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TEXTO PARA DISCUSSÃO N° 508

AN INTRODUCTION TO THE DETERMINANTS OF HAPPINESS IN BRAZIL

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**UNIVERSIDADE FEDERAL DE MINAS GERAIS
FACULDADE DE CIÊNCIAS ECONÔMICAS
CENTRO DE DESENVOLVIMENTO E PLANEJAMENTO REGIONAL**

AN INTRODUCTION TO THE DETERMINANTS OF HAPPINESS IN BRAZIL

André Braz Golgher

Cedeplar/Face/UFGM

**CEDEPLAR/FACE/UFGM
BELO HORIZONTE
2014**

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RESUMO

Este trabalho faz parte de uma série de cinco artigos que analisa os determinantes da felicidade no Brasil usando o World Values Survey (WVS) como base de dados. Primeiramente, o trabalho apresenta estatísticas descritivas sobre diversos fatores que podem influenciar os níveis gerais de felicidade e de satisfação com a vida, como idade, sexo, saúde, status civil, grupo étnico, renda, educação e inserção no mercado de trabalho. Em seguida, o texto discute os determinantes da felicidade e da satisfação com a vida fazendo uso de modelos logísticos ordenados para essa primeira variável e modelos MQO para a segunda. Os principais resultados encontrados foram os seguintes. Indivíduos casados eram os mais felizes. Observou-se uma relação positiva entre níveis de saúde e níveis de felicidade e satisfação com a vida. Os desempregados eram os mais infelizes. Renda determinava os níveis de felicidade em parte por que permitem ao indivíduo ter um melhor nível de saúde. Indivíduos com curso superior apresentavam níveis mais altos de bem-estar principalmente por causa da obtenção de rendimentos mais altos, por terem melhor saúde e/ou por apresentarem menores taxas de desemprego. O valor intrínseco da educação superior parece ser pequeno.

Palavras-chave: felicidades, satisfação com a vida, Brasil, WVS.

ABSTRACT

Nowadays, happiness is quite a popular field of inquiry among economists and social scientists. This paper is the first of a series of five papers that discuss the determinants of happiness in Brazil using as database the World Values Survey (WVS). First, the paper presents descriptive statistics of some variables that might influence overall levels of happiness and satisfaction with life, such as age, sex, health levels, civil status, ethnic groups, income, education attainment, and employment status. Then it discusses the determinants of happiness and satisfaction with life with the use of ordered logistic models for the first variable and OLS models for the second. The main findings of the paper were the following: Married individuals were happier and more satisfied than any other group. There was a strong, robust and positive association between health and well-being. Unemployed individuals were the most miserable. Money mattered mainly because it buys better health, and thus has a positive impact on well-being. Higher education buys happiness through higher income, and due to better health and/or lower levels of unemployment, not because it has an intrinsic value.

Key-words: happiness, satisfaction with life, Brazil, WVS.

JEL: I310

1. INTRODUCTION

This paper is the first of a series of papers that discuss the determinants of happiness in Brazil using as database the World Values Survey (WVS). This presentation is complemented by the other four papers of the series. The other four papers are entitled: “The influence of attitudes and beliefs on the determinants of happiness in Brazil”, “An overview of the determinants of happiness in Brazil in 2006”, “The determinants of happiness and satisfaction in Brazil through the lenses of the APC approach” and “The most miserable and the most blissful individuals in Brazil.”

Happiness was first studied by philosophers and then by psychologists. More recently, research in the fields of sociology and political science has also analyzed this theme. Economists began to explore this topic in the seventies and it only became popular in the nineties. Nowadays this field of inquiry is quite popular among economists and social scientists. At least one academic journal, the Journal of Happiness Studies, specializes in this field, and many others also publish on the subject. For instance, papers dealing with happiness are published in the Journal of Public Economics (Blanchflower and Oswald, 2004; Oreopoulos, 2007), Science (Kahneman et al, 2006), Journal of Socio-economics (Slutzer and Frey, 2006) and American Sociological Review (Yang, 2008). Most papers in this area discuss the determinants of happiness and the implementation of public policies designed to enhance overall happiness levels (Frey, 2008). Moreover, there are introductory books dealing with the subject, such as Frey (2008) and Laynard (2005), and books for the general public, such as Weiner (2008) and Buttner (2010). Specifically concerning Brazil, Corbi and Menezes-Filho (2006) and Terra (2010) have discussed the topic, while other authors have compared Brazil with other countries (Cavalcanti et al, 2009).

This paper discusses the determinants of happiness in Brazil using as database the World Values Survey (WVS). It has four main objectives: first, to introduce some of the basic topics of the field; second, to present this database to non-experts; third, to discuss some of the main determinants of happiness in Brazil, and finally, to provide a basis for the presentation of more specific discussions in subsequent papers.

The WVS is a group of representative national surveys carried out in at least 97 societies since 1981. These surveys present data regarding what people want out of life and what they believe (See <http://www.worldvaluessurvey.org/> for further details). The database contains information associated with values, opinions and life satisfaction evaluations. Moreover, it contains demographic variables, such as age, sex and marital status.

Specifically for Brazil, there are three survey waves, in the years 1991, 1997 and 2006, with a total of 4431 observations. Table 1 shows the distribution of observations by wave.

TABLE 1
Number of observations per wave

Year	Frequency	%
1991	1782	40.2
1997	1149	25.9
2006	1500	33.9
Total	4431	100.0

Source: WVS, 1991, 1997 and 2006.

In the following nine sections, I provide some descriptive statistics concerning happiness and life satisfaction for the Brazilian population. The objective is to give an overview of the determinants of well-being in Brazil, introducing some of the many variables of the WVS. Section 2 presents the two variables that are the focus of this paper: happiness and life satisfaction. Section 3 compares Brazil with other countries using these two indicators. The following section, Section 4, discusses the variables happiness and satisfaction in greater depth for the Brazilian data. Section 5 analyses the relationship between health, happiness and satisfaction. Then, the following section, Section 6, presents the association between these three variables, along with sex and age. Sections 7 and 8 discuss respectively the association of marital status and ethnic group with well-being. Then, Section 9 presents the main trends regarding the relationship between education and income, and happiness and satisfaction. Section 10 associates employment status and well-being. Based on the descriptive statistics findings, section 11 presents two groups of econometric models that summarize the partial effects of all these mentioned variables. First, I applied ordered logistics models in order to analyze happiness, and then studied satisfaction with the use of OLS models. The last section concludes the paper.

2. THE VARIABLES HAPPINESS AND LIFE SATISFACTION IN THE WVS

This section presents the two variables associated with happiness and life satisfaction that are the focus of this presentation. The first variable can be described as follows: “In general, you consider yourself a person who is: a) very happy; b) quite happy; c) not very happy; or d) not at all happy.”

Table 2 shows the distributions of answers among these categories for all countries in the WVS and only for Brazil. The distributions were very similar; most people were “Quite Happy,” approximately one quarter were “Very Happy,” a little over 15%, “Not very happy,” and very few “Not at all happy.”

TABLE 2
Distribution of individuals by happiness level in the world and in Brazil

	World		Brazil	
	Frequency	%	Frequency	%
Very happy	66599	26.6	1136	25.7
Quite happy	132016	52.7	2516	56.9
Not very happy	43920	17.5	694	15.7
Not at all happy	7770	3.1	75	1.7
Total	250305	100.0	4422	100.0

Source: WVS, 1991, 1997 and 2006.

Given that very few people considered themselves “Not at all happy,” I grouped the last two categories. Hence, in this analysis the variable happiness has three categories: 1 – Not Happy; 2 – Quite Happy; and 3 – Very Happy.

The other variable of main interest for this study is the following: “In general, are you satisfied or unsatisfied with your life?” The answers ranged from 1, totally unsatisfied, to 10, totally satisfied. Table 3 shows the distribution of individuals among these 10 categories in the world and in Brazil. The main difference between the two areas is that the number of totally satisfied in Brazil is much higher than in the rest of the world, indicating an idiosyncrasy of the Brazilian population.

TABLE 3
Number of observations for the satisfaction variable

	World		Brazil	
	Frequency	%	Frequency	%
1	12327	5.0	138	3.1
2	8502	3.4	71	1.6
3	13975	5.6	104	2.4
4	15309	6.1	142	3.2
5	37376	15.0	569	12.9
6	26802	10.8	362	8.2
7	34361	13.8	531	12.0
8	42603	17.1	832	18.9
9	24731	9.9	457	10.4
10	33016	13.3	1204	27.3
Total	249002	100.0	4410	100.0

Source: WVS, 1991, 1997 and 2006.

These two tables suggest that individuals in Brazil and in other countries are equally happy, but that Brazilians were more satisfied with their lives than others, even though these last results might be caused by limitations in the way Brazilians express themselves. The next section compares these results in further detail.

