

## Investigation of Happiness Determinants Using the Oxford Questionnaire in Students of the Francisco Jose De Caldas Distrital University

Alberto Acosta Lopez and Octavio Jose Salcedo Parra

*Universidad Distrital Francisco Jose de Caldas, Carrera 7 No. 40B-53, Bogota DC, Republica de Colombia*

**Key words:** Well-being, happiness, questionnaire, regression, reliability

**Abstract:** Evaluation of psychometric properties and those related to the Oxford OHI questionnaire Hills and Argyle<sup>[1]</sup> in University students. The purpose of this paper is to investigate the relationship between the model of 41 questions: personal and those related to the Oxford questionnaire, among the students of the Engineering Faculty of the District Universidad F. Jose de Caldas Bogota, Colombia 2019 in this descriptive study, it was conducted with 162 students of the Engineering Faculty of the district University F. Jose de Caldas Bogota, selected by stratified random sampling. For data collection the demographic survey and the Oxford happiness survey, the OHI inventory<sup>[1]</sup> were used. Data were analyzed using descriptive statistics (percentage, mean and standard deviation) and inferential statistics (Pearson's moment-product correlation coefficient and multiple regression analysis). The statistical software SPSS V.21 Nie and Hadlei in 1970 was used software for data analysis. The results obtained indicate that: the transfer time of less than one hour from home to the University, the fact of being a believer of a religion and an academic average  $>3.5$ , generates a high level of happiness in students. On the other hand, gender (male, female) and the economic statement were not significant in the determination of happiness. Similarly, based on the results obtained in this study, the inventory of Oxford OHI Hills and Argyle<sup>[1]</sup> could be endorsed as a valid and reliable means of measurement, so it can be used to assess happiness in university students.

### Corresponding Author:

Alberto Acosta Lopez

*Universidad Distrital Francisco Jose de Caldas, Carrera 7 No. 40B-53, Bogota DC, Republica de Colombia*

Page No.: 201-204

Volume: 15, Issue 5, 2020

ISSN: 1818-5800

The Social Science

Copy Right: Medwell Publications

### INTRODUCTION

The importance of measuring happiness is recommended and determined to date by academics, managers and professionals, committed to restoring

people's non-monetary welfare; scientific research on this subject has increased in recent years, especially, when dealing with university students, happiness becomes vital because every human being desires to be happy; to the point of becoming the most explored habit. Greek

philosophers such as: Socrates, Plato and Aristotle had an eudaimonic vision of happiness, they considered that being happy meant leading a virtuous life that was only achieved through wisdom. Epicurus on the other hand, wonders what it is that moves humans to work because happiness will consist in achieving it and that thing is pleasure.

Since, not everyone was called to live a life in virtue. Hence, two conceptions of happiness are identified, one conceived as eudaimonia that comes from wisdom and another hedonic, focused on the acquisition of goods and therefore, the satisfaction of needs. According to this vision, happiness is acquired when the desired good is obtained<sup>[2]</sup>. The new interest in the study of happiness uses the scientific approach based on the measurement, the elaboration of theories, the approach and the corroboration of hypotheses and the reformulation of theories. Start the measurement Diener *et al.*<sup>[3]</sup> building the scale of satisfaction with life that has as a particular characteristic having several items that allow addressing cognitive aspects linked to subjective well-being. The scale has been tested in various cultural contexts and countries: USA<sup>[4]</sup>, Canada, China, Russia, Korea, Brazil Denmark, among others.

The purpose of this study is to adapt and validate the scale of OHI (Hills and Argyle, 2002) in the students of the Faculty of Engineering of the Francisco Jose de Caldas District University located in the city of Bogotá, -Colombia. In order to inform its levels of reliability and validity indications of the construct; this allows to make available to the researchers of the area a scale with solid psychometric properties and duly replicated in various studies. It will also provide indications of the levels of life satisfaction reported by a sample of Colombian university students.

The study has been structured as follows: initially, the method, its participants, the design and the tool used to support the estimation are described. Subsequently, the results of the evaluation and discussion are described. Similarly: the relevance of the variables chosen as determinants of happiness is explained, indicating and analyzing the results found in this study, pointing out the differences found with respect to the available literature.

