high altitude helped Ethiopian athletes to be successful in the world long and middle distance running.

KEY TERMS:- Success, Economic problem, sociological and economical factors, long distance running, Determinants of success

Key:-

- ***ELMD = Ethiopian long and middle distance***
- ***LMD= long and middle distance running***

SES = socioeconomic status

2. INTRODUCTION

2.1. THE SUCCESS OF ETHIOPIAN ATHLETES

Several research tried to study the success of Ethiopian athletes, some of them were;- [1][2], [3], [4], [5], [6],the success of Ethiopian athletes is related with motivation to achieve economic success and living and training at high altitude considered as the main factors among others, but the researcher have not examined Ethiopian athletes success related factors with evidence of data and then complained the lack of data in Ethiopia. One of the researcher said about the success as a chance for African Americans to gain economic success and recognition in society.[7] [8].

The study done by [9] had been investigated and suggested that Ethiopian athletes genetic and early life phenotypic factors are more dominant than later life environmental factor included training, that study more concentration on the then performance related factor of Israeli athletes and Israeli Ethiopian athletes.

Since the 1960Rome Olympics, ***Ethiopian*** runner who participated in marathon with barefooted athlete victory was the base of Ethiopian long distance running dominancy in the world. The 1960 and 1964 Olympic winner was ***Abebe Bikila*** known as the barefoot king of Ethiopia. Since 1960 Ethiopian runners have been dominated the middle and long-distance events in athletics and have exhibited comparable dominance in international cross-country and road-racing competition.

The studies proposed several factors to explain the extraordinary success of the Ethiopian and Kenyan distance runners, including; Inherited tendency, oxygen consumption, Comparatively a great hemoglobin and hematocrit that the volume of red blood cell to the total volume of blood, good metabolic "economy/efficiency" based on somatotype (describing the human physique in terms of number of traits that related to body shape and composition) and lower limb characteristics, skeletal-muscle-fiber composition and oxidative enzyme profile, Traditional Ethiopian and Kenyan diet, their living and training altitude at high and athletes motivation to achieve economic success were considered as the factors of Ethiopian and Kenyan athletes success. (Dr.S.Jayaraman, 2016),[3]

Some of these factors have been examined objectively in the laboratory and failed, where as others have been evaluated from an observational perspective. In all cases, studies have failed to turn up convincing evidence that Ethiopians are inclined to success. In general, it appears that Kenyan and Ethiopian distance-running success is not based on a unique genetic or physiological characteristic.

There is no special genetic favor for their athletics performance, as the above research said may have some socioeconomic status of Ethiopian athletes and their motivation to solve economic problem affects their athletics performance.[10] [11], [2]. As indicated on the above several complex factors those affects Ethiopian athletes performance. The researcher was motivated to examine some of the above factors with scientific methods to get and show relatively clear data for other researchers and concerned bodies. The researcher intention was to correlate Ethiopian athletes' motivation to achieve their economic problems. May other research result was not perfectly similar with this research result.

This study result shown us the challenges to get the necessary information of Ethiopian athletes' success, but it concluded the athletes` strong desire to overcome economic problems and their motivation to achieve economic problems as a dominant factor among others in Ethiopia. To give clue about the above research that the current Ethiopian condition is suitable to conduct research.

The studies[12] have linked lower SES with higher rates with physical fitness measures. Higher SES may have a direct positive effect on health by providing individuals with health-related knowledge, skills, and due to differences in the definitions and measurement of SES and physical fitness, but they also could be related to differences in cultural and social environments. Athletes coming from the low SES will have low level of athletics performance, they will have low skill level and even low health status and academic performance ,[13][14][15][16][17][18][19] but the reality is different in Ethiopia and this study results shown us completely opposite results of the above researchers.

