# A study on the positive impact of physical education on children's mental health

#### Peilin Niu<sup>1</sup>

#### **Abstract**

Everyone's health is highly important. Dealing with health issues is just as important as dealing with financial ones. Any country's economic survival is totally based on its own economic strategy. The primary purpose of research on the relationship between exercise and fitness, as well as its influence on economic survival, is to help us understand the value and importance of exercise and physical fitness in our lives. It is hard to refute the benefits of exercise and physical activity on one's health. The study of differences in physical fitness and activity between men and women. The independent factors in this study include exercise and physical fitness, while the dependent variable is economic survival. The data was analysed using AMOS 26v. Because there were three hypothesis statements in this research, the findings showed that the variables had a positive and significant link.

**Keywords:** Exercise, Physical Fitness, Economic Survival, Gender Discrimination, Physical Activities, Health Issues, Fitness and Lifestyle.

# Introduction

Exercise and physical activity are two essential words that are closely connected. The sole difference between exercise and physical activity is that exercise is a sequence of motions that are planned, whereas physical activity is just the movement of bodily parts without any thought. Moving your body parts and bones to complete certain motions is referred to as exercise. Exercise, like physical activity, aids in the removal of extra fat from the body. Exercise is a critical component of living a healthy lifestyle. Exercise can assist to cure health problems such as metabolic disorders, heart disease, and obesity. Exercise improves our physical and mental fitness and allows us to live a healthier lifestyle (Kariyawasam et al., 2019). Obesity and other health problems are caused by a lack of physical activity and exercise. A person who is physically active will never get fat. Any individual's mental health is linked to his or her physical fitness; if a person is physically active and healthy, his or her mental health will be good. In addition, today's society requires mental and physical wellness, which may be achieved via exercise. Dealing with health difficulties is just as vital as dealing with economic survival. The economic existence of every country is solely dependent on its own economic technique. A country's economic situation is heavily influenced by its citizens' health. Any health-related issue has a direct impact on the country's economy. The term survival denotes that health is the most important factor in maintaining a stable economy, and that any disruption in the health-care

system has a direct impact on the whole economy. Any country's health-care system should be excellent in order to deal with economic survival (Afshar et al., 2021). In every sphere of society, the country with a higher economic survival rate outperforms the others. A better economy entails better administration of all aspects of the country, particularly the health-care sector. Every country's economy is its backbone, and its development entails the development of the whole economic system (Htut et al., 2018). Economic survival is also intimately linked to health and fitness. When a country's health is in jeopardy, its economic stability is jeopardised. Any pandemic has an impact on the global economy. To further appreciate the economic impact of health, we may look at the case of Covid. Every country in the globe is suffering economic issues at this moment. The obligations on the health care department and hospitals have risen as a result of the covid-19, putting strain on the economy to meet the needs (Oketch et al., 2021). Many large governments throughout the world have provided macroeconomic assistance to deal with the current economic crisis. The only way to ensure the economy's survival in the face of health difficulties is to devise a viable economic strategy to deal with the consequences of any pandemic's health concerns. Policymakers in the country should concentrate more on developing a feasible economic programme to address the issues that create economic disruption. Weight stigma is especially prevalent among school-aged adolescents. People adopt a bad attitude as a result of the stigma of being overweight. People who are overweight or

115

<sup>&</sup>lt;sup>1</sup> School of Education science, Yulin Normal College , Yulin Guangxi, 537000, China

<sup>\*</sup>Corresponding Author's Email: 18269216799niu@sina.com

underweight are often shunned in many cultures. In many communities, the weight stigma causes people to face a slew of issues, including being overlooked for jobs and other opportunities. Both men and women are affected by the weight stigma. People suffer from depression and other mental illnesses as a result of this stigma. In schools, many kids are tormented because of their weight (Müller et al., 2021). Bullying by other students toward overweight or underweight kids often leads to mental sadness among the pupils. Bullying by other pupils also causes many students to lose their confidence. Bullying and harassment of people of all genders because of their weight is fairly widespread. Weight stigma also generates a slew of issues for people, including financial difficulties. Stopping others from doing this is the only way to avoid gender discrimination and weight bullying. People who are suffering from weight stigma should also try to focus on their fitness. Exercise and physical fitness are the only things that can assist these folks overcome their health and mental issues. Exercise has now been scientifically shown to assist people overcome stress and despair. Physical activity and exercise help to reduce stress and anxiety. A person's lost confidence and economic stability can be restored as a result of strong physical and mental health(Shidong et al., 2021).