## **MATERIALS AND METHODS**

The present study, we used the demographic survey, and the Oxford happiness survey the OHI inventory<sup>[1]</sup>. Study based on a psycho-metric property test, developed at the University of Oxford on the happiness of university students. The happiness index was taken as a dependent variable and the statistical software SPSS V.21 was used a program for data analysis

with which the impact caused by each variable can be appreciated: level of confidence, hypothesis contrast, correlation, reliability (Cronbach's alpha) with respect to the dependent variable (happiness). Thirteen independent variables of quantitative and dichotomous type were added to the survey prepared by Oxford, thus including academic, social, economic, cultural factors with the purpose of analyzing the objective or particular characteristics of each person on the level of happiness.

The independent variables to take into account in the binary logistic regression on the level of happiness are the following:

- Age
- Gender
- Semester
- Economic stratum
- Marital status
- Work
- Academic average
- Believer
- Type of house that lives
- Who pays for their studies
- Level of your income with respect to monthly expenses
- Average daily time, cell phone use
- Transfer time, House-University

The collection (sample of data), is composed of 162 students, belonging to the Faculty of Engineering of the Universidad Distrital Francisco Jose de Caldas in Bogotá, that are part of the curricular projects of; Electronics, systems and industrial engineer. On the other hand, 90% belong to the male gender and the remaining 10% to the female gender, the data were taken between September, 11 and October, 26, 2019. In a voluntary, anonymous and sincere way the responses of the students were verified to avoid syntax errors or multiple responses in the survey.

As already mentioned, the hHappiness Index was taken as a dependent variable. To determine the student's happiness scale, the SWLS (Satisfaction with Life Scale) scale was used. It is important to mention that the fundamental purpose of the SWLS scale focuses on calculating the overall satisfaction of people but does not determine specific aspects such as: gender, academic average and/or economic statement. The scale consists of 5 Likert statements with a rating of 1-5 where 1 is taken as low happiness and 5 is taken as high happiness<sup>[3, 4]</sup>.

On the other hand, it is pointed out that a measurement of "1" denotes that the person totally disagrees, "2" indicates that they more or less disagree,

“3” neither agrees nor disagrees, “4” indicates that they more or less agree and “5” totally agrees. This is because the most common Likert scale contains five categories.

#### Dichotomous variables:

- Gender (male/female)
- Marital status (single/other)
- He is a believer (yes/no)
- Work (yes/no)

#### Quantitative variables:

- Age (20 or less/more than 20)
- Semester (1-5/6-10)
- Economic stratum (1 and 2/3 or more)
- Level of your income with respect to your monthly expenses (Low/Enough)
- Academic average ( $\leq 3.5 / > 3.5$ )
- Type of house (Rent/Own): Who pays for their studies (Family or other/yourself)
- Average daily time of cell phone use (0-120 min/more than 120 min)
- Transfer time from the University-House (0-60 min/more than 60 min)

## RESULTS

The following table shows the results obtained for the Cronbach alpha index applied to the 29 questions of the Oxford questionnaire. The Homogeneity Index (IH) and the Corrected Homogeneity Index (IHC).

In Table 1, it can be seen that the results of the reliability coefficients for the total scale range from: 0.898-0.901. These results exceed the magnitude of 0.85, recommended by De Vellis being considered high. Campo-Arias and Oviedo etc. Reason why, it is not necessary to delete any item, since, the index value is high. This proves that it is a positive value which supports the Oxford inventory to be used as a valid and reliable measuring instrument to assess happiness in university students.

With the use of binary logistic regression, it can be seen which covariates are the most important to the dependent variable, making use of a statistic called p-value. (statistical measurement which takes values between 0 and 1), taking a significance level of 5%. According to the results of the binary logistic regression, the following significant covariates were obtained:

- Academic Average
- He is a believer
- Average daily cell phone usage time

Table 1: Index: Cronbach's alpha, IH and IHC

Items	Alpha	IH	IHC
1	0.906574	0.327444	0.259475
2	0.907173	0.239923	0.180142
3	0.898336	0.724235	0.689671
4	0.903191	0.476160	0.423923
5	0.903226	0.476402	0.422938
6	0.898767	0.697929	0.658792
7	0.902487	0.513170	0.464738
8	0.901762	0.555290	0.512728
9	0.898740	0.699948	0.661347
10	0.899371	0.669704	0.627665
11	0.901752	0.554939	0.511378
12	0.900743	0.605609	0.560161
13	0.902298	0.535670	0.479085
14	0.904821	0.416066	0.351810
15	0.898363	0.741024	0.711436
16	0.903933	0.416734	0.372532
17	0.900424	0.633031	0.595687
18	0.901325	0.576637	0.531259
19	0.900843	0.600806	0.555434
20	0.903363	0.462992	0.412314
21	0.899877	0.668661	0.634995
22	0.907611	0.228281	0.165574
23	0.902653	0.515346	0.459145
24	0.909203	0.191525	0.119644
25	0.903115	0.480109	0.428251
26	0.900318	0.656279	0.624386
27	0.902791	0.494232	0.447337
28	0.901967	0.545689	0.493560
29	0.901117	0.591737	0.537842