3. ARE WE HAPPY AND/OR SATISFIED WITH LIFE IN BRAZIL?

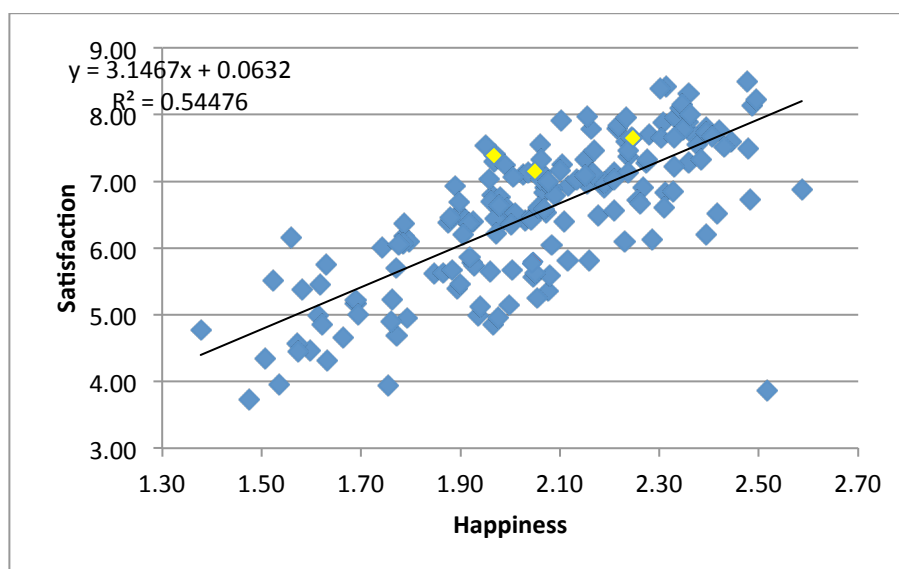
Brazilians are stereotypically portrayed as the happiest people in the world. In this view, Brazil would be the land of eternal celebration and joyfulness (Cavalcanti et al, 2009). Is this perspective close to reality? Popular books that discuss happiness do not include the Brazilians among the happiest on Earth (Weiner, 2008; Buttner, 2010). In the World Database of Happiness (Veenhoven, 2013), with data for satisfaction, Brazil holds an honorable 16th position among 149 countries, but falls far below those most satisfied, such as Costa Rica, Denmark, Iceland and Switzerland.

This section compares happiness and satisfaction levels of all nations with data in the WVS. The two tables above indicate that Brazilians are approximately as happy as other people, but that they were more satisfied with their life, mostly because people in Brazil tend to be over represented in the ten category.

Figure 1 compares the results for happiness, on a scale from one to three, and satisfaction, on a scale from one to ten, for all countries and years in WVS. Many countries have data for more than one year and they are represented separately in the graph. First, notice that both variables are positive strongly correlated with $R = 0.74$. That is, as expected, they indicate similar realities from different perspectives, although each one with its own limitations.

The Brazilian data is shown in yellow. Happiness increased in Brazil from 1991 to 1997, and again from 1997 to 2006. However, satisfaction was roughly stable in this period. Although these variables present different time trends, notice that the Brazilian data do not represent outliers. One country, Tanzania in 2001, has the most outlier data with a high level of happiness and a low level of satisfaction. All other countries/years were located around the linear tendency represented by the equation: $satisfaction = 3.1467happiness + 0.0632$.

FIG. 1
Happiness and satisfaction for different countries and years



Source: WVS, 1991, 1997 and 2006.

This data presented in figure 1 shows that between the 174 countries and years, in happiness Brazil ranked respectively 117th, 94th and 43rd in 1991, 1997 and 2006. For satisfaction, the results were more impressive, with the following positions: 40th, 54th and 29th. Hence, although Brazilians were around the mean for happiness, individuals in Brazil were quite satisfied with their life.

Among the happiest and most satisfied, four countries were amongst the top twenty in both indicators: Canada (2000), Mexico (2000 and 2005), Puerto Rico (2001) and Switzerland (2007). On the other hand, 11 countries were among the 20 last in both indicators, mostly ex-communist countries: Albania (1998), Armenia (1997), Belarus (1996), Bulgaria (1997), Iraq (2006), Lithuania (1997), Moldova (1996 and 2002), Romania (1998), Russian Federation (1995), Ukraine (1996) and Zimbabwe (2001).

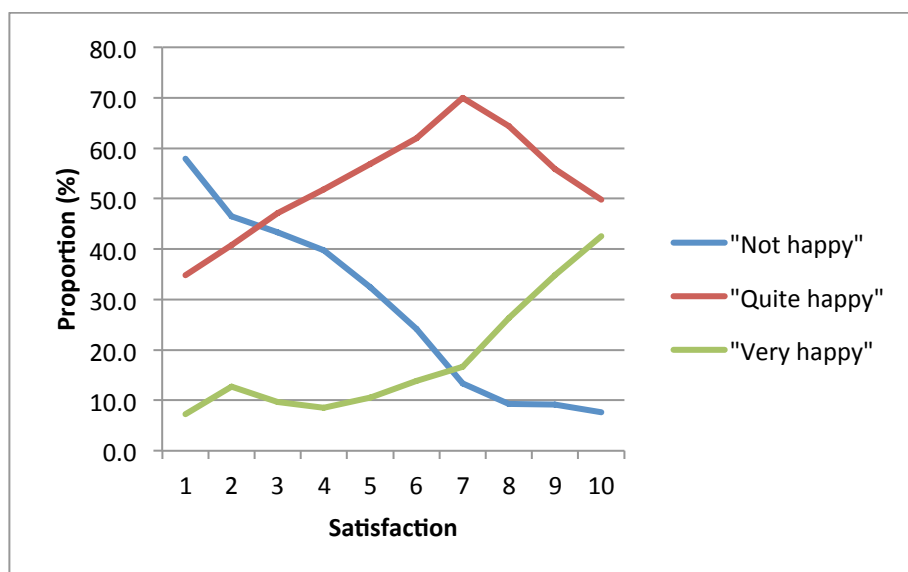
Although Brazil cannot be considered the land of eternal celebration and joyfulness, according to these results, it is somewhat closer to the first group of the happiest countries on Earth than to the second of the most miserable.

4. HAPPINESS AND SATISFACTION IN BRAZIL

Figure 1, presented in the previous section, showed that data for happiness and satisfaction for countries is reasonable correlated. Figures 2 and 3 compare these same indicators in greater detail for the Brazilian data. In the first of these graphs, I show the proportion of individuals in each category of happiness for each level of satisfaction. Some trends are easily noticed, in particular, the high increase in the proportions of “Very happy” after the seventh level of satisfaction and the steady decrease in “Not happy” before this satisfaction category. The seventh level of satisfaction is also the highest

value for “Quite happy.” Hence, it seems that this satisfaction level is a sort of threshold for the happiness variable.

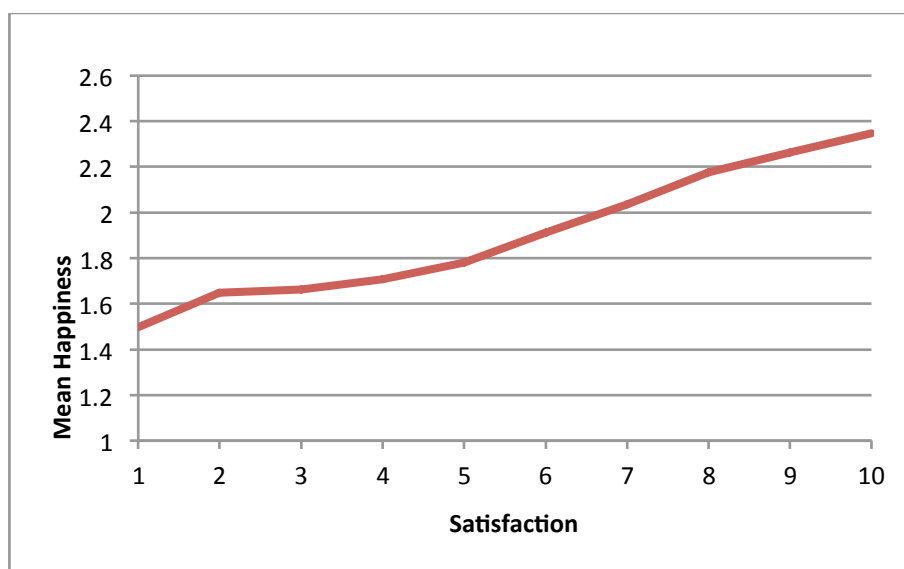
FIG. 2
Distribution of happiness by satisfaction level in Brazil



Source: WVS, 1991, 1997 and 2006.

Figure 3 presents the mean value of happiness for each satisfaction level. It can be easily observed that there is a positive correlation between these variables with a sharper increase after the fifth level of satisfaction

FIG. 3
Mean happiness by satisfaction in Brazil



Source: WVS, 1991, 1997 and 2006.

The results of this section and the previous one indicate that happiness and satisfaction are strongly correlated. The next sections associate these variables with self-evaluated health, individual attributes (sex, age, ethnic group and marital status) and socioeconomic features (income, education attainment and employment status).

5. HAPPINESS, SATISFACTION AND HEALTH IN BRAZIL

Among the many variables that might be associated with different levels of happiness and satisfaction, health is surely a significant one. Happiness and health tend to be positively correlated, as healthier people tend to be happier and happier people tend to be healthier. That is, there is a circular causality. This section discusses the relationship between happiness and satisfaction with life and health in Brazil.

Laynard (2005) presents two studies that discuss this relationship. In the first one, nuns wrote autobiographical texts when they were young. Some years later, psychologists analyzed these manuscripts to determine the level of happiness of each nun. Then, after this analysis, they observed that the happiest nuns lived longer. The second analysis studied actors who were Oscar nominees. It observed if there was any difference between life spans of those awarded and the others. They verified that the first group lived four years longer than the ones not awarded. The WVS contains the following question concerning health: “In general, how is your health?”: a) very good; b) good; c) fair; d) poor; e) very poor (only in 1991 and in 1996). Table 4 shows the distribution of answers among these choices. Due to the small numbers of the last two categories, I grouped the categories fair, poor and very poor. Hence, the health variable further discussed in this paper has three categories of subjectively evaluated health: 1 - Poor and fair, 2 - Good and 3 - Very good.