The study of the link between exercise and fitness, as well as its impact on economic survival, has as its major goal to help us comprehend the value and need of exercise and physical fitness in our life. It is impossible to deny the health advantages of exercise and physical activity. Everyone's health is extremely vital in their lives. Higher mental and physical health imply better mental and physical stability. It is critical to give people with a basic understanding of exercise and physical activity in order to help them overcome health problems (Qian et al., 2020). People will be more likely to be healthy and active if they have a thorough understanding of exercise and the benefits of physical activity. Furthermore, economic stability is linked to a country's health department, therefore by increasing the country's health measures, we may attain economic stability (Heyong et al., 2021). Furthermore, any country's development and progress are only feasible if we disregard and conquer all stigmas, whether they are connected to weight or gender. If a country wishes to be economically secure, no gender discrimination is allowed. A country that is economically stable avoids all conventions and stigmas and concentrates solely on the intended goal. The major question now is how we might use exercise and physical activity to help us overcome our health problems. Also, how can we cope with issues such as economic survival? Also, one of the most important questions is how to overcome numerous stigmas associated with weight and gender discrimination. Also, how can economic stability be attained by preventing gender discrimination through exercise and physical activity? And how, with the help of a competent economic management system and programme, we may overcome the health concerns.(Boni, 2019)

#### Literature Review

Yaprak and Kucukkubas investigated the link between economic survival, physical fitness, and exercise using a comparative gender analysis(Yaprak & Küçükkubaş, 2020).

Data was obtained for this purpose from two groups with diverse genders, ages, weights, heights, and physical activities. Different parameters were constructed for this purpose in order to analyse the gender difference, and it was discovered that there was not much of a meaningful difference in all parameters for both genders. For the parameter dynamic balance, just a slight change has been noticed. Furthermore, Siani & Marley discovered that an individual's health and physical fitness are directly related to their economic survival(Siani & Marley, 2021). Any country's economic sustainability may be maintained by maintaining high health and physical fitness. Exercising, on the other hand, has a direct relationship with physical fitness. Genç & Cierci looked into the training exercises for physical fitness in a variety of fields, including army training, medical training, and so on.(Genç & Ciğerci, 2020) According to the author, one of God's primary benefits is physical health. Everyone may do well in physical activities if their mind and body are in good shape. Furthermore, according to the WHO, health is a holistic state of physiological, emotional, social, and physical wellbeing, rather than merely the absence of illness or impairment. Since many years, society has been ageing at an increasing rate, and many nations have been in the late stages of their economic development (Tiwari). Due to rapid ageing, every physical system endures substantial physical changes, including differences in muscle function, the pulmonary system, skeletal system, sensory system, cardiovascular system, and nervous system. As a result, many additional diseases like as hypertension, fitness infections, arthritis, and dementia develop, and many people are unable to execute their tasks effectively, which has a direct impact on the country's economic viability (DALYAN et al., 2021; Dhasal & Thakur, 2019)

Apart from that, Rutkowski et al., used the SFT senior fitness test to assess physical fitness in healthy people in this study(Rutkowski et al., 2019). The sample data was gathered from a variety of training sessions. This study

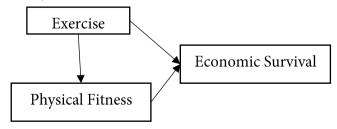
looked at 20 healthy females and 12 healthy males between the ages of 19 and 25, and the researcher looked at the training sessions and SFT to look at physical fitness. It was discovered that exercise training has significant positive effects on PF physical fitness, which has a direct impact on economic survival. Furthermore, Mozolev et al, examined physical activities, exercise, and fitness with a comparative examination of gender discrimination, and found that exercise increased individuals' stamina, regardless of gender(Mozolev et al., 2020). Furthermore, according to Somka et al., (2018), economic sustainability is strongly linked to health difficulties, as "a healthy body has a sound mind" fitness is a critical aspect for economic survival (Boni, 2019).

While Daulatabad, Kamble, Berad, and Kate investigate the benefits of sports and PA physical activities in terms of health, youthful development, economic survival, and individual well-being.(Daulatabad et al., 2020) It was discovered that an efficient and healthy body is required for the biological system of the human body to function effectively. When compared to healthy intellectual people, unhealthy persons with a chubby physique do not conduct things actively. Fatness and physical fitness interact to influence intellectual ability, which have been linked to adolescent and child economic backgrounds. As a result, understanding the psychological ramifications of fat mass localisation and fitness components was crucial (Hernández-Jaña et al., 2021). According to AHN, OKUN, & APAYDIN, a healthy body allows individuals to engage in leisurely physical activities. As a result, muscular strength, organic system growth, stamina, and physical fitness play a significant part in exercising, yoga, and other physical activities, which in turn assesses the ability to undertake physical activities.