The research results of [20] [21]the social impacts of sport that the most convincing evidence of sport concerns health benefits, which prevent or reduce physical and mental health problems and save on health care costs. The positive health benefits from sport are more substantial. In terms of the social capital impacts from sport, there is evidence that sport is a type of 'social bond, i.e. contributing 'bonding' capital by increasing social connectedness and a sense of belonging. Sport and exercise have positive impact on educational outcomes physical development and psychological well being. Through psychological benefits such as enhanced self-esteem and self-confidence, and cognitive benefits such as concentration and thinking skills, Many of the links between sport and different social impacts are common, including greater physical competencies, better cognitive skills, better social skills, trust and reciprocity, and identification with social values

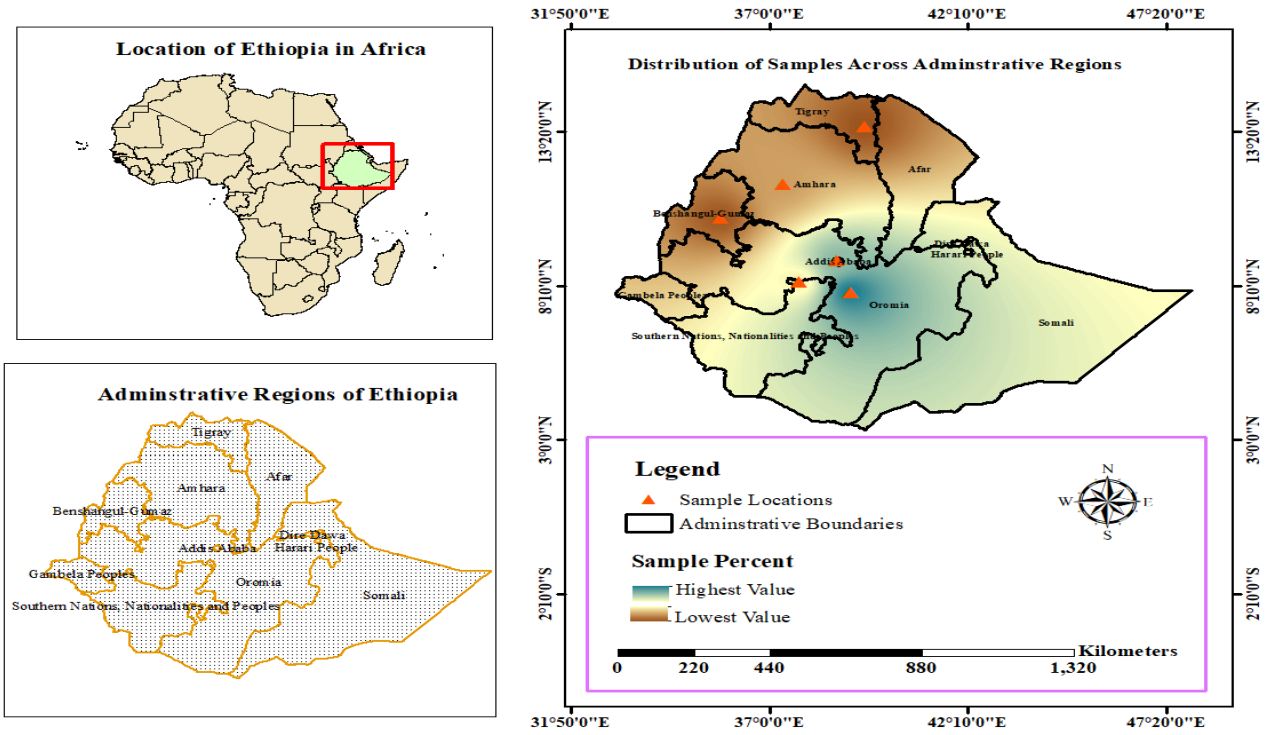
OBJECTIVE

The purpose of this study is to investigate the sociological and economical determinants of Ethiopian athletes` success with critical investigation of Ethiopian athletes` to investigate low socio-economic status effects on Ethiopian athletes running performance, to investigate Ethiopian long and middle distance runners socioeconomic status when they joined formal running training, to assess to what extent athletics sport has significant economic change on Ethiopian athletes' life and their families and to evaluate ELMD runners` have been faced economic problem, when they were join long distance training were the main objectives of this study.

