

Growth of Fitness Industry

A Deep Dive into the Flourishing US Fitness Sector

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Presentation Overview

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Why this topic?



Project Background

What?

Growth of the fitness industry and its triggers

Where?

United States of America

When?

2000 to 2021

How?

Data research and rational analysis

Main factors influencing the growth

Health Consciousness

Technological Integration

Flexible Options

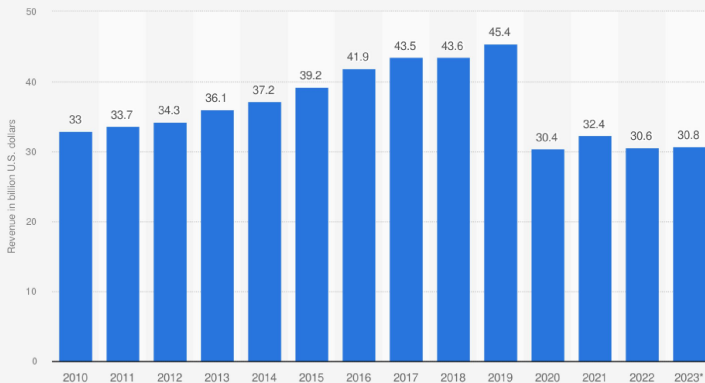
Pandemic Impact

Social Media Influence

Diversified Offerings

Revenue & Forecast

Revenue of the fitness, health and gym club industry in the United States from 2010 to 2022, with a forecast for 2023 (in billion U.S. dollars)



Source
IBISWorld
© Statista 2023

Additional Information:
United States; 2011 to 2023

statista

How has the COVID-19 pandemic impacted the US Fitness Industry?

Membership Impact

- 60% planned to cancel gym memberships
- Post-COVID, 59% did not renew memberships

Gym Closures

- 22% of American gyms closed, costing \$15-20 billion

Home Workouts

- 40% started home workouts due to COVID

Industry Job Loss

- 500,000 laid-off with 38,000 club closures

Amid setbacks, signs of recovery are emerging as the fitness industry adapts and innovates for a healthier future.

Variable	Explanatory Variables	Units
P	Gym Memberships	millions
PA	Outdoor Physical Activity Level (Adults)	%
PCI	Per Capita Income	\$
OR01	Obesity Rate (Adults)	%
SM	Social Media Users	millions
Z	Number of Specialized Fitness Facilities	#

Table: Detailed variables explanation

Expected Effects of Variables

Explanatory Variables	Expected effect
Outdoor Physical Activity Level (Adults)	-
Per capita income	+
Obesity Rate (Adults)	+
Social Media Users	+
Number of Specialized Fitness Facilities	+

First Regression Model

Equation

Our model equation*

$$\begin{aligned} \text{GYM MEMBERSHIPS (P)} &= \beta_1 + \beta_2 \times \text{PHYSICAL ACTIVITY LEVEL (PA)} \\ &+ \beta_3 \times \text{PER CAPITA INCOME (PCI)} + \beta_4 \times \text{OBESITY RATE (OR01)} \\ &+ \beta_5 \times \text{SOCIAL MEDIA USERS (SM)} \\ &+ \beta_6 \times \text{SPECIALISED FITNESS FACILITIES (Z)} \end{aligned}$$

**LOGs have been applied to the variables*

First Regression Model

EViews Results

Dependent Variable: LOG(P) Method: Least Squares Date: 01/16/24 Time: 16:02 Sample: 2000 2021 Included observations: 22				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.03793	5.774998	2.257651	0.0383
LOG(PA)	-0.406516	0.500905	-0.811563	0.4290
LOG(PCI)	-1.160546	0.427419	-2.715239	0.0153
LOG(OR01)	0.637958	0.594624	1.072876	0.2992
LOG(SM)	0.176920	0.097454	1.815428	0.0882
LOG(Z)	0.202754	0.271707	0.746222	0.4664
R-squared	0.898205	Mean dependent var	4.022931	
Adjusted R-squared	0.866394	S.D. dependent var	0.272210	
S.E. of regression	0.099499	Akaike info criterion	-1.550342	
Sum squared resid	0.158400	Schwarz criterion	-1.252785	
Log likelihood	23.05376	Hannan-Quinn criter.	-1.480247	
F-statistic	28.23570	Durbin-Watson stat	0.834942	
Prob(F-statistic)	0.000000			

Figure: Linear regression of our model

First Regression Model

Residual Analysis

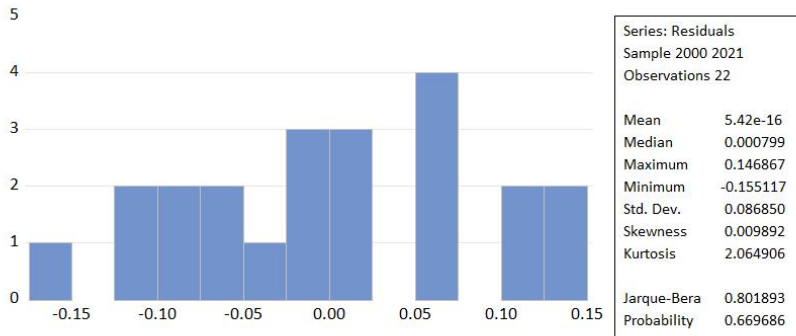


Figure: Jarque-Bera test

Skewness is 0.0098, Kurtosis is 2.065 and Jarque-Bera is 0.801

Preparing Second Model

Variables with high effect on our model

PER CAPITA INCOME (PCI)
SOCIAL MEDIA USERS (SM)