Furthermore, de Melo et al, investigated whether differences in physical fitness variables between different age groups of primary and secondary school students can be attributed to their educational and home environments, active participation in PA, food habits, daily life yoga exercise, and students' anthropometrical structures.(de Melo et al., 2018) Kids who practise yoga on a regular basis at home may do better at school than students who do not practise yoga on a daily basis (Qian et al., 2020). According to Barsasella et al, there was a critical need to develop a daily fitness training system for students in universities and schools.(Barsasella et al., 2021) Students will serve actively for their nation, which will benefit the country's economic sustainability, just as they would for a healthy body. Tourism, according to Huang, Lei, Xu, Liu, and Yu, is an important approach to refresh your mind and body. Tourism has a direct relationship with students' emotional, mental, physical, and mental health.(Huang et al., 2020) Recreational hiking, change of scenery, and sporting activities at various recreational locations all play a significant part in their physical fitness. and the country's economic development Furthermore, Sattler, Deane, Tapsell, and Kelly investigated the impact of exercise and physical fitness on a country's economic development during epidemics(Sattler et al., 2018). According to research, the most recent pandemic, COVID-19, has caused widespread health problems and has had a direct impact on every country's economy. This was the clearest example of the link between health, fitness, and the economy. While Kolijn (2013) claimed that appropriate economic management, health care systems, consistent exercise, adequate yoga courses, and the intake of nutritious food are all necessary for economic survival(Dendas, 2010).

# Methodology

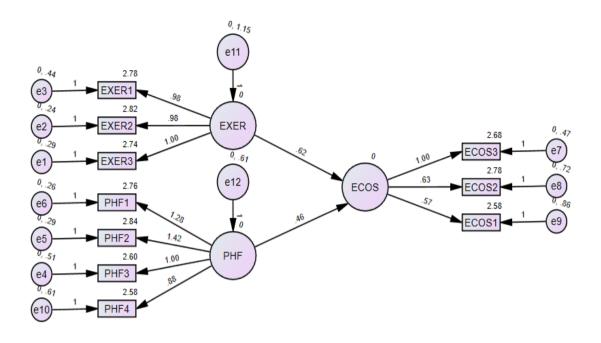
In order to study the relationship between Exercise and Physical Fitness towards Economic Survival, this paper has used Exercise and Physical Fitness as Independent Variable, and Economic Survival as dependent variable. The data was collected from 25 male and 25 female respondents. In which; Two independent variables were abbreviated as EXER (Exercise), PHF (Physical Fitness), and ECOS (Economic Survival). However, the collected data was analyzed using AMOS 26v. The CFA (Confirmatory Factor Analysis) is done through AMOS Software. The research framework of the study is given below;



# **Structure Equation Modeling**

The SEM Model (Structure Equation Model) of the research framework has been given below. This multivariate technique scientifically investigates, tests, and evaluates the cause-and-effect relationship between variables.

This model offers to calculate direct and indirect effects on pre-assumed cause-and-effect relationships. The results in the figure below demonstrates the loadings of variables against variables, and items against variables. The error terms are used to decrease the chances of erroneous results.



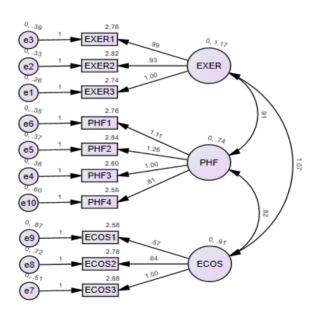
# **Regression Weights**

			Estimate	S.E.	C.R.	P	Label
ECOS	<	EXER	.620	.105	5.879	***	par_8
ECOS	<	PHF	.460	.136	3.383	***	par_9
EXER3	<	EXER	1.000				
EXER2	<	EXER	.984	.108	9.152	***	par_1
EXER1	<	EXER	.975	.122	8.028	***	par_2
PHF3	<	PHF	1.000				
PHF2	<	PHF	1.000	.228	6.255	***	par_3
PHF1	<	PHF	1.000	.206	6.212	***	par_4
ECOS3	<	ECOS	1.000				
ECOS2	<	ECOS	.630	.187	3.366	***	par_5
ECOS1	<	ECOS	.569	.198	2.877	.004	par_6
PHF4	<	PHF	.880	.193	4.560	***	par_7

With the use of estimate values, the above result shows the regression weight of each measuring item with ICEPT and SLOPE. The Exercise (EXER) and Physical Fitness (PHF) is an independent variable with estimate values of 1.000 and 0.880 at the ICEPT level and a 100% significant estimated value at the SLOPE level. ECOS (Economic Survival) ECOS is dependent variable, with an estimate level of 1.000 and 0.569, respectively.

## **AMOS Confirmatory Factor Analysis (CFA)**

The confirmatory factor analysis test is used to validate that the factors loading influencing the model variables is right, as well as to discover any challenges or inaccuracies in the factors loading between the items and the model fit. Because the needed values occur in the result, as indicated in the table, the values recovered from the confirmatory factor analysis result are fine, suggesting that the model is fit and acceptable.