3. MATTERIALS AND METHOD

3.1.LOCATION OF ETHIOPIA

Ethiopia is located in the horn of Africa. It is bordered by Eretria to the north, Djibouti and Somalia to the east, Sudan and South Sudan to the west, and Kenya to the south. Ethiopia has a high central plateau that varies from 1,290 to 3,500 m (4,232 to 9,843 ft) above sea level, with the highest mountain reaching 4,533 m (14,872 ft). Elevation is generally highest just before the point of descent to the Great Rift Valley, which splits the plateau diagonally. Adapted from Wikipedia location of Ethiopia



3.2.**RESEARCH DESIGN**

The study used mixed methods research designs that a combination quantitative and qualitative research methodology is focused on collecting, analyzing and mixing both quantitative and qualitative data in a single study or series of studies. The quantitative data was analyzed through nonparametric test analyzed method more specifically Kruskal-Wallis test analysis method of nonparametric test method, because of the use of nonparametric test method was the data distribution has not been normal data distribution and unable to used parametric test method.

SAMPLE SIZE AND POPULATION

The study population was 1500 athletics sport families and as a target sample 83 well known athletes, 83 coaches, sport commission officials, athletics federation employees, referees, different universities sport science department instructors totally 166 target sample population were selected with purposive sampling technique. The researchers have been used both primary and secondary sources of data. The questionnaire was used as instrument distributed a 5-point LIKERT SCALE from strongly disagree to strongly agree with assigned number 1-5. to collect the necessary data.

3.3.STATISTICAL ANALYSIS

Kruskal-Wallis test is the nonparametric alternative test method to the one way ANOVA test, to allow the comparison of more than two independent groups with one dependent group. It used to determine the presence of statistical significance difference between two independent groups of respondent. The use of nonparametric test based on the data distribution, which was not normal data distribution. Statistical significance was set at 0.05 and based on the Chi-Square result related with the critical table value of k-1 degree of freedom and sig level of 0.05. Statistical analyses were performed using the IBM SPSS Statistics for Windows, Version 20.0. In addition to this we have been conducted independent hypothesis tests of Kruskal-Wallis to retain the null hypothesis or reject it. The independent sample groups were athletes and coaches responses to one dependent variable that related with sociological and economical determinants of Ethiopian athletes` success.

4. RESULT

The total sample of this study were 166 respondents who were grouped in to two groups, in group one there are 83 athletes who were participated on high level international long distance athletics competition experienced athletes and on the second sample group 83 sport professionals who were athletes` personal coaches, Olympic team coaches, national team coaches, sport

commission officials, athletics federation professionals athletics sport referees` and university instructors. On this result part 4 items have been analyzed.

TABLE 1 ITEMS AND ITS CODE

NO.	ITEM CODE	ITEMS
1	A	Low socio-economic status has positive effects on Ethiopian athletes running performance
2	B	When Ethiopian long and middle distance runners join to formal running training with low socioeconomic status
3	C	Athletics sport has significant economic change on Ethiopian athletes' life and their families
4	D	ELMD running athletes have been faced economic problem, when they were join long distance training

The items coded alphabetical order A to D. The result of Kruskal-Wallis H test based on the data analysis table below that interpreted as if obtained H value is less than the value of the table results on critical table of (X^2) then there is no significance difference between the groups, if obtained value of H equal or greater than that value of (X^2) on the table, then there is significance difference between the group. The descriptive statistical data importance used for interprets the data to conclude the item response what looks like.