TABLE 4
Number of observations for the health variable

State of health	Frequency	%
Very good	1170	26.4
Good	1984	44.8
Fair	1147	25.9
Poor	99	2.2
Very poor	26	0.6
Total	4427	100.0

Source: WVS, 1991, 1997 and 2006.

The next table compares the variables happiness and health. The results clearly indicate that healthier individuals tend to be happier, and vice versa. For instance, among the ones that considered their health to be very good, more than 40% were very happy. Among the ones with poor and fair health, this number is a little over 18%. Differences among the categories are statistically significant.

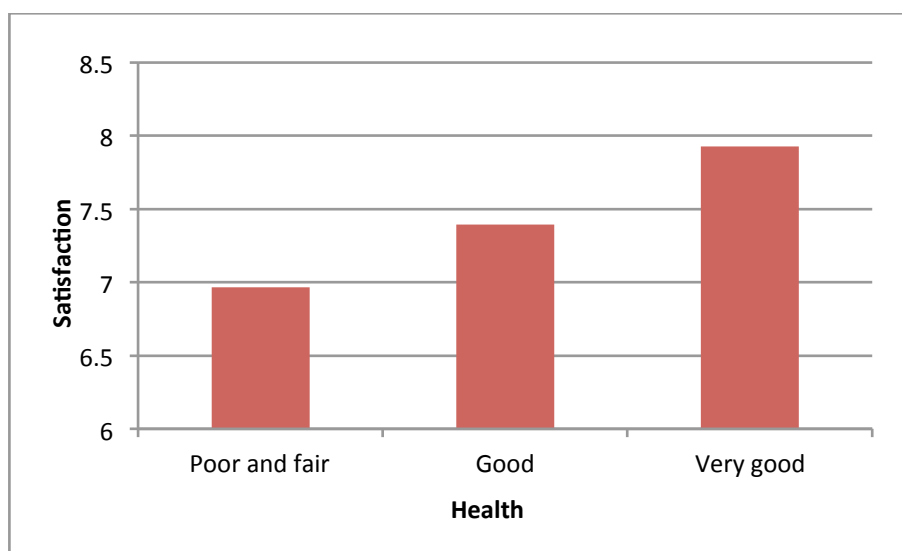
TABLE 5
Comparisons between happiness and health

	Health			
Happiness	Poor and fair	Good	Very good	Total
Not very happy	364	280	124	1131
Quite happy	652	1284	579	2525
Very happy	227	418	491	762
Total	1243	1982	1194	4418
Not very happy	32.2	24.8	11	100
Quite happy	25.8	50.9	22.9	100
Very happy	29.8	54.9	64.4	100
Not very happy	29.3	14.1	10.4	25.6
Quite happy	52.5	64.8	48.5	57.2
Very happy	18.3	21.1	41.1	17.2
Total	100	100	100	100

Source: WVS, 1991, 1997 and 2006.

Figure 4 shows that healthier individuals were also more satisfied with their lives. The mean value for satisfaction was estimated for each health category. Among those who considered themselves to be in very good health, mean satisfaction was close to eight. For those who classified themselves as being in good health, this value was close to 7.4 and for those whose health was either poor or fair, this number was below seven. Differences were statistically significant. Notice, however, that many individuals who classified themselves as being in poor or fair health consider themselves very happy.

FIG. 4
Mean satisfaction by health self-evaluation in Brazil



Source: WVS, 1991, 1997 and 2006.

Is the world becoming happier? As discussed by Laynard (2005), although we are surely becoming richer (and probably healthier), at least in the West, there is no clear tendency toward an increase in happiness; in the US the level has been approximately stable since 1950, and in Europe it increased slightly after 1975.

This section also presents the time trends for health, happiness and satisfaction in Brazil. Are Brazilians getting healthier, happier and/or more satisfied with life?

Table 6 shows the results for health. There is a slight tendency toward improvement in self-evaluated health between 1991 and 2006, although differences were not significant at five percent, but were at 10%. For instance, in 1991, the proportion of individuals who considered themselves in poor and fair health was larger than those in very good health, and the contrary was observed for 2006. Notice that there is at least one demographic tendency suggesting that the results are even more positive; the Brazilian population is becoming older.

TABLE 6
Health time trends

	Numbers			Proportion (%)		
	1991	1997	2006	1991	1997	2006
Health						
Fair and poor	535	327	385	30.1	28.5	25.7
Good	769	513	702	43.2	44.6	46.8
Very good	475	309	412	26.7	26.9	27.5
Total	1779	1149	1499	100	100	100

Source: WVS, 1991, 1997 and 2006.

A similar analysis is presented in table 7 for happiness. Data from figure 1 showed that overall levels of happiness increased in Brazil in the period and this table corroborates this result. Individuals in 2006 were much happier than in the other years, and the differences were statistically significant.

TABLE 7
Happiness time trends

Happiness	Numbers			Proportion (%)		
	1991	1997	2006	1991	1997	2006
Not happy	432	196	141	24.3	17.1	9.4
Quite happy	971	699	846	54.6	60.9	56.5
Very happy	374	253	510	21	22	34.1
Total	1777	1148	1497	100	100	100

Source: WVS, 1991, 1997 and 2006.

Figure 1 also showed that time trends for overall satisfaction in Brazil were not very clear. Table 8 shows the distribution of individuals by satisfaction level for the three years. Notice that fewer individuals showed levels of satisfaction between one and five, or ten in 2006 than in other years. That is, people concentrated in the middle levels of satisfaction in the end of the period.

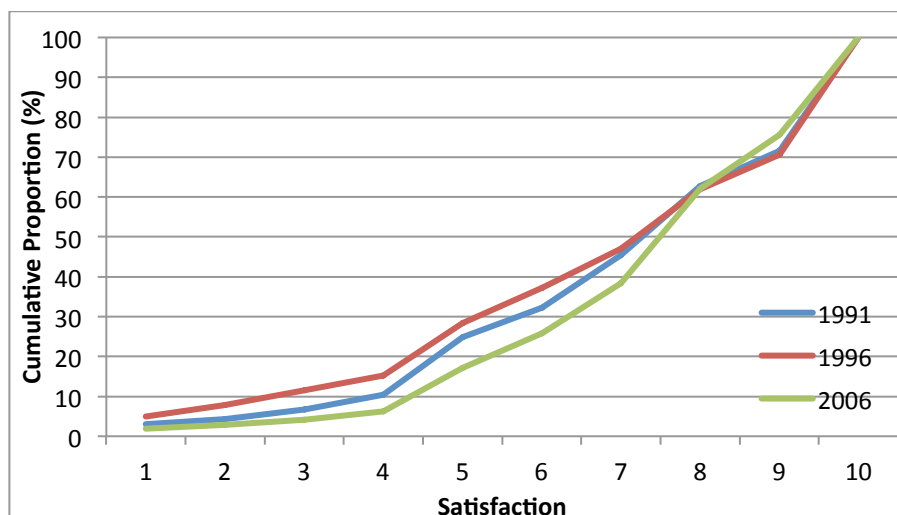
TABLE 8
Satisfaction time trends

Satisfaction	Numbers			Proportion (%)		
	1991	1997	2006	1991	1997	2006
1	53	56	28	3	4.9	1.9
2	23	34	14	1.3	3	0.9
3	42	42	20	2.4	3.7	1.3
4	66	43	32	3.7	3.8	2.1
5	255	151	163	14.4	13.2	10.9
6	132	101	129	7.5	8.8	8.6
7	234	111	186	13.2	9.7	12.5
8	305	171	356	17.2	14.9	23.8
9	157	99	201	8.9	8.6	13.5
10	503	337	364	28.4	29.4	24.4
Total	1770	1145	1493	100	100	100

Source: WVS, 1991, 1997 and 2006.

Figure 5 shows this result from another perspective with the cumulative percentage for each category of satisfaction. First, there is no general time tendency as the curve for 1991 is between the other two. In 2006 there were fewer people at the first seven levels, that is, fewer who were not satisfied. However, there were also fewer very satisfied individuals.

FIG. 5
Cumulative satisfaction in Brazil



Source: WVS, 1991, 1997 and 2006.

6. SEX AND AGE TRENDS FOR HEALTH, HAPPINESS AND SATISFACTION IN BRAZIL

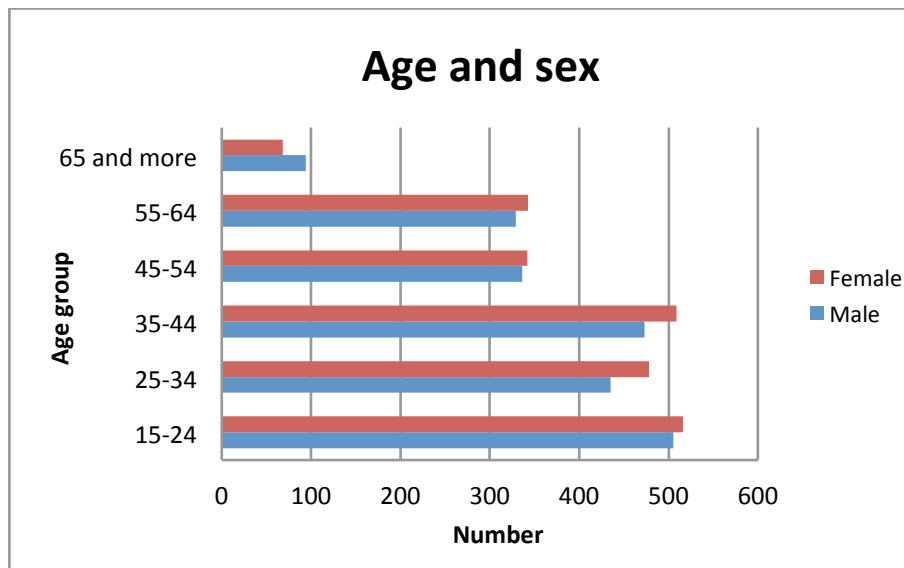
Many factors might influence happiness and satisfaction with life besides health and time. In this section, I present two of them: sex and age. Results for these two variables are not conclusive in general (Laynard, 2005), as different studies found different results.

