

# *Does practicing sports and other hobbies affect levels of well-being? A case study for teaching and research staff.*

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## ABSTRACT

Recently, economists have been increasingly interested in analyzing different variables that may affect subjective well-being (SWB); e.g., income, work, political and social environment, or habits. This paper attempts to ascertain if practicing sport and other hobbies explains higher levels of SWB. In order to control these variables, a homogenous sample composed of researchers and teachers from Italian Universities was used. Subjects answered a questionnaire on socio-demographic data, habits and SWB (measured by the “Life Satisfaction scale” and the “Psychological general well-being test (PGWB)”). A relation between practicing sport and SWB was found. However, no relation between practicing hobbies and SWB was observed. These results must be considered to help design prevention policies in the public health field since practicing sport is an easy, cheap way to prevent or improve psychological diseases, and to generally improve citizens’ quality of life.

Keywords: Subjective well-being, Life satisfaction, sports, public health policies.

## 1. Introduction

In developed countries, psychological diseases such as depressive and anxiety disorders have increased in recent decades, and also in young populations [1]. These diseases involve considerable costs for public budgets and worsen the quality of life of those suffering them [2].

Even if individuals have no physical or mental diseases, and can cover their primary needs, high levels of subjective well-being are not guaranteed. As observed in developed countries in recent decades, an increase in the GDP or material wellness does not imply good results for SWB levels.

Subjective well-being (SWB) is often used by psychologists as an umbrella term for how we think and feel about our lives [3]. The recent interest shown by economists in

studying well-being and happiness has led to the development of other measures, such as the Satisfaction With Life Scale or the Subjective Happiness Scale [4].

Many scholars have attempted to find empirical evidence for the relation between behaviour and wellness or mood state, which has led to many measures of the subjective frame of mind being created; e.g., POMS (Profile of Mood States) [5], Big Fish, STAI (State-Trait Anxiety Inventory) and the PGWB Test (Psychological general well-being test). However, tests like POMS or STAI do not adequately sample the full range of affective experiences because they characterize well-being only for absence of distress. For this reason, we chose the PGWB test and the “Life satisfaction” scale.

In this context, economists have recently shown increasingly interest to analyze the different variables affecting SWB in order to establish recommendations that aim to improve citizens’ quality of life.

In line with this, several studies into SWB and happiness have identified a variety of factors that affect SWB.

In general, scholars have focused on “happiness economics” and have identified a range of personal, economic and social factors associated with SWB. For example, Frey 2008 [6] reported cluster factors that affect SWB in the followed items: income, economic situation, levels of democracy, type of job, marriage and divorce, salary equity between men and woman, and TV viewing.

Along these lines, Dolan et al. 2008 [3] reviewed economics journals that consider SWB and its determinants, and they identified the following factors: income, personal characteristics (including gender, age, ethnicity), socially developed characteristics (including education, type of work, unemployment), how we spend our time (including exercise), attitudes and beliefs towards our and others’ life, relationships and income inequality.

For this study, however, we focused on finding a relation between practicing sport and other leisure activities and higher levels of SWB. In order to control this variable, a homogeneous sample was selected in terms of economic and social factors.

There is a substantial number of works in the literature indicating that physical activity and regular exercise can improve quality of life in both physical and psychological dimensions [7], and the effect of physical activity on SWB has recently received increasing attention [4, 8]. In addition, physical activity might prove to be an effective measure to treat, and to even prevent, psychiatric diseases such as depressive and anxiety disorders [4]. Furthermore, physical activity has increasingly been recommended to individuals with or without such diseases to help improve their quality of life and their well-being [9, 10, 11]. The results of these studies can prove useful to reinforce prevention policies in the public health field. In fact, many medical organizations recommend physical activity to the general population because it is considered an important tool to help improve public health.

In addition, and according to the literature, engagement in leisure activities also has a beneficial effect on peoples’ SWB because they provide opportunities to meet life values and needs, they build social relationships, and they allow us to feel positive emotions and to acquire additional skills and knowledge [12]. In general, achieving good SWB levels to achieve some engagement with the community is a fundamental factor [13].

Therefore, the purpose of the present study is to verify if practicing sports and other leisure activities constitutes explicative variables of SWB.

## 1.1. Theoretical background.

Economists have recently begun to pay attention to subjective measures of well-being and have attempted to identify the factors influencing SWB. Some findings indicate that being unemployed has a huge negative effect on SWB, and that other factors, like level of education, income, and the economic, social and political environmental context, also affect SWB [3].

The effect of sport on SWB has been analyzed by some scholars who focused on some specific groups of society, such as the elderly [14, 15, 16, 17, 18], sportspeople [11], college-aged individuals [19], people with some handicap or disease [20,21,22], and people with mental diseases such as anxiety and depression [23,24].

Evidence shows that for these specific population groups, exercise has a positive effect on mood, self-confidence, positive feelings and SWB. However, this study analyses if practicing sport also has a positive effect on the SWB of a general population with no specific diseases or physic characteristics. In order to control the “practicing sport” variable, our sample is composed of people who share common work, and a social and economic environment.