DESCRIPTIVE STATISTICS

TEST		A	B	C	D
N	Valid	166	166	166	166
	Missing	0	0	0	0
Mean		3.82	3.70	3.99	4.17
Std. Deviation		1.217	1.076	1.087	1.019
% of the respondents response as agree/ strongly agree		83.7%	81.4%	86.1%	89.1%

The data analyzed result on the above part shown us sociological and economical determinants of Ethiopian athletes' success on long and middle distance running competition. To make it brief and précised Ethiopian long and middle distance runners' athletics participation success on different world champion, Olympic games and other competition related item response of the

two respondent group result of sociological and economical determinants of the athletes' success on long and middle distance running competition descriptive result based on the two groups of respondent mean $\boldsymbol{calculated\ as}$ $\mathbf{M \pm SD}$ Mean plus or mines standard deviation calculated all items based on their code and described their agreement percentage as follows;

Item **"A"** = 3.82 ± 1.217 and 83.7% of the respondents were agreed with Ethiopian athletes low socioeconomic status leads to have good running performance.

Item**"B"** $M \pm SD = 3.70 \pm 1.076$ and 81.4% of the respondents were agreed with Ethiopian athletes when they joined formal athletics training with low socioeconomic status.

Item **"C"** = $M \pm SD = 3.99 \pm 1.087$, and 86.1% of the respondents were agreed with Ethiopian athletes have been faced economic problem when they joined formal athletics training.

Item **"D"** $M \pm SD = 4.17 \pm 1.019$, and 89.1% of the respondents were agreed with athletics sport has significant economic change on Ethiopian athletes' life and their families.

TABLE 2, HYPOTHESIS TEST SUMMARY

TEST	A	B	C	D
Chi-Square	1.200	2.501	3.720	.006
Df	1	1	1	1
Asymp. Sig.	.273	.114	.054	.941

NB.

- **This test result** $\boldsymbol{if\ X^2 > H}$, there is no significance difference between the two respondent groups or the two independent groups that leads to accepting the null hypothesis.
- $\boldsymbol{If\ X^2 \leq H}$ there is significance difference and rejecting the null hypothesis and using alternative hypothesis,
- $\boldsymbol{X^2}$ is critical table value and $\boldsymbol{H}$ is Chi-Square result of ***Kruskal-Wallis test***

A. ITEM **"A"** Based on comparing the H result with the table X^2 result and then the above table results of Kruskal Wallis test with 1 degree of freedom and 0.05 standard error of 0.273, the H value is 1.200 and the table value of X^2 is 3.8415. Based on this result the H value less than that of X^2 value, that X^2>H = 3.8415>1.200.This means that low socio-economic status has positive effects on Ethiopian athletes running performance indicated that there were no significance difference between the two respondent groups on the statements of low socio-economic status has positive effects on Ethiopian athletes running performance.

B. ITEM **"B"** related statement the Wallis test with 1df (degree of freedom) and with 0.05 significance level = 0.114 the ***H*** value is 2.501 and the table value of $X^2$is 3.8415. Based on this result the H value greater than that of $\boldsymbol{X^2 > H}$=3.8415> 2.501. The above statement is accepted as it was, When Ethiopian long and middle distance runners join to formal running training with low socioeconomic status.

C. ITEM "C" related statement the Wallis test with 1df (degree of freedom) and with 0.05 significance level = 0.054 the H value is 3.720 and the table value of X^2 is 3.8415. Based on this result the H value greater than that of X^2 > H=3.8415> 3.720. Based on this result the H value less than that of X^2> H = 3.8415> 3.720. The above statement is accepted as it was, that athletics sport has significant economic change on Ethiopian athletes' life and their families.

D. ITEM "D" Wallis test with 1df (degree of freedom) and with 0.05 significance level = 0.941, the H value is 0.006 and the table value of X^2 is 3.8415. Based on this result the H value greater than that of X^2 < H=3.8415 >0.006. The above statement is leads to accept the null hypothesis of ELMD running athletes have been faced economic problem, when they were join long distance training, sport professionals and athletes haven the same belief about ELMD running athletes have been faced economic problem, when they were join long distance training.

5. DISCUSSION

5.1.General

The character of long distance running events are one of the most stressful activities in which a human being can participate voluntarily due to their intensity, duration, and potentially adverse weather conditions, and which require specific physical preparation and tremendous physical and psychological effort that leads to the athletes success.