For instance, after controlling for the effects of the other variables, Frey (2008) found that women in Germany were happier than men, and Corbi and Menezes-Filho (2006) obtained the contrary for Brazil. Yang (2008) found that women in the US had greater propensity to be happy.

For age, Frey (2008) found a U-shaped relationship, while Corbi and Menezes-Filho (2006) found non-significant coefficients. Blanchflower and Oswald (2004) observed a concave relationship when the study was done with a few controlling variables in the models, and a U-shaped one in the model with more controls.

Figure 6 presents the distribution of individuals by sex and age group. The numbers of males and females are roughly the same. The last age group is not numerous and it was grouped with the previous one. Therefore, in the following analysis the age variable has five categories: 15-24, 25-34, 35-44, 45-54, and 55 and over.

FIG. 6
Distribution of the weighted WVS sample by sex and age group in Brazil



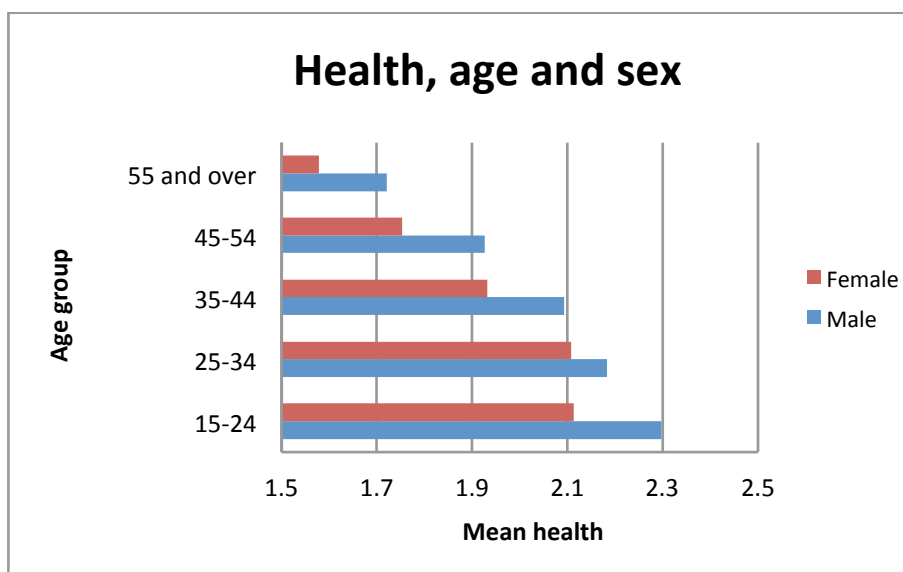
Source: WVS, 1991, 1997 and 2006.

The next three graphs show the mean values for health, happiness and satisfaction by age group and sex. For health, males had higher numbers in all age groups; that is, they self-evaluate their health as better than females. In addition, there is a clear decreasing tendency in self-evaluated health levels with aging. Males were also happier and more satisfied in all age groups. Notice that there is a

general very slight increase in these indicators with age. Hence, although health quality decreases with age, happiness and satisfaction tend to be approximately constant for all age groups.

FIG. 7

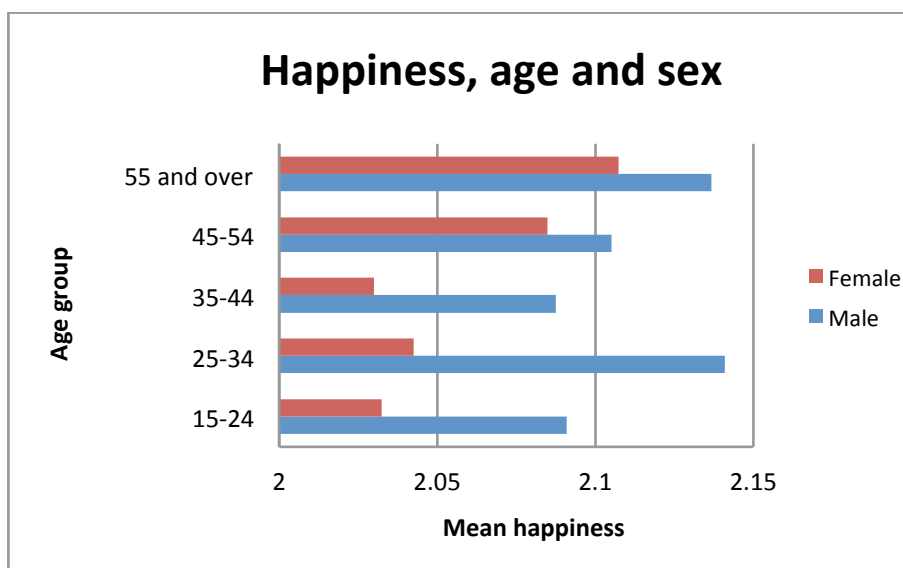
Mean health by age and sex in Brazil



Source: WVS, 1991, 1997 and 2006.

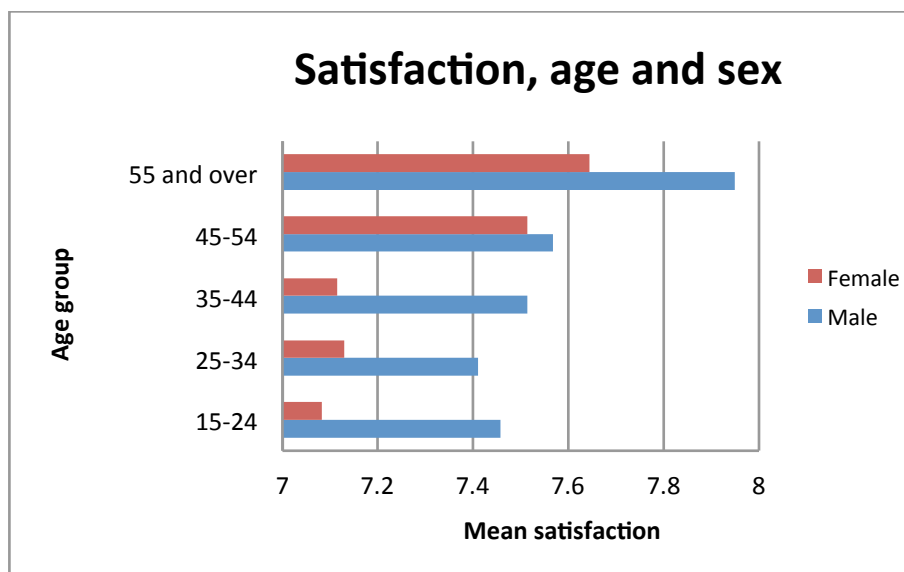
FIG. 8

Mean happiness by age and sex in Brazil



Source: WVS, 1991, 1997 and 2006.

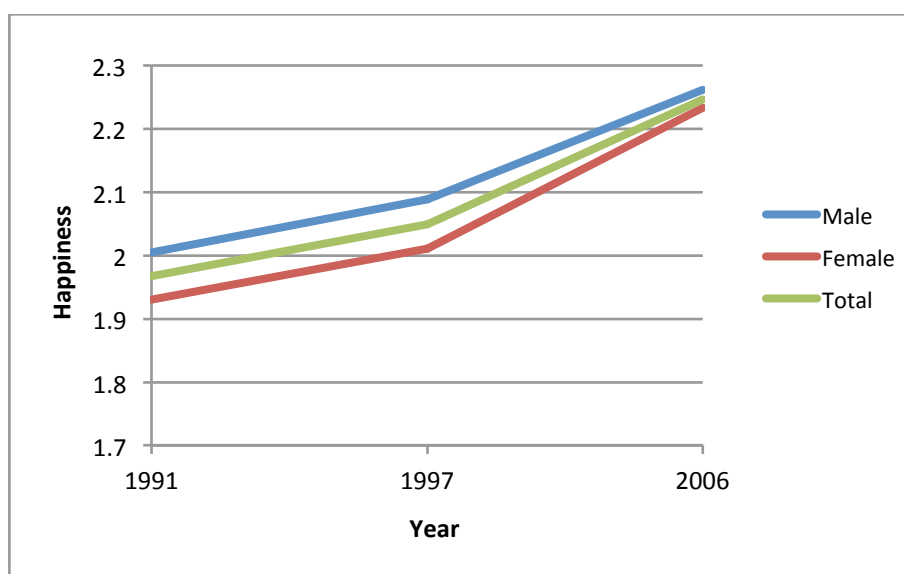
FIG. 9
Mean satisfaction by age and sex in Brazil



Source: WVS, 1991, 1997 and 2006.