	Assessment	of Norn	nality
--	------------	---------	--------

Variable	Min	Max	skew	c.r.	Kurtosis	c.r.
PHF4	1.000	5.000	.159	.459	834	-1.204
ECOS1	1.000	5.000	.319	.920	674	972
ECOS2	1.000	5.000	.238	.686	500	721
ECOS3	1.000	5.000	.281	.810	828	-1.195
PHF1	1.000	5.000	.058	.168	-1.042	-1.504
PHF2	1.000	5.000	.305	.882	-1.057	-1.525
PHF3	1.000	5.000	.445	1.286	653	943
EXER1	1.000	5.000	.233	.672	-1.021	-1.474
EXER2	1.000	5.000	.124	.357	854	-1.233
EXER3	1.000	5.000	.510	1.473	707	-1.021
Multivariate					10.097	2.304

The table above shows the results of the normality test analysis for each independent dependent and mediator variable. The output shows the minimum and maximum values, as well as the skew value and kurtosis values. According to the results, the EXER (Exercise) variable has a minimum value of 1.00 and a maximum value of 5.00. The c.r. value for EXER is -1.474 to -1.021, while the kurtosis value is -1.021 to -0.707, respectively.

The overall normality analysis reveals that each variable has a negative relationship. The c.r. rate of the Physical Fitness (PHF) variable is 0.882 to 1.286, while the kurtosis value is -0.653 to -1.057. The positive influence is shown by the skewness value of 0.058 to 0.445. The multivariate values of kurtosis and c.r. of PHF its rate is -0.653 and -0.943, respectively, according to the normality analysis.

#### **Factor Covariances**

	PHF4	ECOS1	ECOS2	ECOS3	PHF1	PHF2	PHF3	EXER1	EXER2	EXER3
		ECOSI	ECUSZ	ECOSS	РПГІ	РПГ2	РПГЭ	EAERI	EAERZ	EAERS
PHF4	1.084									
ECOS1	.524	1.164								
ECOS2	.468	.548	1.092							
ECOS3	.566	.466	.550	1.418						
PHF1	.739	.559	.387	.923	1.262					
PHF2	.713	.753	.645	1.029	1.122	1.534				
PHF3	.572	.512	.612	.812	.764	.876	1.120			
EXER1	.768	.608	.612	1.090	1.027	1.185	.892	1.532		
EXER2	.724	.444	.620	1.002	.917	.951	.928	1.120	1.348	
EXER3	.711	.571	.783	1.057	.978	1.158	.976	1.083	1.133	1.432

With the use of specified values, the above result compares the covariance and variance estimate matrices. Each variable's covariance analysis is also described in the result. At the rate level, the covariance ratio shows that the positive and significant variance ratios are 0.468 and 0.978, respectively. The results

show that there is a significant and positive relationship between the factors. Another example is variance, which exhibits a covariance of 0.466 and a degree of variance of 1.164. The mean denotes that each variable's 100 percent significant levels at each rate point are 0.000.

**Factor Correlations** 

	PHF4	ECOS1	ECOS2	ECOS3	PHF1	PHF2	PHF3	EXER1	EXER2	EXER3
PHF4	1.000									
ECOS1	.466	1.000								
ECOS2	.430	.486	1.000							
ECOS3	.456	.363	.442	1.000						
PHF1	.632	.461	.330	.690	1.000					
PHF2	.553	.563	.498	.698	.806	1.000				
PHF3	.519	.448	.553	.644	.643	.668	1.000			
EXER1	.596	.455	.473	.739	.739	.773	.681	1.000		
EXER2	.599	.355	.512	.725	.703	.661	.755	.780	1.000	
EXER3	.571	.442	.626	.742	.727	.781	.771	.731	.816	1.000

The correlation of estimate denotes the interaction between covariance, variance, ICEPT mean, and SLOPE 1.000, which denotes a level of significance of 100 percent and inter-correlation of each variable. Each correlation

estimate's values are 0.681, 0.755, and 0.771, respectively (for PHF3). The results show that there is a positive relationship between the dependent and independent variables.

#### Means

PHF	<b>ECOS</b>	<b>ECOS</b>	<b>ECOS</b>	PHF	PHF	PHF	<b>EXER</b>	<b>EXER</b>	<b>EXER</b>
4	1	2	3	1	2	3	1	2	3
2.580	2.580	2.780	2.680	2.760	2.840	2.600	2.780	2.820	2.740

The mean value of each growth curve model connected to Exercise and Physical Fitness, and Economic Survival is described in the above result. Each curve's estimated values, standard error value, c.r. values, and probability values are presented in the results. The table above portraits the mean values for Items.

# Standardized Regression Weights

	Estimate
EXER3 ← EXER	.904
$EXER2 \leftarrow EXER$	.869
$EXER1 \leftarrow EXER$	.865
PHF3 ← PHF	.813
$PHF2 \leftarrow PHF$	.873
$PHF1 \leftarrow PHF$	.851
ECOS3 ← ECOS	.802
ECOS2 ← ECOS	.583
ECOS1← ECOS	.504
PHF4 ← PHF	.671

The table above shows the values for Standardized Regression Weights. The table portraits the estimates for the relationship (cause-and-effect relationship) between measuring items and variable.