The sociological and economical statuses are determinants of Ethiopian athletes' success on long and middle distance running. Currently Ethiopian athletes at the top with long and middle distance running that held on Belgrade in Serbia 18th Indoor world athletics championship, Ethiopia as a world number one with record and America was the second country. These Ethiopian athletes results were not the result of modern training and infrastructure effects, but the main determinant were their state of socioeconomic determinants of Ethiopian athletes. This article have been critically investigated the socioeconomic determinants of Ethiopian long and middle distance athletes success with direct discussion and responses of Ethiopian athletes, their coaches and other concerned bodies. This study result compiled based on the data organization

parts of the study. In this study Ethiopian athletes' socioeconomic determinants of success on international athletics competitions as well as Olympic level. With this long and middle distance running competition participation Ethiopian athletes would have improved their economic performance.

LOW SOCIO-ECONOMIC STATUS EFFECTS ON PERFORMANCE

The question forwarded to the two respondent groups was to investigate the effect of low socio-economic status on Ethiopian athletes running performance and economic problems can motivate to get good running performance in Ethiopia, either positive or negative effects.

Several research result related with socioeconomic status of athletics performance and results indicated that there were positive correlation that socioeconomic status increased as well as the performance increased and an athletes` socioeconomic status decreased as well as their performance decreased,[13][22][23][24][25][14] but in Ethiopian athletes this is inversely proportional. This study result indicated that the respondent have similar attitude that low socioeconomic status of Ethiopian athletes have positive effect on their running performance that the description shown us M±SD= 3.82 ± 1.217 and 83.7% of the respondents were agreed with Ethiopian athletes low socioeconomic status leads to have good running performance. And then based on the Kruskal-Wallis test result the H value less than that of X^2 value, that X^2>H = 3.8415>1.200.This means that low socio-economic status has positive effects on Ethiopian athletes running performance indicated that there were no significance difference between the two respondent groups on the statements of low socio-economic status has positive effects on Ethiopian athletes running performance. The nature of long distance running events are one of the most stressful activities in which a human being can participate voluntarily due to their intensity, duration, and potentially adverse weather conditions, and which require specific physical preparation and tremendous sociological and psychological effort that leads to the athletes success was related with this item result conclusion, because long distance running training with comfortable condition is not convenience.

The study result had shown us that economic problem of Ethiopian athletes' leads to highly motivate to gate good running performance. Success comes with adversity and you will not come to success without difficulty. Ethiopian athletes are well known for overcoming adversity and they have been passing through difficult training times and then their results are excellent all over the world. This condition related with their economic status that to overcome their economic problems through long distance running and they have been motivated to participate on high level training and they have confronting different athletics training related challenges.

Finally economic problems motivated Ethiopian athletes to get good running performance and positive effect on Ethiopian long and middle distance athletes running success.

ETHIOPIAN ATHLETES JOIN FORMAL TRAINING

When Ethiopian long and middle distance running athletes join to formal running training with low socioeconomic status related item responses were positive with both group of respondents and then we can conclude about Ethiopian athletes when they were joined formal athletics training with low socioeconomic status. The descriptive statistical data tell us the respondent mean $M \pm SD = 3.70 \pm 1.076$ and 81.4% of the respondents were agreed with Ethiopian athletes when they joined formal athletics training with low socioeconomic status and the Kruskal-Wallis test with 1df (degree of freedom) and with 0.05 significance level = 0.114 the H value is 2.501 and the table value of $X^2$is 3.8415 and then the H value greater than that of X^2> H=3.8415> 2.501 the H value less than that of X^2 the statement is accepted as it was, because of there have no significance difference between the respondent group and test result support to accept the null hypothesis that when Ethiopian long and middle distance runners join to formal running training with low socioeconomic status.

ETHIOPIAN ATHLETES FACED ECONOMIC PROBLEMS

Ethiopian athletes have been faced economic problems when joined formal running training related statement = $M \pm SD = 3.99 \pm 1.087$, and 86.1% of the respondents were agreed with Ethiopian athletes have been faced economic problem when they joined formal athletics training. the Wallis test with 1df (degree of freedom) and with 0.05 significance level = 0.114 the ***H*** value is 2.501 and the table value of $X^2$is 3.8415. Based on this result the H value greater than that of $\boldsymbol{X^2} >$ ***H***=3.8415> 2.501. The above statement is accepted as it was, When Ethiopian long and middle distance runners join to formal running training with low socioeconomic status.