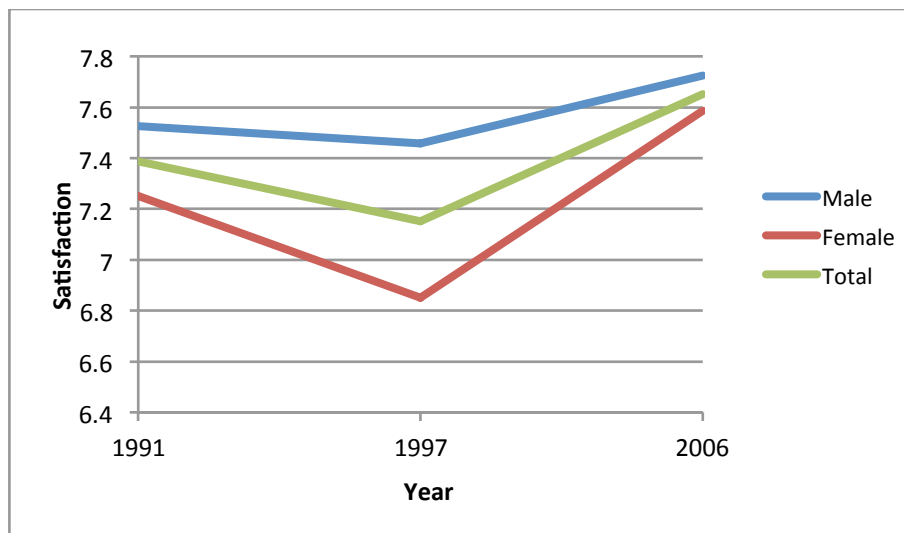
As observed in the last two graphs, in general, males tended to be happier and more satisfied than females in all age groups. The next two graphs present the time trends for happiness and satisfaction for males and females. Males had higher levels for both indicators in the three years; however, the figures suggest a slight tendency toward convergence for the sexes between the years 1991 and 2006.

FIG. 10
Time trends for happiness by sex in Brazil



Source: WVS, 1991, 1997 and 2006.

FIG. 11
Time trends for satisfaction by sex in Brazil

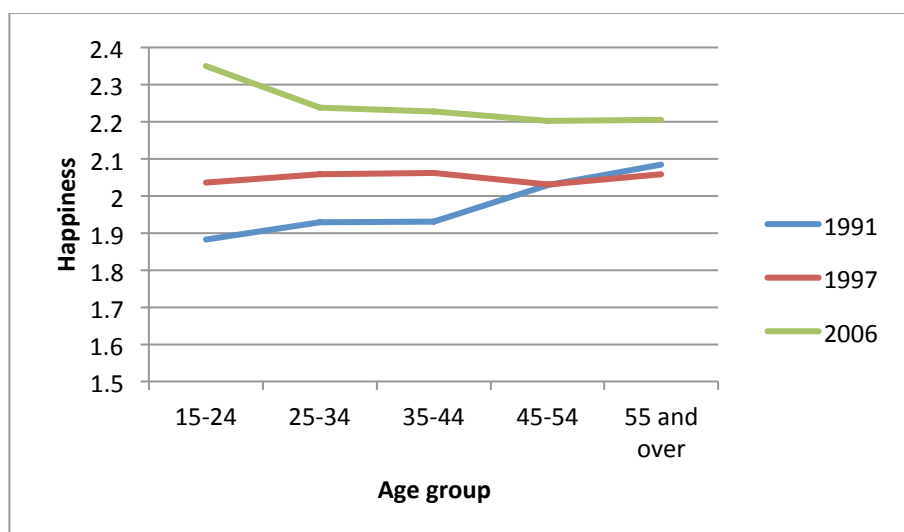


Source: WVS, 1991, 1997 and 2006.

I also observed that individuals in the last age group tended to be slightly happier and more satisfied than the rest of the population. The next two graphs clarify this issue, indicating a rather different perspective. Figure 12 describes the mean values for happiness for each age group by year. Notice that in 1991, individuals with age between 45 and over showed larger numbers for happiness. In 1997, the age groups were evenly happy, and in 2006, the younger the individual, the happier.

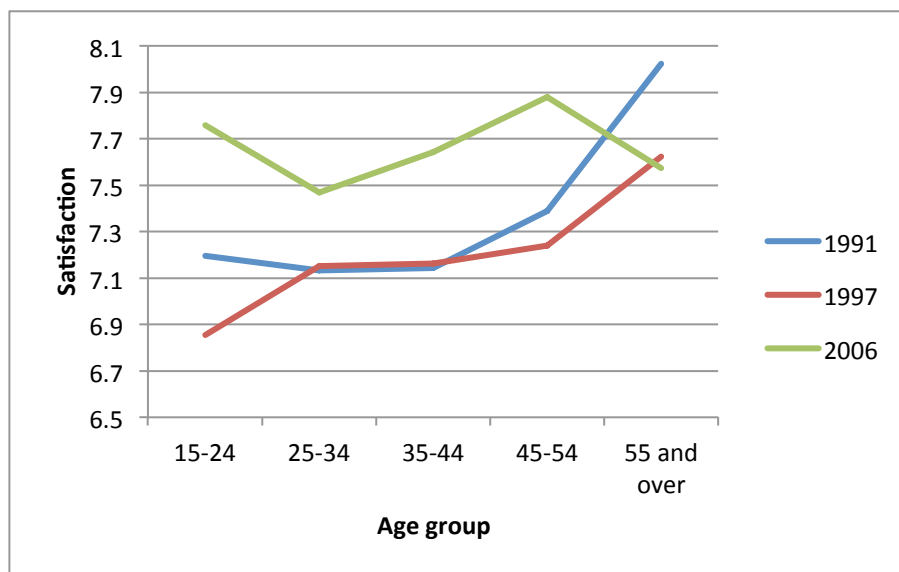
The next graph shows that for satisfaction trends were quite different. For the years 1991 and 1997, they show that older groups were more satisfied. However, in the end of the period, satisfaction was evenly distributed among the age groups.

FIG. 12
Time trends for happiness by sex in Brazil



Source: WVS, 1991, 1997 and 2006.

FIG. 13
Time trends for satisfaction by sex in Brazil



Source: WVS, 1991, 1997 and 2006.

7. MARITAL STATUS, HAPPINESS AND SATISFACTION IN BRAZIL

Marital status is one of the factors associated with happiness differentials (Blanchflower and Oswald, 2004; Laynard, 2005; Corbi and Menezes-Filho, 2006). In general, married people tend to be happier than others, as observed by Blanchflower and Oswald (2004) for the US and Britain. Similarly, Corbi and Menezes-Filho (2006) verified that married individuals in Brazil had a greater propensity to be happy than singles, divorced and widows. Laynard (2005) observed that to be divorced or in widowhood tends to decrease happiness much more than a huge reduction in income.

Why are married people happier than others? One explanation is due to the reverse causality: married people are happier because happier people get married in greater proportion (Slutzer and Frey, 2006). Also, in a retrospective evaluation, these authors observed that divorced individuals were already less happy in the years following marriage than when they were still single. That is, unhappier married individuals tend to divorce in greater proportion. Moreover, marriage tends to increase happiness due to different features. Married people tend to be wealthier and healthier. They also have a “natural” protective net for adverse events in life. For instance, marriage has a greater effect on happiness if spouses have similar levels of education, as exchanges tend to be more effective. A couple also gains in economy of scale, as spouses might specialize in specific activities (Frey, 2008).

This section compares happiness and satisfaction in Brazil by marital status. In WVS this variable was classified as follows: married, living together, divorced, separated, widowed and single/never married. Given the small numbers of divorced and separated, these categories were grouped.

Table 11 presents the results for the remaining five marital status categories for happiness and satisfaction by year. The clearest tendency is the one emphasized above: married individuals were happier and more satisfied in all years. Differences were statistically significant. For happiness, all the other marital statuses showed lower levels of happiness, when compared to married individuals with no clear trend between them. That is, there is a clear dichotomy in happiness between married and non-married. For satisfaction, although married individuals were also more satisfied than others, the other marital status categories did show some significant differences. Widowed individuals had a higher level of satisfaction than living together, divorced/separated or single/never married. This indicates a different evaluative perspective for happiness and satisfaction for this population group, probably due to old age effects, as older persons tend to be more satisfied with life.

TABLE 11
Distribution of individuals by marital status and their mean level of happiness and satisfaction

Marital status	Happiness			Satisfaction		
	1991	1997	2006	1991	1997	2006
Married	2.05	2.15	2.31	7.67	7.60	7.86
Living together as married	1.94	1.92	2.15	6.71	7.04	7.44
Divorced/Separated	1.85	1.94	2.20	7.20	6.74	7.30
Widowed	1.95	1.84	2.18	7.81	7.28	7.52
Single/Never married	1.86	1.98	2.23	7.03	6.61	7.60

Source: WVS, 1991, 1997 and 2006.

8. ETHNIC GROUP, HAPPINESS AND SATISFACTION IN BRAZIL

This section presents a discussion for ethnic groups. In WVS, most Brazilians were classified as black, colored, half breed of black and white, and white. I created an ethnic variable grouping the first three categories, following a common procedure for aggregating ethnic groups in Brazil, and obtained two groups: black/mulatto and whites. Other groups in the population, such as indigenous and Asian, were rare.

Which of these groups tends to be happier? For the US, Blanchflower and Oswald (2004) observed that white individuals were happier than blacks, even after controlling for the effect of other variables. Moreover, blacks tend to have lower income and educational level that also might affect happiness.

Table 12 presents the uncontrolled results for Brazil. First, notice that the distribution of ethnic groups in WVS in the years 1991 and 1996 does not resemble the one in Brazil, which is closer to the distribution of the WVS of 2006, more evenly distributed. Concerning happiness levels, differences were small, although a little higher for whites in the first two years. On the other hand, satisfaction is a little higher for non-whites in 2006. That is, some small significant differences were observed, however, with no clear distinction between the ethnic groups.