## 2. Material and methods

For this study, a homogeneous sample was selected to avoid biases for levels of income, level of education, type of job and the economic, social and political environmental context. The selected sample comprised teachers and researches working in universities from central-north Italy.

Data were collected during the February-July 2012 period using a questionnaire which was sent to the 12 faculties which decided to collaborate by email. The sample comprised 125 teachers and researchers from Italian University Faculties (the faculties belonging to the Universities of Modena, Bologna, Firenze and Torino), who completed a questionnaire which contained questions about descriptive situations, habits and SWB. The questionnaire was accurately designed [25] to collect the data required for the study. The items contained in the questionnaire are summarized in Table 1:

Table 1. The items contained in the questionnaire.

Age
Gender
Marital status
Children
Smoking
TV viewing
Healthy diet
Practicing sport
Sport hours a week
Type of sport
Satisfaction with the sport practiced
Practicing a hobby
Hobby hours a week

Type of hobby
Satisfaction with the hobby practiced
Job satisfaction
Life Satisfaction
The PGWB test

We chose cross-sectional data to achieve the goals set out. According to Krueger 2008 [26], comparing months or weeks does not add much information because dramatic events are absent and overall life satisfaction does not change much from week to week. However, using panel data could prove interesting for future studies to compare periods of years.

SWB was measured in two different ways:

1. *Life Satisfaction Scale*: The Life Satisfaction Scale is a single item that measures the cognitive aspects of SWB with the question: From 1 to 10. When all is taken into account, how satisfied are you with your life? [3]. We called this variable “Life satisfaction”.
2. *Psychological general well-being (PGWB) test*: This index allows to measure subjective feelings of well-being or distress through 22 items. The variable, called “Level of well-being”, derives from the PGWB test score.

In order to obtain some clue as to the effect of practicing sport and other leisure activities on well-being, some statistical analyses were done.

Firstly, we used a contingency table and  $\chi^2$  test to observe if there were significant differences for life satisfaction between the group which practiced sports and the group that did not. We applied the same analysis to test the differences in life satisfaction between the group which practiced a hobby and the group that did not.

Secondly, and complementarily with this analysis, a two-way ANOVA (sports and leisure activities practiced) analysis was done to identify if there were any significant differences for the mean level of well-being between the group which practiced sport and that which did not, and between the group which practiced a hobby and that which did not.

Subsequently, the analysis was extended to all the variables through a correlation analysis. We attempted to find which variable included in the study significantly correlated with level of well-being.

Finally, we ran a multiple regression to find the explanatory variables of the level of well-being.

### 3. Results

Firstly, a contingency table was built to contrast the independence hypothesis. Table 2 was built with the “Life satisfaction” and “Practicing sport” variables. The results obtained are the following:

**Table 2: Contingency Table Sport \* SWB**

			Life satisfaction (SWB)							Total	
			0	4	5	6	7	8	9		10
Sport	No	N.Subjects	2	3	6	1	16	13	4	3	48
		% In the practicing sport question.	4,2%	6,3%	12,5%	2,1%	33,3%	27,1%	8,3%	6,3%	100,0%
YES	N.Subjects		0	1	3	11	12	27	15	4	73
		% In the practicing sport question.	,0%	1,4%	4,1%	15,1%	16,4%	37,0%	20,5%	5,5%	100,0%
Total	N.Subjects		2	4	9	12	28	40	19	7	121
		% In the practicing sport question.	1,7%	3,3%	7,4%	9,9%	23,1%	33,1%	15,7%	5,8%	100,0%

**Table 3: Chi-square test**

	Value	gl	Sig. asintotic (bilateral)
Chi-squared Pearson	20,005	7	,006
Maximum-likelihood ratio	21,892	7	,003
Linear association	6,373	1	,012

Table 3 shows that the likelihood associated with the  $\chi^2$  statistic is small ( $< 0.05$ ). Therefore, we considered that our data were not compatible with the independence hypothesis, thus both variables were statistically related.

The same analysis was applied for the “Life satisfaction” and the “Practicing a hobby” variables. For this case, no relation between variables was found because the results suggest accepting the independence hypothesis, as Table 34 shows:

**Table 4: Chi- square test**

	Value	gl	Sig. asintotic (bilateral)
Chi-square Pearson	5,256	7	,629
Maximum-likelihood ratio	5,375	7	,614
Linear association	2,503	1	,114

Subsequently, two ANOVA analyses were used to test for the differences in the mean well-being and life satisfaction values between exercisers and non-exercisers. We obtained an  $F_{\text{Well-being level}} = 6.088$ ,  $p=0.015$ , and  $F_{\text{Life satisfaction}} = 6.674$ ,  $p=0.011$ . These results indicate that both exercisers and non-exercisers have different means in the levels of well-being represented by the “Level of well-being” and “Life satisfaction” variables.