## **Intercepts**

	Estimate	S.E.	C.R.	P	Label
EXER3	2.740	.171	16.026	***	par_11
EXER2	2.820	.166	17.005	***	par_12
EXER1	2.780	.177	15.724	***	par_13
PHF3	2.600	.151	17.197	***	par_14
PHF2	2.840	.177	16.049	***	par_15
PHF1	2.760	.161	17.195	***	par_16
ECOS3	2.680	.170	15.756	***	par_17
ECOS2	2.780	.149	18.626	***	par_18
ECOS1	2.580	.154	16.742	***	par_19
PHF4	2.580	.149	17.349	***	par_20

ICEPT and SLOPE verses variables estimate values are described by intercepts. The results of the Exercise,

Physical Fitness, and Economic Survival demonstrate that 0.171 to 0.149 and SLOPE give a 100 percent significant level result that accepts the alternative hypothesis and rejects the null hypothesis, indicating that there is a substantial relationship between the three.

#### Variable Covariances

	Estimate	S.E.	C.R.	P	Label
EXER <> PHF	.914	.220	4.157	***	par_8
ECOS <> EXER	1.066	.252	4.235	***	par_9
ECOS <> PHF	.822	.208	3.949	***	par_10

The given result shows how the covariance estimate matrices are related to one another using specified values. A description of the covariance analysis of relationship between variables  $EXER \leftarrow \rightarrow PHF$ ,  $ECOS \leftarrow \rightarrow EXER$ , and  $ECOS \leftarrow \rightarrow PHF$  is also included in the outcome. A positive and statistically significant variance ratio with each other at the rate level is 0.000, according to the covariance ratio. The findings reveal that the factors have a statistically significant and favourable association.

# Variable's Correlations

	Estimate
EXER ←→ PHF	.982
ECOS <b>←→</b> EXER	1.033
ECOS ←→ PHF	1.002

The table above shows the estimates of correlation between the variables. The results from the table above portraits the values for EXER $\leftrightarrow$ PHF is 0.982, ECOS  $\leftrightarrow$  EXER is 1.033, and ECOS  $\leftrightarrow$  PHF is 1.002.

#### Variances

	Estimate	S.E.	C.R.	P	Label
EXER	1.170	.288	4.062	***	par_21
PHF	.739	.217	3.410	***	par_22
ECOS	.911	.285	3.191	.001	par_23

The table above shows the intercept, estimates, C.R., and significant values for Exercise (EXER), Physical Fitness (PHF), and Economic Survival (ECOS) is significant, as the values for EXER is 0.000, PHF is 0.000, and ECOS is 0.001. Therefore, the data collected for the variables is significant.

#### **Factor Score Weights**

	PHF4	ECOS1	ECOS2	ECOS3	PHF1	PHF2	PHF3	EXER1	EXER2	EXER3
PHF	.056	.020	.027	.060	.131	.140	.107	.086	.095	.128
EXER	.046	.042	.057	.126	.107	.115	.088	.137	.151	.204
ECOS	.041	.001	.001	.003	.097	.104	.080	.164	.181	.244

The factor score weights for each variable are shown in Table above. PHF, EXER, and ECOS plots each item's predicted weight versus the factors. The weights range from +1 to -1. For example, PHF 4, PHF3, PHF2, PHF1 provides the powerful loadings against PHF by applying a 0.056, 0.107, 0.140, and 0.131 load on the variable.

#### **Covariance Matrix**

	PHF	EXER	ECOS
PHF	.739		
EXER	.914	1.170	
ECOS	.822	1.066	.911

The table above shows the covariance matrix between the variables. Where, PHF→ EXER is 0.914, PHF→ ECOS is 0.822, EXER→ ECOS is 1.066.

#### **Minimization History**

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	6		662	9999.000	426.050	0	9999.000
1	9		-1.440	1.979	227.094	19	.647
2	9		-1.216	.369	171.161	6	1.035
3	3		566	.121	155.888	5	.731
4	0	1609.631		.716	79.798	8	.915
5	0	1217.938		.454	56.522	3	.000
6	0	960.773		.314	52.904	1	.890
7	0	794.489		.045	52.493	1	1.062
8	0	797.031		.005	52.488	1	1.010
9	0	798.233		.000	52.488	1	1.000

The result of all iterations starting at 0 and ending at level point 7 is shown in the minimization history. The results show that negative eigenvalues, condition values, smallest eigenvalues, diameter rates, and the F-statistic value are all described, as well as the ratio analysis of each iteration. 6, 9, 9, 3, 0, 0, 0, 0, 0, 0, 0 is the negative eigenvalue. 1609.631, 1217.938, 960.773, 794.489, 797.031, and 798.233 are the condition numbers, respectively. The results show that the f statistic values for each iteration are 426.050, 227.094, 171.161, 155.88, 79.798, 56.522, 52.904, 52.493, 52.488, and 52.488. The result reveals the history of minimization in the form of ratios of 9999.000, 0.647, 1.035, 0.731, 0.915, 0.000, 0.890, 1.062, 1.010, and 1.000, indicating that there is a positive correlation between variables by assessing research in Exercise, Physical Fitness, and Economic Survival.