TABLE 12
Distribution of individuals by ethnic group and their mean level of happiness and satisfaction

	Population group	Year		
		1991	1997	2006
Numbers	Non-white	346	279	700
	White	1415	836	758
	Total	1761	1115	1458
Happiness	Non-white	1.91	1.95	2.24
	White	1.98	2.09	2.24
	Total	1.97	2.05	2.24
Satisfaction	Non-white	7.41	7.05	7.74
	White	7.38	7.20	7.56
	Total	7.39	7.15	7.65

Source: WVS, 1991, 1997 and 2006.

9. EDUCATION AND INCOME TRENDS FOR HAPPINESS AND SATISFACTION IN BRAZIL

This section discusses how happiness and satisfaction vary by income and educational level. As discussed in Laynard (2005) for countries, richer regions tend to be happier up to a threshold of approximately 15 thousand in annual per capita income. After this point, the increase in regional happiness with income is very small or insignificant. That is, from a regional perspective, income matters only for low-income countries. However, for a particular society, even for the more developed countries, the richest tend to be happiest.

This apparent paradox, the Easterlin paradox, is solved by two tendencies. First, individuals compare themselves with others, so, in a given society, the richer the individual, the happier they are. However, individuals get used to their new status due to the treadmill effect. For instance, an individual has a particular level of satisfaction. Due to an income increase this level might initially increase; nevertheless, after a period of time, as individuals tend to get accustomed to a new higher standard of consumption, the person returns to the original value. Hence, when comparing different countries with different per capita income, if the income is not low, overall happiness tends to be similar.

Therefore, if only one society is being analyzed, as in this paper, a positive correlation is expected between income and happiness, which was observed by many authors in different settings. Corbi and Menezes-Filho (2006) verified that richer individuals tended to be happier in Brazil. Blanchflower and Oswald (2004) observed that income was positively correlated with satisfaction in the US and in Britain.

From a slightly different perspective, Frey (2008) states that income does increase happiness, but only slightly and up to an income level. Kahneman et al (2006) arrived at a similar conclusion and proposed an explanation. Richer people spend a greater proportion of their time in active leisure (such as exercising) and eating, two activities positively correlated to happiness and satisfaction, and spend

less time in passive leisure (such as watching TV), which is associated with low levels of both. However, richer people also spend more time working and commuting, less enjoyable activities.

For education, Laynard (2005) stated that the direct effects are small, although the indirect effects due to income increase are noticeable. Blanchflower and Oswald (2004) observed that more educated individuals were happier in the US and in Britain, even after controlling for income. Similarly, Kahneman et al (2006) verified that the higher the educational level, the happier the person. Oreopoulos (2007) evaluated how changes in compulsory schooling laws modify high school dropout decisions. He shows that students with additional schooling are less likely to report poor health, depression or unemployment, and were more likely to report being overall satisfied with the life they lead.

In the Brazilian WVS databases, income is analyzed by the following question: in which level is your family income in Brazil, one being the lowest and ten the highest? Very few individuals considered themselves in the two highest income degrees. Hence, I grouped the last three levels and obtained an income variable with eight categories.

Table 13 shows the frequency, and the mean value for happiness and satisfaction in each level. Income increased happiness until the fifth group. From this group to the last, the results are similar and differences are not statistically significant. That is, this simple analysis corroborates the findings of Frey (2008) and Kahneman et al (2006). For satisfaction, all income groups fared the same with no statistically significant differences between them, suggesting the small influence of income on life satisfaction. These results indicate a small influence of income on well-being and only for low-income individuals.

TABLE 13
Distribution of individuals by income level and their mean level of
happiness and satisfaction

Income level	frequency	happiness	satisfaction
1	1254	1.98	7.34
2	885	2.01	7.3
3	603	2.09	7.44
4	423	2.14	7.38
5	461	2.26	7.51
6	243	2.20	7.56
7	185	2.19	7.77
8	211	2.33	7.75

Source: WVS, 1991, 1997 and 2006.

Concerning education, there were eight categories in the Brazilian WVS. As two categories were related to incomplete secondary level and another two were associated with high school graduation, I grouped both pairs and obtained a variable with six categories, which are shown in tables

14 and 15. These tables show respectively the mean value for happiness and satisfaction for each of the six educational levels by each specific year. The analyses should also be done by year due to the high increase in schooling levels in Brazil in the period.

For happiness, the overall results indicate that individuals with complete secondary school were the ones with lowest levels. The other schooling categories showed a similar level of happiness. For the 1991 data, the complete secondary level also showed lower levels of happiness. For 1997 and 2006, differences were not statistically significant. Notice that individuals holding a university degree did not show greater levels of happiness than others.

Individuals with complete secondary school also showed a lower level of satisfaction, and differences were statistically significant when compared to the two groups with lowest levels of education. Interestingly, the group that showed the best results for satisfaction was the one that inadequately completed elementary education, followed by individuals with some tertiary education. Note that individuals with a university degree again did not show greater levels of satisfaction.

These results indicate that there is no clear trend toward an increase in well-being with education, even though income varies sharply among these educational categories. Four slight tendencies were observed. First, individuals with only a high school degree tend to be unhappier and less satisfied with their life. This might be in part due to the lack of opportunity to make the transition from the secondary schooling level to the tertiary one. This transition is particularly troublesome in Brazil. Second, individuals who made this transition, but did not complete their degree tend to be happier and more satisfied. Some of them might be university students, and possibly happier than others. However, most are dropouts and, still, to have made the transition to higher education apparently has a small effect on well-being and/or is correlated with non-observables with positive impact on well-being. Third, individuals with higher education show similar levels of happiness than other groups, but slightly lower levels of satisfaction. Is this linked to higher expectations? Lastly, individuals in the lowest schooling level show similar levels for happiness; however, they were among the most satisfied. Could this reflect resignation? Lower expectations? Different evaluative perspectives? Or that they were older?

TABLE 14
Mean level of happiness by schooling level

	1991	1997	2006	Total
Inadequately completed elementary education	2.05	2.00	2.20	2.14
Completed (compulsory) elementary education	2.02	2.03	2.28	2.09
Incomplete secondary school	.	2.07	2.31	2.14
Complete secondary school	1.92	2.03	2.23	2.01
Some university without degree/Higher education - lower-level	.	2.07	2.38	2.26
University with degree/Higher education - upper-level tertiary	2.04	2.12	2.28	2.12

Source: WVS, 1991, 1997 and 2006.

TABLE 15
Mean level of satisfaction by schooling level

	1991	1997	2006	Total
Inadequately completed elementary education	8.12	7.79	7.74	7.78
Completed (compulsory) elementary education	7.67	7.24	7.67	7.57
Incomplete secondary school	.	7.06	7.64	7.23
Complete secondary school	7.23	7.04	7.50	7.26
Some university without degree/Higher education - lower-level	.	7.36	7.98	7.75
University with degree/Higher education - upper-level tertiary	7.28	6.51	7.51	7.20

Source: WVS, 1991, 1997 and 2006.

10. EMPLOYMENT STATUS, HAPPINESS AND SATISFACTION IN BRAZIL

The last topic discussed in this paper is employment status. Laynard (2005) describes unemployed individuals as tending to be unhappier than other groups in the population. The effect on happiness of being unemployed is quite substantial and is similar to the decrease in well-being among those who are separated, divorced or widowed. Moreover, local unemployment rates also have an impact on happiness level even if the individual is employed; the higher the rate, the greater the negative impact on happiness.

Unemployed individuals suffer from a loss of income; that is, there might be an income effect decreasing happiness. However, this is only part of the impact on an individual who is not working. Unemployment causes depression, anxiety, social isolation, loss of self-esteem, and of personal control (Laynard, 2005). Social norms, which in general regard working as normal, might also affect happiness levels of unemployed persons (Frey, 2008). Nevertheless, notice that there is also the reverse causality: unhappy individuals tend to be less productive and might show a greater propensity to become unemployed.

This decrease in happiness level was observed empirically by different authors. Blanchflower and Oswald (2004) analyzed happiness in the US and verified a negative coefficient for being unemployed. For Brazil, Corbi and Menezes (2006) also observed a negative correlation of happiness and being unemployed.

The next table presents distribution and mean values for happiness and satisfaction for individuals in different employment status by year. The WVS for Brazil had the following employment categories: full-time workers, part-time workers, self-employed, retired, housewives, students and unemployed. Among all these categories, this last group showed the lowest values for both indicators and differences were statistically significant. All the other categories showed similar values for both variables with statistically non-significant differences.

TABLE 16
Distribution of individuals by employment status and their mean level of happiness and satisfaction

		Year		
		1991	1997	2006
Numbers	Full time	653	454	436
	Part time	167	115	78
	Self employed	198	86	284
	Retired	165	113	199
	Housewife	343	180	156
	Students	69	55	73
	Unemployed	171	146	238
Happiness	Full time	1.96	2.10	2.33
	Part time	2.02	2.03	2.28
	Self employed	1.99	1.95	2.22
	Retired	2.09	2.07	2.21
	Housewife	1.96	2.08	2.20
	Students	1.95	2.05	2.34
	Unemployed	1.83	1.91	2.14
Satisfaction	Full time	7.48	7.40	7.73
	Part time	7.33	7.23	7.66
	Self employed	7.32	6.52	7.76
	Retired	7.74	7.72	7.69
	Housewife	7.40	7.01	7.78
	Students	7.12	7.05	7.80
	Unemployed	6.91	6.47	7.20

Source: WVS, 1991, 1997 and 2006.