We specifically obtained the following means (Table 5):

**Table 5:** ANOVA analysis

Practicing Sport	Mean level of well-being	Mean life satisfaction
Yes	6.054	7.67
No	3.6042	6.88

Afterwards, a correlation analysis was run and its results show associations of “Level of well-being” with “Gender” ( $r=-0.218$ ,  $p=0.016$ ), “Smoking” ( $r=-0.179$ ,  $p=0.05$ ), “Practicing Sport” ( $r=0.26$ ,  $p=0.004$ ) and “Job satisfaction” ( $r=0.503$ ,  $p=0.000$ ).

Finally, a linear regression was applied using the step-wise technique to observe which variables were significantly explicative of “Level of well-being”. For this analysis, we used “Level of well-being” as the dependent variable, and all the data collected by the questionnaire as the explanatory. Table 6 provides the results.

**Table 6:** Regression analysis

Characteristics	Coefficients ( $\alpha$ and $\beta_n$ )	t	Sig.
<b>Model 1</b>			
Constant	-5,847	-3,17	0,002
Job satisfaction	1,492	6,034	0
R2	0,239		
R2 Adjusted	0,232		
<b>Model 2</b>			
Constant	-6,279	-3,461	0,001
Job satisfaction	1,389	5,655	0
Practicing sport	1,855	2,463	0,015
R2	0,277		
R2 Adjusted	0,264		
<b>Model 3</b>			
Constant	-5,58	-3,089	0,003
Job satisfaction	1,33	5,484	0
Practicing sport	1,913	2,584	0,011
Smoking	-0,234	-2,302	0,023
R2	0,309		
R2 Adjusted	0,291		

As seen in Table 6, the best model was model number 3, in which “Level of well-being” was positively explained by the level of “Job Satisfaction” and “Practicing sport”, and was negatively explained by “Smoking”.

Even if this model explained only 30.9% of data behavior, we consider it sufficient given the complexity of the dependent variable.

In addition, it can be stated that a relation between X and Y existed if the absolute value of the t statistics was greater than 2, which was the case of all the variables used in the model. Specifically we obtained a  $t = b_2/S_{b_2} = 1.913/0.74 = 2.584$  for the “Practicing sport” variable.

A p-value of less than 0.05 was alternative evidence that  $\beta_2$  did not equal 0. Therefore, we rejected the null hypothesis,  $H_0 : \beta_2 = 0$ , indicating that there was a relation between X and Y.

## 4. Discussion

The present study analyses the relation between practicing sports and other leisure activities with SWB in a sample of teachers and researchers from Italian Universities.

According to the results obtained, there is a relation only between practicing sports and SWB. No relation is observed between practicing a hobby and SWB.

There are differences in SWB between exercisers and non-exercisers for both our dependent variables, these being “Life satisfaction” and “Level of well-being”.

However, it is not possible to confirm our second hypothesis, that of a positive effect of “Practicing a hobby” on SWB. The works in the literature report a positive relation between SWB and leisure activities, considered only for people who are strongly engaged with leisure activities [27].

Exercise participation is associated with higher levels of life satisfaction; in other words, exercisers are, on average, more satisfied with their lives and have higher levels of well-being than non-exercisers.

In addition, we can indicate that the variable with the strongest effect on SWB is “Job satisfaction”. In our model, “Practicing sport” also has a positive effect on SWB, while “smoking” has a weaker, negative effect on SWB.

Our regression model explains 30.9% of data variability. We believe that this is an acceptable result because, in general, experienced analysts have found that  $R^2$  was 0.80, or above, for models based on time-series data. Cross-section data models give values within the 0.40 to 0.60 range, and the models based on individual people’s data often give  $R^2$  values within the 0.10 to 0.20 range [28]. Kruger et al 2008 [26], for example, report a similar  $R^2$  in their study into the reliability of subjective well-being measures.

Based on this evidence, we conclude that promoting sports in society can prove to be a tool that is not only cheap and available to improve the mood, well-being and quality of life of individuals, but one that is capable of preventing or reducing physiological diseases, just as the literature review has proven.

Given the health physical and psychological benefits obtained from practicing sports, it can be stated that there are still far too few people who take regular exercise. We believe that Public Administrations must encourage engagement in exercise programs, sports competitions or in some routine types because the problem does not lie in persuading people to exercise, but in encouraging them to stick to it. People repeatedly make attempts to be active, but fail [29].

This study provides valuable findings for the relation between practicing sport and SWB. However, we must note some limitations. This study uses cross-sectional data, so any conclusions on the causality between practicing sport and SWB must be drawn with caution.

In addition, there is another problem with causality since well-being or a personality profile leading to better well-being may be a prerequisite for people to engage in exercise in the first place. Emotionally well-adjusted individuals may be more attracted to exercise, and may have the necessary energy and self-discipline to maintain an exercise regime [4].

In conclusion, for our homogenous sample, in which individuals share a common work, social and economic environment, these being the factors that most affect SWB according to the literature, we find that “Job satisfaction” is the variable that best explains SWB, followed by the “Practicing sport” variable.

Therefore, because “Job satisfaction” is a difficult factor to manage, Public Administrations must act based on the “Practicing sport” variable by promoting it to all age groups.

## Literature

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