SIGNIFICANCE ECONOMIC CHANGE ON THEIR AND FAMILIES` LIFE

The statement forwarded to the respondent group to investigate Ethiopian athletes' significant economic change on Ethiopian athletes' life and their families. The result statistically insignificant results were identified between the two study groups between the two respondent group attitude have not significance difference that long and middle distance running` as well as long and middle distance runner athletes have significant economic change on their and their families. The descriptive statistical result shown **"** $M \pm SD = 4.17 \pm 1.019$, and 89.1% of the respondents were agreed with athletics sport has significant economic change on Ethiopian athletes' life and their families` life. The Kruskal-Wallis test with 1df (degree of freedom) and with 0.05 significance level = 0.054 the H value is 3.720 and the table value of X^2 is 3.8415. The

H value greater than that of X^2 > H=3.8415> 3.720. The test result leads to accept the stated item that Ethiopian long and middle distance runners have been made significance economical change on their life as well as their families' life. Ethiopian athletes families were the primary beneficial from Ethiopian athletes and their life totally changed, their life style and living standard were changed through athletes' reward of long and middle distance running rewards. This idea supported by different study results that forwarded Ethiopian athletes motivation to achieve economic success[11],[26]

CONCLUSION

Researchers are nevertheless to confirm a genetic or physiological advantage in being a middle or long distance runner of East African origin, and it is most likely that the reasons for their success are many[27].

Based on this study result of Ethiopian long and middle distance running runners determinants of success were several, among those; Ethiopian long and middle distance running athletes joined to formal running training with low socioeconomic status because of this Ethiopian athletes have been faced economic problems during their running training. These effects to conclude that low socioeconomic status affects Ethiopian long and middle distance running athletes running performance positively, that low SES leads to have high performance, because they pass through the above challenges they have been came successful, athletes` motivation to overcome economic problems (athletics as a livelihood strategy to get out of poverty), the athletes motivation to alleviate their economic problems and to achieve economic goal, [28]. Finally Ethiopian athletes' have been shown significant economic change on Ethiopian athletes' life and their families through international long and middle distance running competition rewards. The other the main factor of Ethiopian athletes' determinants of their success was their role model effect that has been solved economic problems through long and middle distance running competition. This was considered as the social and economical determinants of Ethiopian athletes success, because they have social factors to join long distance running that was running competition reward that changed other Ethiopian long and middle distance running runners life economically and they have role models who were overcame economic problems through long and middle distance running participation.

FUTURE OUTLOOKS

Finally I would like to recommend based on sociological and economical determinants of Ethiopian long distance running athletes success was the main objectives of this study. The critical investigation of this study had been find out the above results on the result part and recommended below.

The nature of long and middle distance running need tough and challenge full physical, social, economical and psychological involvement, hard working habit, strong physical and psychological endurance or stamina. Wonderful Ethiopian athletes' dominancy in the world was the result of confronting the above economical, social, physical, psychological, environmental and skill related determinants. This study have been investigated the following basic questionable issues, but this by itself is not enough and needs additional investigation with scientific method. And a researchers who want to know more about the success of Ethiopian long and middle distance athletes should consider and investigate the following unique characteristics of Ethiopian athletes that:-

Why Ethiopian athletes participating on long and middle distance running events? Why Ethiopian athletes shifted their citizenship? What looks like their level of socioeconomic status? Why the other developed countries athletes participating on long distance running event? What looks like developed countries athletes' socioeconomic status? And other important questions should be treated with scientific method to get the real reason of the success and dominancy of Ethiopian long distance runners.

6. BIBLOGRAPHY

[1] R. L. Wilber and Y. P. Pitsiladis, "Kenyan and Ethiopian distance runners: what makes them so good?," *Int. J. Sports Physiol. Perform.*, vol. 7, no. 2, pp. 92–102, 2012.