Using bivariate analysis where everything appears summarized in Table 2 variables (statistical technique that events studies involved two simultaneous variables. For the numerical calculations the distribution Chi-square Bivariate used) that they are not in the equation of the Software SPSS.

As Mentioned before by taking a margin of error of 0.05 (associated with the p value) with a single degree of freedom, a chi value of 3.8415 is obtained, it can be seen in Table 2 that the only variable that rejects the hypothesis null is the variable “It is a believer” due to its affected chi-squared value 8,038 but ( $8,038 > 3,884$ ), so, the variable “It is a believer if it influences happiness” can be concluded.

Using the Wald chi-square test for multivariate analysis, knowing that 3.8415 is the chi-square value for a margin of error of 0.05 and a degree of freedom, we can reject the null hypothesis in the variables “Academic average”, “He is a believer “and” average daily time of cell phone use”. Knowing these variables, now it is possible to construct the predictive model where its general equation is:

$$P(Y=1) = \frac{1}{1 + e^{(-\alpha - \beta_1 X_1 - \beta_2 X_2 - \beta_3 X_3 - \dots - \beta_k X_k)}}$$

Donde  $\alpha$ ,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_k$  son los parametros del modelo.

Table 2: The variables are not in the equation

Step 0	Variables	Score	Gl.	Sig.
	Age	0.403	1	0.526
	Gender	0.124	1	0.725
	Semester	0.676	1	0.411
	Economic stratum	0.882	1	0.348
	Marital status	0.307	1	0.580
	Work	0.404	1	0.525
	The level of your income compared to your monthly expenses are?	0.033	1	0.855
	Academic average	1.360	1	0.244
	Are you a believer?	8.038	1	0.005
	Who pays for your studies?	0.667	1	0.414
	Average daily time using the cell phone	0.2851	1	0.091
	Transfer time	0.023	1	0.879
	What kind of house do you live in?	0.538	1	0.463
	Global statistics	18.597	13.000	0.136

Taking this information, the variable “It is a believer” to apply the general equation where the reference category is No as this way was encoded by the SPSS program. Then the equation would be:

$$P(\text{FELICIDAD} = S_i) = \frac{1}{1 + e^{(-0.977 - (-1.418 * 1))}} = 0.3915$$

The average inter-item correlation ranges from 0.319-0.517, values that are considered good measures of internal consistency. From this result it can be interpreted that with this probability less than 0.50, a non-believer would be classified as happiness = No.

In Table 2, it can also be seen that there are no gender differences between men and women with respect to satisfaction the results they obtained for Spanish youth are consistent with the above noted, since, no differences are appreciated and in general, they are not statistically significant, Diener etc. also found in their studies that the gender variable was so, insignificant which corroborates the consistency with the findings previously found.

## DISCUSSION

In the present study, the results obtained for Cronbach’s alpha coefficient in all cases, presented values ranging from: 0.89 and 0.90, these results exceed the magnitude of 0.85, recommended by DeVellis being considered high Campo-Arias and Oviedo. Reason why it was not necessary to withdraw any item, since, the value of the index is high. The stability of Cronbach’s alpha coefficient in the 90% confidence interval corroborates this result as suggested by Ledesma, Duhachek and Iacobucci and Newcombe and Merino. Therefore, the reliability of the twenty-nine questions of the Oxford

happiness questionnaire is endorsed, so that, it can be used as a valid and reliable measuring instrument to evaluate happiness in university students.

## CONCLUSION

According to the statistical results, (the measurement of the p-value statistic with a level of significance of 5%), the following significant covariates were obtained: average daily time of cell phone use academic average >3.5 and being a believer of a religion what contributes to favor the feeling of being close to God and this relationship as with human relationships, positively affects happiness. According to available evidence, it is common in developing countries to find these types of scores in which people are globally satisfied which contributes to scientifically verify the impact of these factors on happiness levels of the university population.

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