# **Model Fit Summary**

## **CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	33	52.488	32	.013	1.640
Saturated model	65	.000	0		
Independence model	20	418.616	45	.000	9.303

The model fit summary presented above is relevant to Exercise and Physical Fitness. The model explains the saturation model, as well as the independence model and the default mode. Results. The results show that NPAR is 33, and each model has a value of 3. The CMIN value for the default model is 52.488, while the saturated model's value is 0.013, and the independence model's value is 418.616. The result also specifies the probability values that

are 0.000 at the present time and are 100 percent significant. The default model's CMIN/DF rate is 1.640, whereas the independence model's rate is 9.303, according to the aforementioned model. The CMIN models, according to the findings, are suitable for analysis and research in the fields of Exercise and Physical Fitness.

# **Baseline Comparisons**

This outcome model explains that in a baseline comparison of each model, the NFI values are 0.875, 1.000, and 0.000, respectively, while the RFI value is 0.824 and 0.000.

However, the TLI and CFI models, which are 0.923 and 0945, respectively, when compared to the default, saturated, and independence models, reveal a positive baseline comparison in between variables.

	NFI	RFI	IFI	TLI	
Model	Delta1	rhol	Delta2	rho2	CFI
Default model	.875	.824	.947	.923	.945
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

#### **NCP**

Model	NCP	LO 90	HI 90
Default model	20.488	4.457	44.409
Saturated model	.000	.000	.000
Independence model	373.616	311.830	442.866

This result displays the NCP, LO90, and H190 values for each model, as well as a summary of model fitness. The default model yields an NCP value of 2, 0.488 while the saturated model yields a 0.000 significant ratio. The NCP

performance is represented by the L090 with values 4.457 of Default model, 0.000 for saturated model, and 373.616 is the value for NCP's Independence Model. The H190 states that the 44.409 values in the values model's saturation model are significant, and that the independence model has a positive hypothesis value with the dependent variable of 442.866.

#### **FMIN**

Model	FMIN	F0	LO 90	HI 90
Default model	1.071	.418	.091	.906
Saturated model	.000	.000	.000	.000
Independence model	8.543	7.625	6.364	9.038

The result shows that the FMIN value of fitness summary for the default model is 1.071, while the saturated model has 0.000 values and the independence model has a value of 8.543. The F0 model's rate levels for each perspective are 0.418, 0.000, and 7.625, respectively. The LO 90 ratios of each model are 0.091, 0.000, and 6.364, respectively, indicating that each variable's model fitness is substantial and acceptable. The result shows that HI 90 has a default model value of 0.906, a saturated model value of 0.000, and an independent model value of 9.038.

#### **RMSEA**

Model	RMSEA	LO 90	HI 90	<b>PCLOSE</b>
Default model	.114	.053	.168	.044
Independence model	.412	.376	.448	.000

The default mode values and independence model values of each model are shown in the RMSEA result. Its RMSEA value is 0.114 and 0.412, respectively, and the LO 90 value of each model comprised default model and independence model is 0.053 and 0.376. The results show that HI 90 has a positive hypothesis value of .044 and 0.000 has a PCLOSE rate of 0.000, indicating that each model is significant.

# AIC

Model	AIC	BCC
Default model	118.488	137.594
Saturated model	130.000	167.632
Independence model	458.616	470.195

By assessing the features of Economic Survival (ECOS) values, the AIC fit summary connected to Exercise (EXER) and Physical Fitness (PHF). Each model has an AIC value of 118.488. The saturation model has a value of 130.000, while the independence model has a value of 458.616, respectively. The result reveals that BCC value is related to model performance. The default model has a value of 137.594, while the saturated model has a value of 167.632 and the independence model has a value of 470.195.

#### **ECVI**

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.418	2.091	2.906	2.808
Saturated model	2.653	2.653	2.653	3.421
Independence model	9.360	8.099	10.773	9.596

The table above shows the value for ECVI. The values for Default Model ECVI 2.418, Saturated Model is 2.653, and Independence Model is 9.360. However, the value for LO 90 model is 2.091, 2.653 for saturated model, and 8.099 for independence model. The value for HI 90 Model is 2.906, 20.654 for saturated model, and 10.773 for independence model.

#### **HOELTER**

Model	HOELTER .05	HOELTER .01
Default model	44	50
Independence model	8	9

The table above the values for HOELTER Model. The value for HOELTER .05 is 44 for default model, and 8 for Independence model. Similarly, the value for HOELTER .01 is 50 for Default Model and 9 for Independence model.