[2] C. A. B. de Lira *et al.*, "Genetic aspects of athletic performance: the African runners phenomenon," *Open Access J. Sport. Med.*, p. 123, 2014, doi: 10.2147/oajsm.s61361.

[3] D. Chundu Venkata Rao, "Journal of Recent Research and Applied Studies," *Power*, vol. 1, no. 6, p. 0.079, 2014.

[4] R. A. Scott, E. Georgiades, R. H. Wilson, W. H. Goodwin, B. Wolde, and Y. P. Pitsiladis, "Demographic characteristics of elite Ethiopian endurance runners," *Med. Sci. Sports Exerc.*, vol. 35, no. 10, pp. 1727–1732, 2003, doi: 10.1249/01.MSS.0000089335.85254.89.

[5] B. Hamilton, “East African running dominance : what is behind it ?,” pp. 391–394, 2000.

[6] R. Résultats *et al.*, “Results Results Resultados / Résultats,” pp. 11–12, 2016.

[7] L. Harrison, L. Azzarito, and J. Burden, “Perceptions of athletic superiority: A view from the other side,” *Race Ethn. Educ.*, vol. 7, no. 2, pp. 149–166, 2004, doi: 10.1080/1361332042000234277.

[8] V. L. P. Clark, C. A. Huddleston-Casas, S. L. Churchill, D. O. N. Green, and A. L. Garrett, “Mixed methods approaches in family science research,” *J. Fam. Issues*, vol. 29, no. 11, pp. 1543–1566, 2008, doi: 10.1177/0192513X08318251.

[9] R. R. Wishnizer, O. Inbar, E. Klinman, and G. Fink, “Physiological Differences between Ethiopian and Caucasian Distance Runners and Their Effects on 10 km Running Performance,” *Adv. Phys. Educ.*, vol. 03, no. 03, pp. 136–144, 2013, doi: 10.4236/ape.2013.33023.

[10] A. Mwisukha, L. Kanyiba, and V. Onywera, “The gap between the management and success of elite middle and long distance runners in Kenya,” *African J. Phys. Heal. Educ.*, vol. Recreation, no. 21, pp. 586–595, 2015.

[11] R. L. Wilber and Y. P. Ptsiladis, “Kenyan and ethipian distance runners: why are they so good?,” *Int. J. Sports Physiol. Perform.*, vol. 2012, no. 7, p. 11, 2012.

[12] X. Zhang and A. P. Martinez-Donate, “Socioeconomic Status and Youth Physical Fitness: Evidence From an Upper-Middle Income Country,” *J. Pediatr.*, vol. 185, pp. 14–16, 2017, doi: 10.1016/j.jpeds.2017.02.001.

[13] C. Marcen, F. Gimeno, C. Gómez, A. Sáenz, and H. Gutiérreza, “Socioeconomic Status, Parental Support, Motivation and Self-confidence in Youth Competitive Sport,” *Procedia - Soc. Behav. Sci.*, vol. 82, 2013, doi: 10.1016/j.sbspro.2013.06.342.

[14] N. A. Jayanthi, D. B. Holt, C. R. LaBella, and L. R. Dugas, “Socioeconomic Factors for Sports Specialization and Injury in Youth Athletes,” *Sports Health*, vol. 10, no. 4, pp. 303–310, 2018, doi: 10.1177/1941738118778510.

[15] B. D. Kern, K. C. Graber, S. Shen, C. H. Hillman, and G. McLoughlin, “Association of School-Based Physical Activity Opportunities, Socioeconomic Status, and Third-Grade Reading,” *J. Sch. Health*, vol. 88, no. 1, pp. 34–43, 2018, doi: 10.1111/josh.12581.

[16] D. J. Debnath and R. Kakkar, “Modified bg prasad socio-economic classification, updated – 2020,” *Indian J. Community Heal.*, vol. 32, no. 1, pp. 124–125, 2020, doi: 10.47203/ijch.2020.v32i01.024.