11. ECONOMETRIC MODELS FOR HAPPINESS AND SATISFACTION IN BRAZIL

In the last sections, I presented some variables that might influence the levels of happiness and satisfaction. I observed that healthier individuals tended to be happier. Males tended to be slightly happier than females. The age group of 55 years old and above was to some extent happier than younger individuals, but with small differences. Married individuals were the happiest. The different ethnic groups showed similar values for happiness and satisfaction. For income, I verified that there was an increase in both indicators for low-income individuals and differences for the other groups were not significant. Education showed some unexpected results. Individuals with only a high school degree were the unhappiest, while the happiest were the ones with no education at all or with an incomplete tertiary schooling level. Individuals with a higher degree did not show higher levels of well-being. The unemployed were the unhappiest among all employment status categories.

All these results were obtained descriptively with an uncontrolled analysis. To further explore the effects of all these variables on happiness and satisfaction, this section discusses all these variables jointly with the use of econometric models. There are two dependent variables, one for each indicator. The happiness variable has three categories: not happy, quite happy and very happy. Hence, given that the data is categorical with a clear ordered structure, I applied ordered logistic models, as in

Blanchflower and Oswald (2004). Another option was to use an ordered probit, as in Corbi and Menezes-Filho (2006); however, the interpretation of the coefficients might be a little more demanding. The second dependent variable is the satisfaction one with ten different levels. Given this high number of categories, I assumed that the variable could be considered as a continuous one and used an OLS model, as in Frey (2008).

The explanatory variables are the ones presented in previous sections. Two dummies represent health, one for good health, and another for very good health. The reference is the poor and fair health group. Age is included as a continuous variable. Previous analysis suggested that the nonlinearities were weak or non-significant. Sex and ethnic group are represented by dummies, with one for males and whites. Income and education are also represented by dummies, one for each category, with the lowest level being the references in each group. For marital status, I also included dummies, with the married category being the reference. Similarly, for employment status, the reference is unemployed. Finally, I included two dummies for years, one for 1997 and another for 2006, with 1991 being the reference, as I observed some time trends in the previous sections.

I present different models for each dependent variable in the tables below, each one with different sets of explanatory variables. Coefficients with two asterisks were not significant, and with one asterisk were significant only at 10%. All other variables were significant at five percent Table 17 presents the results for 13 models for happiness and table 18 shows the results for five models for satisfaction.

I begin discussing the results for happiness presented in table 17. All 13 models included the two dummies for years. Both coefficients in all of them were positive and significant, indicating that, even after controlling for the other variables in the models, there was an increase in happiness between 1991 and 2006. Moreover, these coefficients for each year were of the same magnitude in all models, indicating the robustness of the results. The coefficients for the 1997 dummies ranged between 0.17 and 0.29. Notice that they were smaller when the models included the dummies for education. The coefficients for the 2006 dummies were larger than for the 1997 ones, ranging from 0.75 to 0.91.

The variables related to marital status show very robust coefficients in all models. Married individuals were happier than any other group, as all coefficients were negative and significant. All the other categories, cohabitation, separated/divorced, widowed and single/never married showed similar results. All coefficients for health were positive, significant and of the same magnitude for each health level, indicating a strong and robust association between health and happiness. The coefficients for the good health dummies varied between 0.62 and 0.63 and for the very good health ones ranged between 1.41 and 1.43. These two groups of variables were discussed first because they show clear and robust tendencies and will be used in the explanations of other variables.

In section 6, I observed that males tended to be happier than females. In models 1, 2, 4, 5, 6, 9, 11 and 12 the coefficients for the male dummy were positive and significant and of the same magnitude, around 0.20. Males were happier than females, as previous observed in the descriptive statistics. Models 3, 7 and 10 showed smaller coefficients and significant only at 10%. That is, after controlling for health level, which is higher for men, males and females differ very little in happiness. In models 8 and 13, the coefficients for the sex variable were not significant. Namely, after controlling for health level and employment status, differences between the sexes were not significant. Hence, were males happier than females? This might happen probably in part because they were healthier and differed in employment status.

I verified in section 8 that white individuals tended to be happier than non-whites in the first two years, but not in the last. In most models the coefficient for ethnic group was non-significant. In models 1, 4 and 6, the coefficients are positive and significant, this last one only at 10%, indicating that white individuals were happier, even after controlling for the effects of the other variables in the model. Comparing models 1 and 2, I observed that part of the difference in favor of white people is due to differences in marital status. That is, possibly white individuals were in greater proportion among the married individuals, the happiest ones. When comparing models 1 and 3 and 1 and 5, I verified that part of the differentials in happiness among the ethnic groups is probably because of differences in health levels and income, as whites might have a better level of both.

The coefficients for age were non-significant for most models, including model 1, the most basic. In models 2 and 9, the coefficients are negative and significant, suggesting that older individuals were less happy after controlling for marital status. Comparing both models, the results suggests that although individuals of different ages show a similar level of happiness, as older individuals tend to be in greater proportion among the married, the happiest individuals, the age effect is negative. In models 3 and 10, when the effects of health are controlled, the coefficients for age are positive, as older people tend to present lower levels of health. That is, age is not decisive in determining happiness, although it affects marital status and health levels, variables that influence happiness. Hence, the happiest individuals would be the old married individuals in good health.

Model 4 includes the variables for employment status. All coefficients were positive and significant, indicating that unemployed individuals were the most miserable. Notice that the results in model 11 do not change much for employment status, even after controlling the effects of income. That is, the disutility of unemployment has many channels and income is at most another one. In model 8, this general conclusion holds; however, after controlling for marital status and health, the results show some differences. One coefficient, for the self-employed, was non-significant and another, housewife, was significant only at 10%. The coefficients for part-time and full-time workers showed a smaller magnitude. These results suggest that the unemployed are the unhappiest group in part due to their health, which might be worse than for other groups, and marital status, possibly because they are in smaller proportion among the married. These results suggest the possibility of the existence of a group of very miserable individuals who are unemployed, in bad health and not married. Even after controlling for income and education, in model 13, the unemployed were among the unhappiest, although differences for self-employed and housewives were non-significant. Frey (2008) observed that self-employed in Germany were happier than other groups. In Brazil, this is not true, possibly because most self-employed work in occupations that require low levels of qualification and are intrinsically unstable.

Does money buy happiness? The answer from model 5 is yes. All the coefficients were positive, and they were significant at 10% in income range 3 and at five percent in income ranges from 5 to 8. In model 9, the effects of marital status are controlled and results do not change much. That is, married individual tend to be richer, but the results of model 9 do not decisively corroborate this effect. Model 10 includes the health variables, and results for income became less noteworthy. The results indicate that part of what money buys in terms of happiness is through better health. Model 11 includes the variables of employment status and the results for income do not vary much when compared to model 9. The same occurs with model 12 that includes the education variables when compared to model 9.

These results suggest that money buys happiness due to higher levels of health, but not because of differences in employment status or schooling levels.

Finally, does education affect happiness? Model 6 indicates that individuals with higher education and persons who had an incomplete high school level were happier. Model 12 includes the income variables, and the coefficients for the education variables for some university level or a university degree lose their significance. That is, higher education buys happiness through higher income, not because it has an intrinsic value. Comparing models 12 and 13, two changes occur for the education variable coefficients. The first is that the coefficients for incomplete high school and for the ones with less than elementary school, which were positive in model 12, turned out to be non-significant in model 13, after controlling for the effects of health, marital status and employment status. These results suggest that for these levels of education, better health or lower levels of unemployment might explain the differences in happiness level. The second change is that individuals with a high school degree were equally happy as persons with less than elementary school in model 12, but after controlling for the other variables in model 13 they were the most miserable. This result suggests that these individuals might have a larger perspective of life that is not fulfilled, given the many problems in the schooling transition between high school and university levels in Brazil.

TABLE 17
Econometric models for happiness – ordered logistic – part A

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Male	0.21	0.20	0.11*	0.24	0.19	0.20
White	0.15	0.10**	0.10**	0.14	0.12**	0.13*
Age	0.00**	-0.01	0.01	0.00**	0.00**	0.00**
Married		Ref.				
Cohabitation		-0.58				
Separated/Divorced		-0.52				
Widowed		-0.36				
Single/Never married		-0.55				
Poor and fair health			Ref.			
Good health			0.63			
Very good health			1.43			
Unemployed				Ref.		
Students				0.49		
Housewife				0.47		
Retired				0.47		
Self-employed				0.30		
Part time				0.43		
Full time				0.46		
Income 1					Ref.	
Income 2					0.04**	
Income 3					0.17*	
Income 4					0.16**	
Income 5					0.48	
Income 6					0.30	
Income 7					0.33	
Income 8					0.49	
Less than elementary school						Ref.
Elementary school						0.16**
Less than high school						0.24*
High school						-0.01**
Some university level						0.32*
University degree						0.24*
1991	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
1997	0.27	0.29	0.27	0.28	0.27	0.20
2006	0.89	0.96	0.83	0.94	0.75	0.87
Cut-off 1	-1.03	-1.58	-0.15	-0.70	-0.92	-0.97
Cut-off 2	1.69	1.17	2.70	2.04	1.81	1.75
Log likelihood	-4119	-4105	-4090	-4080	-3980	-4053

Source: WVS, 1991, 1997 and 2006.

Note: * p < 0.10, **p < 0.05.