## Conclusion

Economic survival is also intimately linked to health and fitness. When a country's health is in jeopardy, its economic stability is jeopardized. Any pandemic has an impact on the global economy. It is critical to give people with a basic understanding of exercise and physical activity in order to help them overcome health problems. The study of the relationship between exercise and fitness, as well as its impact on economic survival, has as its main goal to help us comprehend the value and necessity of exercise and physical fitness in our life. Exercise and physical activity are two essential words that are closely related. The sole difference between exercise and physical activity is that exercise is a set of movements that are planned, whereas physical activity is simply the movement of bodily parts without any thought. The results indicated that all our three hypotheses were accepted as the relationship between variables were significant. Therefore, the result indicated that Exercise and Physical fitness is correlated with each other, and Exercise→ Economic Survival, and Physical Fitness→ Economic Survival are also positively correlated with each other.

#### Recommendations

Following are the recommendations for the future studies:

 The future studies can add factors of functional fitness as well and virtual reality training in relationship with

- physical fitness. As this would make research a bit more advance.
- Furthermore, this study lacked the comparison

between the responses of male and female. Therefore, future studies can add gender wise comparison between analysis section.

# References

- Afshar, N., Dashti, S. G., Te Marvelde, L., Blakely, T., Haydon, A., White, V. M., Emery, J. D., Bergin, R. J., Whitfield, K., & Thomas, R. J. (2021). Factors Explaining Socio-Economic Inequalities in Survival from Colon Cancer: A Causal Mediation AnalysisFactors Explaining Inequalities in Colon Cancer Survival. *Cancer Epidemiology, Biomarkers & Prevention*, 30(10), 1807-1815. https://doi.org/10.1158/1055-9965.EPI-21-0222
- Barsasella, D., Liu, M. F., Malwade, S., Galvin, C. J., Dhar, E., Chang, C.-C., Li, Y.-C. J., & Syed-Abdul, S. (2021). Effects of virtual reality sessions on the quality of life, happiness, and functional fitness among the older people: a randomized controlled trial from Taiwan. *Computer Methods and Programs in Biomedicine*, 200, 105892. https://doi.org/10.1016/j.cmpb.2020.105892
- Boni, A. (2019). Transforming Technology Into High-Value Solutions for Compelling Biomedical Needs: Bio Entrepreneurship Bootcamp 2.0. *Journal of Commercial Biotechnology*, 24(4). https://doi.org/10.5912/jcb908
- DALYAN, C., GÖNÜLAL, O., KESICI, N. B., ERYILMAZ, L., TUNÇER, S., & ÖZTEKIN, A. (2021). New and confirmed records and rare occurrences of some deep sea fishes in the Turkish waters of the northern Aegean Sea (Mediterranean Sea). *FishTaxa*, 21, 1-18.
- Daulatabad, V., Kamble, P., Berad, A., & Kate, N. (2020). Comparative study of physical fitness parameters between basketball players and sprinters. *National Journal of Physiology, Pharmacy and Pharmacology*, *10*(10), 829-833. https://doi.org/10.5455/njppp.2020.10.05117202018062020
- de Melo, G. E. L., Kleiner, A. F. R., Lopes, J. B. P., Dumont, A. J. L., Lazzari, R. D., Galli, M., & Oliveira, C. S. (2018). Effect of virtual reality training on walking distance and physical fitness in individuals with Parkinson's disease. *NeuroRehabilitation*, 42(4), 473-480. https://doi.org/10.3233/NRE-172355
- Dendas, A. M. (2010). The relationship between core stability and athletic performance Humboldt State University]. http://hdl.handle.net/2148/660
- Dhasal, N., & Thakur, A. (2019). COMPARATIVE STUDY OF PHYSICAL FITNESS AND QUALITY OF LIFE IN EXERCISING AND NON-EXERCISING INSTITUTIONALISED ELDERLY. *International Journal of Recent Scientific Research*, 10(05), 32232-32239. https://doi.org/10.24327/ijrsr.2019.1005.3427
- Genç, H., & Ciğerci, A. E. (2020). The effect of the core exercises on body composition, selected strength and performance skills in child soccer players. *International Journal of Applied Exercise Physiology*, 9(6), 101-108.
- Hernández-Jaña, S., Sanchez-Martinez, J., Solis-Urra, P., Esteban-Cornejo, I., Castro-Piñero, J., Sadarangani, K. P., Aguilar-Farias, N., Ferrari, G., & Cristi-Montero, C. (2021). Mediation role of physical fitness and its components on the association between distribution-related fat indicators and adolescents' cognitive performance: exploring the influence of school vulnerability. the cogni-action project. *Frontiers in behavioral neuroscience*, *15*, 746197. https://doi.org/10.3389/fnbeh.2021.746197
- Heyong, W., Su, Y.-Y., Wei, S.-Y., Boleyev, T., Kuo, Y.-K., & Zafar, S. Z. (2021). Nexus between Sportsmen Injuries and Economic Survival in Future Life. *Revista de Psicología del Deporte (Journal of Sport Psychology)*, 30(3), 156-167. <a href="https://mail.rpd-online.com/index.php/rpd/article/view/482">https://mail.rpd-online.com/index.php/rpd/article/view/482</a>
- Htut, T. Z. C., Hiengkaew, V., Jalayondeja, C., & Vongsirinavarat, M. (2018). Effects of physical, virtual reality-based, and brain exercise on physical, cognition, and preference in older persons: a randomized controlled trial. *European Review of Aging and Physical Activity*, *15*(1), 1-12. <a href="https://eurapa.biomedcentral.com/articles/10.1186/s11556-018-0199-5">https://eurapa.biomedcentral.com/articles/10.1186/s11556-018-0199-5</a>
- Huang, L., Lei, W., Xu, F., Liu, H., & Yu, L. (2020). Emotional responses and coping strategies in nurses and nursing students during Covid-19 outbreak: A comparative study. *PloS one*, *15*(8), e0237303. <a href="https://doi.org/10.1371/journal.pone.0237303">https://doi.org/10.1371/journal.pone.0237303</a>
- Kariyawasam, A., Ariyasinghe, A., Rajaratnam, A., & Subasinghe, P. (2019). Comparative study on skill and health related physical fitness characteristics between national basketball and football players in Sri Lanka. *BMC research notes*, 12(1), 1-5. <a href="https://bmcresnotes.biomedcentral.com/articles/10.1186/s13104-019-4434-6">https://bmcresnotes.biomedcentral.com/articles/10.1186/s13104-019-4434-6</a>
- Mozolev, O., Shorobura, I., Zdanevych, L., Hutsal, L., Marusynets, M., & Kravchuk, L. (2020). Influence of Physical Fitness of Students on the Quality of Leisure Organization in a Sports and Health Tourism. <a href="http://46.63.9.20:88/jspui/handle/123456789/415">http://46.63.9.20:88/jspui/handle/123456789/415</a>