Variables that doesn't drive our model

OUTDOOR PHYSICAL ACTIVITY LEVEL (PA)
OBESITY RATE (OR01)
NUMBER OF SPECIALISED FITNESS FACILITIES (Z)

Second Regression Model

Equation

Our model equation*

$$\text{GYM MEMBERSHIPS (P)} = \beta_1 + \beta_2 \times \text{PER CAPITA INCOME (PCI)} \\ + \beta_3 \times \text{SOCIAL MEDIA USERS (SM)}$$

**LOGs have been applied to the variables*

Second Regression Model

EViews Results

Dependent Variable: LOG(P)
Method: Least Squares
Date: 01/18/24 Time: 11:31
Sample: 2000 2021
Included observations: 22

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.843575	2.641336	3.348145	0.0034
LOG(PCI)	-0.601085	0.266564	-2.254938	0.0361
LOG(SM)	0.249524	0.036671	6.804364	0.0000

R-squared	0.879260	Mean dependent var	4.022931
Adjusted R-squared	0.866551	S.D. dependent var	0.272210
S.E. of regression	0.099440	Akaike info criterion	-1.652393
Sum squared resid	0.187879	Schwarz criterion	-1.503614
Log likelihood	21.17632	Hannan-Quinn criter.	-1.617345
F-statistic	69.18153	Durbin-Watson stat	0.581965
Prob(F-statistic)	0.000000		

Figure: Linear regression of our model

Second Regression Model

Equation

Our model equation*

$$\text{GYM MEMBERSHIPS (P)} = 8.8435 - 0.6011 \times \text{PER CAPITA INCOME (PCI)} + 0.2495 \times \text{SOCIAL MEDIA USERS (SM)}$$

**LOGs have been applied to the variables*

Second Regression Model

Accuracy of the Model

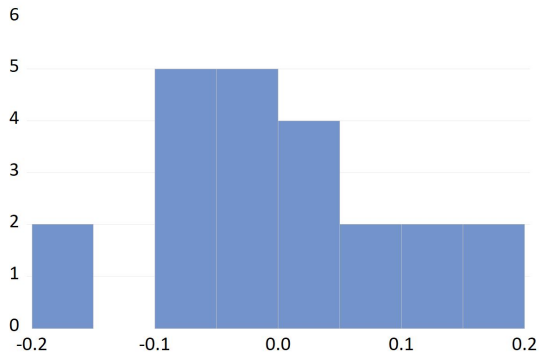
R-squared measurement

- This measures how close the points are to the estimated regression line in the scatter plot.
- It tells you about the prediction power and of the overfit character of the model.

The value of R-squared in our case is **0.879**, which is a “good” value but **we can not only rely on it.**

Second Regression Model

Residual Analysis



Series: Residuals	
Sample	2000 2021
Observations	22
Mean	1.34e-16
Median	-0.005507
Maximum	0.198143
Minimum	-0.184305
Std. Dev.	0.094587
Skewness	0.113256
Kurtosis	2.908578
Jarque-Bera	0.054693
Probability	0.973024

Figure: Jarque-Bera test

Skewness is 0.11, Kurtosis is 2.908 and Jarque-Bera is 0.054

Interpretation of Results

Explanatory Variables	Expected effect	Real effect
Outdoor Physical Activity Level (Adults)	-	N/A
Per capita income	+	-
Obesity Rate (Adults)	+	N/A
Social Media Users	+	+
Number of Specialized Fitness Facilities	+	N/A

Outdoor physical activity level

Both variables are non-exclusive

Factors: meteorology, time available, variety of activities

Per capita income

Opposite impact as considered

Purchasing power (inflation)

Obesity Rate

Does not necessarily affect

Lack of motivation, negative body image, alternative fitness options

Social Media Users

Positive Correlation: correct estimation.

Heavy influence of the media as shown in the Introduction

Number of Specialized Fitness Facilities

Independent from the number of gym memberships

New gyms tend to get filled by “unloyal” customers

Conclusion

Out of all the variables considered, the importance of social media stands out as the most critical, proving how susceptible we are to what we see online and how it affects our health and habits

Since the power of social media does not seem to slow down, we predict that the increase in number of gym memberships will not either

References



Statista (2023)

Revenue of the fitness, health and gym club industry in the United States

<https://www.statista.com/statistics/605223/us-fitness-health-club-market-size-2007-2021/>



The World Bank (2022)

GDP per capita (current US\$)

<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>



Pew Research Center (2021)

Social Media Fact Sheet

<https://www.pewresearch.org/internet/fact-sheet/social-media/#panel-81867c91-92ad-45b8-a964-a2a894f873ef>



Run Repeat (2023)

Fitness Industry Statistics

<https://runrepeat.com/fitness-industry>



IRHSA (2023)

The 2023 IHRSA Global Report

<https://www.ihrsa.org/publications/the-2023-ihrsa-global-report/>



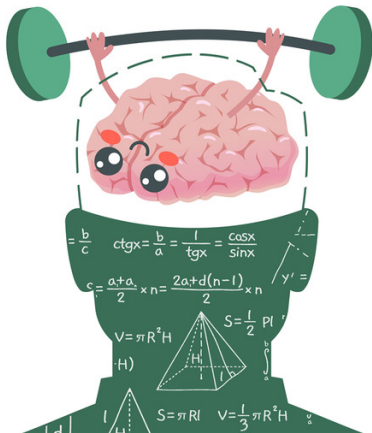
Muscle Brawn (2023)

10 Facts on how bad COVID was for the Fitness Industry

<https://muscleandbrawn.com/statistics/covid-fitness-industry/>

Thank you for your attention

Any Questions?



Remember, lifting knowledge is the best workout for your brain!