TABLE 17
Econometric models for happiness – ordered logistic – part B

	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13
Male	0.10*	0.11**	0.19	0.10*	0.22	0.18	0.07**
White	0.06**	0.07**	0.08**	0.09**	0.11**	0.11**	0.07**
Age	0.00**	0.00**	-0.01	0.01	0.00**	0.00**	0.00**
Married	Ref.	Ref.	Ref.				Ref.
Cohabitation	-0.52	-0.51	-0.55				-0.51
Separated/Divorced	-0.51	-0.46	-0.51				-0.46
Widowed	-0.38	-0.45	-0.33				-0.49
Single/Never married	-0.55	-0.57	-0.57				-0.57
Poor and fair health	Ref.	Ref.		Ref.			Ref.
Good health	0.63	0.62		0.62			0.63
Very good health	1.42	1.41		1.41			1.42
Unemployed		Ref.			Ref.		Ref.
Students		0.47			0.43		0.39
Housewife		0.22*			0.45		0.16**
Retired		0.51			0.48		0.50
Self-employed		0.19**			0.26		0.15**
Part time		0.31			0.42		0.31
Full time		0.27			0.44		0.26
Income 2			Ref.	Ref.	Ref.	Ref.	Ref.
Income 2			0.03**	-0.02**	0.02**	0.06**	0.01**
Income 3			0.15**	0.07**	0.14**	0.20	0.09**
Income 4			0.13**	0.05**	0.13**	0.18**	0.07**
Income 5			0.46	0.38	0.48	0.51	0.44
Income 6			0.26*	0.13**	0.26*	0.31	0.13**
Income 7			0.30*	0.07**	0.30*	0.34	0.10**
Income 8			0.51	0.34	0.46	0.50	0.40
Less than elementary school						Ref.	Ref.
Elementary school						0.15**	0.10**
Less than high school						0.21*	0.12**
High school						-0.08**	-0.23
Some university level						0.18**	-0.05**
University degree						0.08**	-0.11**
1991	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
1997	0.29	0.28	0.29	0.27	0.28	0.19	0.17
2006	0.90	0.91	0.83	0.75	0.81	0.71	0.75
Cut-off 1	-0.70	-0.56	-1.50	-0.12	-0.63	-0.92	-0.68
Cut-off 2	2.19	2.35	1.27	2.75	2.12	1.82	2.24
Log likelihood	-3944	-3885	-4064	-3971	-4037	-4089	-3861

Source: WVS, 1991, 1997 and 2006.

Note: * p < 0.10, **p < 0.05.

Table 18 presents the results for five models for satisfaction with the same explanatory variables discussed in the previous table. Time trends do not resemble the ones for happiness. Satisfaction decreased between 1991 and 1997 and increased between 1991 and 2006.

Moreover, six general trends are noticed. Healthier individuals tend to be more satisfied with their life, as all coefficients were positive and significant. The results were also robust as the coefficients had the same magnitude for each health category. Unemployed persons were the least satisfied. These two trends were also observed for happiness. Four other trends were slightly different between happiness and satisfaction. Males showed higher levels of satisfaction in all models, although only in a majority of models for happiness. For marital status, married individuals were the happiest and were more satisfied than all other groups except the widowed. High-income individuals were more satisfied and happier when schooling levels were not included in the models. Differently, for satisfaction, as can be observed in model 5, income loses significance after controlling for education, an effect that was not observed for happiness. Concerning age, for happiness most coefficients were non-significant. In two models, which included the marital status dummies, the coefficients were negative and in other two, with the health dummies, the coefficients were positive. A similar picture is observed for satisfaction with positive coefficients when the health dummies were included in the model and non-significant coefficients otherwise.

All the other results differed when comparing happiness and satisfaction. While both ethnic groups were equally happy, after controlling for the effect of marital status (model 2), health (model 3) or income (model 5), for satisfaction the results were different. Model 1 shows that ethnic groups did not differ concerning satisfaction level, as observed for happiness. Nevertheless, after controlling for health status or income, both superior for whites, non-whites were more satisfied with their life. Finally, for happiness, the education dummies indicated that more educated individuals tend to be happier (model 6), but mostly due to the indirect effect of income increase. After controlling the effects of employment and income (model 13), a negative sign for high school graduates was observed. For satisfaction, this last schooling group also showed a negative sign, as observed in model 5, indicating that this group is unhappier and less satisfied with life. This model also shows a negative sign for other categories, including the dummy for university degree. Why are individuals with the lowest level of education more satisfied with life? Resignation? Lower expectation? Different evaluative perspective?

TABLE 18
Econometric models for satisfaction – OLS

	Model 1	Model 2	Model 3	Model 4	Model 5
Male	0.36	0.27	0.31	0.36	0.27
White	-0.13**	-0.18	-0.19	-0.14*	-0.14*
Age	0.00**	0.01	0.01	0.00**	0.01
Married	Ref.	Ref.	Ref.	Ref.	Ref.
Cohabitation	-0.67	-0.59	-0.56	-0.66	-0.60
Separated/Divorced	-0.59	-0.56	-0.48	-0.59	-0.49
Widowed	-0.13**	-0.13**	-0.14**	-0.10**	-0.20**
Single/Never married	-0.60	-0.59	-0.55	-0.62	-0.54
Poor and fair health		Ref.	Ref.		Ref.
Good health		0.58	0.56		0.61
Very good health		1.17	1.15		1.19
Unemployed			Ref.		Ref.
Students			0.64		0.59
Housewife			0.46		0.40
Retired			0.51		0.51
Self-employed			0.34		0.33
Part time			0.36		0.39
Full time			0.44		0.49
Income 1				Ref.	Ref.
Income 2				-0.02**	-0.04**
Income 3				0.01**	-0.04**
Income 4				-0.13**	-0.16**
Income 5				0.00**	0.00**
Income 6				0.02**	-0.03**
Income 7				0.38	0.26**
Income 8				0.26*	0.18**
Less than elementary school					Ref.
Elementary school					-0.19**
Less than high school					-0.31
High school					-0.48
Some university level					-0.13**
University degree					-0.65
1991	Ref.	Ref.	Ref.	Ref.	Ref.
1997	-0.18	-0.19	-0.19	-0.18	-0.30
2006	0.32	0.23	0.26	0.30	0.12**
Constant	7.47	6.66	6.29	7.46	6.73
R ² adjusted	0.0144	0.0264	0.0448	0.0211	0.0147

Source: WVS, 1991, 1997 and 2006.

Note: * p < 0.10, **p < 0.05.

12. CONCLUSIONS

Happiness is nowadays a quite popular field of inquiry among economists and social scientists. This paper discussed the determinants of happiness in Brazil using the World Values Survey (WVS) database.

First, the paper presented descriptive statistics with a number of variables that might influence levels of happiness and satisfaction. Healthier individuals were found to be happier and more satisfied. Males tended to be slightly happier and more satisfied than females. Those 55 years old and older were inclined to be happier and more satisfied than younger individuals, but differences were small. Married individuals were the happiest among all marital status categories and also the most satisfied. The different ethnic groups showed similar values for happiness and satisfaction. I verified that there was an increase in both well-being indicators with income, but only for low-income individuals, as differences for the other groups were not significant. Education showed some results that were unexpected at the outset. Individuals with only a high school diploma were the most miserable, while the happiest were those with an incomplete tertiary schooling level and the most satisfied were this same group and the ones with no education at all. Individuals with a higher degree did not show higher levels of well-being. The unemployed were the unhappiest and the least satisfied among all employment status categories.

Then I discussed the determinants of happiness and satisfaction with life with the use of econometric models. Given that the data for happiness is categorical with a clear ordered structure, I applied ordered logistic models. For satisfaction, given the high number of categories, I assumed that the variable could be considered as a continuous one and used an OLS model. The main general results for happiness and satisfaction are detailed below.

Married individuals were happier and more satisfied than any other group. There was a strong, robust and positive association between health and well-being. Males and females differed very little in happiness and satisfaction. White individuals were a little happier than non-whites in part because they were in greater proportion among the married individuals, the happiest ones, and also probably because of differences in health levels and income. After controlling for these aspects, differences were non-significant for happiness and non-whites were more satisfied with their life than whites. The coefficients for age were non-significant for most models. Although age is not decisive in determining happiness, it affects marital status and health levels, variables that influence happiness and satisfaction. Hence, the happiest individuals would be old married individuals in good health. Unemployed individuals were the most miserable. Does money buy happiness? The answer is yes. Money buys better health and this has a positive impact on well-being. Does education matter? A little bit. Individuals with higher education and persons who had not completed high school were happier than others. Apparently, higher education buys happiness through higher income, and also due to lower levels of unemployment and/or a better health, not because it has an intrinsic value. When all these effects were controlled, individuals with a high school diploma were the most miserable. This result suggests that these individuals might have a larger perspective of life that is not fulfilled, given the many problems in the schooling transition between high school and university levels in Brazil. The

ones with no education or with an incomplete tertiary degree were among the happiest and most satisfied with life.

To conclude, as stated by Laynard (2005), economists commonly equate changes in happiness with changes in purchasing power. This might be considered a very narrow perspective of reality. The insights of the psychology of happiness, which are applied to empirical estimations such as the ones discussed above, make it possible to develop new visions of lifestyle, well-being and social policies.

This first paper of the series is complemented by four others. The second paper of the series discusses some other variables that might affect well-being in Brazil, providing a more extended overview of the determinants of happiness than the one provided here, using the same three databases. The third paper presents the determinants of happiness in Brazil in more detail using only the most recent database, as some variables were not present in all databases. The fourth paper is mostly based on the findings of the first two papers of the series and uses data of the same three years. However, the main objective is to analyze the dynamics of happiness and satisfaction with life using an Age-Period-Cohort (APC) approach. The last paper of the series complements this overview about the determinants of happiness in Brazil, discussing specifically the most miserable and the most blissful in Brazil in 2006.

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