- Müller, D. C., Boeno, F. P., Izquierdo, M., Aagaard, P., Teodoro, J. L., Grazioli, R., Cunha, G., Ferrari, R., de Asteasu, M. L. S., & Pinto, R. S. (2021). Effects of high-intensity interval training combined with traditional strength or power training on functionality and physical fitness in healthy older men: a randomized controlled trial. *Experimental Gerontology*, 149, 111321. https://doi.org/10.1016/j.exger.2021.111321
- Oketch, J. O., Okeyo, W., & Kiruhi, T. (2021). ECONOMIC SURVIVAL THROUGH RESPONSIVE ENTREPRENEURSHIP IN THE ERA OF GLOBAL DISRUPTION. http://ir.mksu.ac.ke/handle/123456780/8089
- Qian, J., McDonough, D. J., & Gao, Z. (2020). The effectiveness of virtual reality exercise on individual's physiological, psychological and rehabilitative outcomes: a systematic review. *International journal of environmental research and public health*, 17(11), 4133. <a href="https://doi.org/10.3390/ijerph17114133">https://doi.org/10.3390/ijerph17114133</a>
- Rutkowski, S., Rutkowska, A., Jastrzębski, D., Racheniuk, H., Pawełczyk, W., & Szczegielniak, J. (2019). Effect of virtual reality-based rehabilitation on physical fitness in patients with chronic obstructive pulmonary disease. *Journal of human kinetics*, 69, 149. <a href="https://doi.org/10.2478/hukin-2019-0022">https://doi.org/10.2478/hukin-2019-0022</a>
- Sattler, K. M., Deane, F. P., Tapsell, L., & Kelly, P. J. (2018). Gender differences in the relationship of weight-based stigmatisation with motivation to exercise and physical activity in overweight individuals. *Health Psychology Open*, 5(1), 2055102918759691. https://doi.org/10.1177/2055102918759691
- Shidong, L., Kuo, T.-H., ul Islam, M., Talha, M., Lone, S. A., & Wei, S.-Y. (2021). The impact of sports activities on economic survival, social life of women, and what do big data analysis reveals about social life of sports women. *Revista de Psicología del Deporte* (*Journal of Sport Psychology*), 30(3), 229-241. https://mail.rpd-online.com/index.php/rpd/article/view/489
- Siani, A., & Marley, S. A. (2021). Impact of the recreational use of virtual reality on physical and mental wellbeing during the Covid-19 lockdown. *Health and Technology*, *11*, 425-435. <a href="https://doi.org/10.1007/s12553-021-00528-8">https://doi.org/10.1007/s12553-021-00528-8</a>
- Yaprak, Y., & Küçükkubaş, N. (2020). Gender-related differences on physical fitness parameters after core training exercises: A comparative study. *Progress in Nutrition*, 22(3), e2020028-e2020028. <a href="https://doi.org/10.23751/pn.v22i3.9334">https://doi.org/10.23751/pn.v22i3.9334</a>