[17] M. A. Elmagd *et al.*, “The effect of socio-economic status on the effective students’

participation in physical activity: A cross sectional study from Ras Alkhaimah Medical and Health Sciences University-UAE," *Int. J. Phys. Educ. Sport. Heal. IJPESH*, vol. 369, no. 32, pp. 151–155, 2016, [Online]. Available: www.kheljournal.com.

[18] J. Dollman and N. R. Lewis, "Interactions of socioeconomic position with psychosocial and environmental correlates of children's physical activity: An observational study of South Australian families," *Int. J. Behav. Nutr. Phys. Act.*, vol. 6, pp. 1–7, 2009, doi: 10.1186/1479-5868-6-56.

[19] R. M. Eime, M. J. Charity, J. T. Harvey, and W. R. Payne, "Participation in sport and physical activity: Associations with socio-economic status and geographical remoteness Health behavior, health promotion and society," *BMC Public Health*, vol. 15, no. 1, pp. 1–12, 2015, doi: 10.1186/s12889-015-1796-0.

[20] A. Jiménez Gutiérrez *et al.*, "Termómetro del ecosistema del deporte en España," *Soc. Impacts Engagem. with Cult. Sport. Sheff. Hallam Univ.*, no. March, pp. 1–136, 2015.

[21] R. Di, D. Ed, and E. Dello, "ECONOMIC DETERMINANTS OF SPORT PARTICIPATION IN POLAND by," vol. VI, pp. 518–537, 2010.

[22] M. M. Adkins, M. R. Bice, D. Dinkel, and J. P. Rech, "Leveling the Playing Field: Assessment of Gross Motor Skills in Low Socioeconomic Children to their Higher Socioeconomic Counterparts," *Int. J. Kinesiol. Sport. Sci.*, vol. 5, no. 3, p. 28, 2017, doi: 10.7575/aiac.ijkss.v.5n.3p.28.

[23] D. J. Pavón *et al.*, "Socioeconomic status influences physical fitness in European adolescents independently of body fat and physical activity: The Helena study," *Nutr. Hosp.*, vol. 25, no. 2, pp. 311–316, 2010, doi: 10.3305/nh.2010.25.2.4596.

[24] J. Wang and L. Geng, "Effects of socioeconomic status on physical and psychological health: Lifestyle as a mediator," *Int. J. Environ. Res. Public Health*, vol. 16, no. 2, 2019, doi: 10.3390/ijerph16020281.

[25] M. Thuany, B. Knechtle, T. Rosemann, and M. B. Almeida, "Running around the Country : An Analysis of the Running Phenomenon among Brazilian Runners," 2021.

[26] C. A. B. de Lira *et al.*, "Genetic aspects of athletic performance: the African runners phenomenon," *Open Access J. Sport. Med.*, vol. 4, no. 1, p. 123, 2014, doi: 10.2147/oajsm.s61361.

[27] R. L. Wilber and Y. P. Pitsiladis, "Kenyan and Ethiopian Distance Runners : What Makes Them So Good ? Kenyan and Ethiopian Distance Runners : What Makes Them So Good ?," no. January, 2015, doi: 10.1123/ijspp.7.2.92.

[28] Z. B. TOLA, “Long Distance Running in Ethiopian Athletes: a Search for Optimal Altitude Training.,” no. August, pp. 78–118, 2018.

[29] W. Revelle and E. J. Michaels, “The theory of achievement motivation revisited: The implications of inertial tendencies,” *Psychol. Rev.*, vol. 83, no. 5, pp. 394–404, 1976, doi: 10.1037/0033-295X.83.5.394.

[30] J. Singh, “Socioeconomic Status Effect on Sport Performance of Non Achiever and Achiever Shooters .,” vol. 7, no. 3, pp. 59–65, 2017.

[31] R. Sharma, “Effect of socioeconomic status on sport performance of national level junior weightlifters,” *Int. J. Appl. Res.*, vol. 1, no. 5, pp. 212–214, 2015.