



WHAT CONTRIBUTES TO HAPPINESS: EVIDENCE FROM BARBADOS

by

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ABSTRACT

Real Gross Domestic Product (GDP) per capita is a relatively weak indicator of a country's well-being due to some well known reasons. Such reasons include: its failure to account for income distribution and the magnitude of crime and violence in a country. Happiness on the other hand, once measured accurately, should be a much better gauge of the experienced well-being of an economy. The two main objectives of this study are: (1) evaluate the level of happiness in Barbados and among various demographic groups and (2) unveil the social, economic, health and religious factors that influence happiness in the country of interest. The author used questionnaires to extract the necessary data from the sample of individuals surveyed. The results of the study suggest that on average persons living in Barbados are slightly happy. The descriptive statistics indicate that males are minutely happier than females. Evidence also suggests that Hindus are the happiest compared to persons of other religions. Employed persons are shown to be happier than full-time students and those who are unemployed. Using an Ordinary Least Squares (OLS) regression model, age, income and marital status are found to be the statistically significant contributors of happiness in Barbados.

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Key Words and Phrases: Happiness; Subjective well-being; Satisfaction with Life

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1. Introduction

Real Gross Domestic Product (GDP) per capita is a weak indicator of a country's overall well-being (Coombs, 2006). It does not sufficiently account for: (1) income inequality; (2) the quality of goods and services offered; (3) environmental factors for example, pollution and; (4) the presence of crime and violence. With recent times some economists turned to indices of happiness as an alternative measure of social development and well-being. Relying on income measures of well-being alone can hide a great deal of social turmoil (Graham, 2004).

The term happiness¹ may be defined as a state of well-being distinguished by emotions of contentment and joy. The importance of research within the field of subjective well-being is outlined by authors such as Frey and Stutzer (2002), Di Tella, MacCulloch and Oswald (1999) and Graham (2004). A sustained high level of happiness should lead to a more productive economy. For instance, if a society is generally satisfied with their lives and environment, the end result should ultimately be greater output. Psychological stability and productivity may be seen compliments, because workers who suffer with emotional or mental unrest can not focus effectively on daily tasks. Graham (2004) affirmed that happier people reap more income, are healthier and perform better in labour markets. The author reported that when income is regressed on the previous period's residual happiness (unexplained by socio-economic and demographic variables) while controlling for the previous period's income as well, the result was positive and significant. This finding suggests that persons with happy attitudes earn higher incomes than individuals with gloomy attitudes. A possible explanation for this finding is that happier people have more positive attitudes and hence perform better compared to unhappy people. Therefore, those who are more positive stand a better chance of getting a pay increase or job promotion.

Happiness research can also yield a better measure of the trade-off between inflation and unemployment. Numerous studies found that unemployment carries a pecuniary cost, as well as

¹ Throughout this study the terms subjective well-being, satisfaction and happiness will be used interchangeably. Di Tella, MacCulloch and Oswald (1999) found a positive correlation between life's satisfaction and happiness. This relationship was reiterated by Frey and Stutzer (2002) who stated that happiness can be captured by questions on one's satisfaction with their life.

an even higher non-pecuniary cost. Frey and Stutzer (2002) noted that by analysing the satisfaction one gains from life, light can be shed on whether people can successfully forecast their own future utilities. Within the same study, the authors also argued that subjective well-being is a much wider concept than decision utility. Frey and Stutzer contended that subjective well-being includes both experienced utility as well as procedural utility, and therefore offers a better understanding of satisfaction. Frey and Stutzer (2003) and Graham (2004) both stated that the study of happiness can richly augment present utility theory. Furthermore, Frey and Stutzer reasoned that reported subjective well-being can be used as a proxy for utility.

One must also note that economics to great extent is the study of consumer behaviour, which is highly influenced by human emotions like, being happy or unhappy. Research in the area of subjective well-being is also useful in human resource management, politics and marketing strategy.

Some literature suggests that happiness doesn't necessarily depend on income. It is argued that in some economies, although real GDP is on the continual rise, the happiness level remains somewhat unchanged. However, it must be understood that the extent to which income boosts a person's happiness depends on how close that person is to the poverty line. Take for instance; an individual who is below or slightly above the poverty line, a substantial increase in that person's permanent income can move him/her from a state of absolute poverty to a position where more than just the basic minimum can be afforded. In this case an increase in income can add to happiness. Another interesting finding that emerges from the literature is the existence of what the author refers to as the point of inflexion on the happiness curve. It is said that each individual has a certain level of income which would cover their basic needs plus certain wants. In other words, this level of income allows them to be comfortable according to their standards. Any additional income gained beyond this level will contribute less and less extra happiness (diminishing returns).

This study adds to the body of previous research by seeking to measure the happiness in Barbados and selected segments of the Barbadian population. The study also attempts to establish the determinants of happiness in the country of interest. The author will first determine

whether or not Barbadians are happy. Second, evaluate the levels of happiness within various demographic groups such as, age, sex and income groups. Thirdly, the social, economic, health and religious factors that influence happiness will be unveiled using regression analysis.

To the knowledge of the author, up to this point in time no such study has ever been undertaken in the Caribbean. Barbados represents the case of a small open economy with very few natural resources. Despite its size and limited natural resources, Barbados has consistently been ranked within the top 50 among more than 170 countries on Human Development Index (HDI) from the time the index was established in 1990.

The remainder of the paper is organised as follows: Section 2 provides some previous literature in the field happiness, the data and methodology are reported Section 3. Empirical results are set out in Section 4 and concluding remarks are given in Section 5.

2. Literature Review

Psychologist and sociologist have been studying concept of happiness for decades. Within the field of economics authors such as, Easterlin (1974), Morawetz et al. (1977), Clarke and Oswald (1994), Frank (1997), Dixon (1997), Ng (1997) and Oswald (1997) have made notable contributions to the study of happiness in earlier times. When one analyses literature on happiness, some interesting findings come to light which can be used to advise economic policy. Frey and Stutzer (2003) stated “Economic activity is certainly not an end in itself, but only has value in so far as it contributes to human happiness.”

2.1. *Employment Status and Happiness*

Unemployment appears to be a major source of unhappiness for most people. Oswald (1997) noted that the worst thing about being made redundant isn't the lost of disposable income but it is the non-pecuniary distress of not having a job. In a study done by Di Tella, MacCulloch and Oswald (1999) on 12 European countries over period 1975- 1991, the misery index which is simply the sum of the rate of inflation and the unemployment rate, was found to be negatively

correlated with happiness. However, when the two rates were taken as separate explanatory variables, unemployment had a stronger adverse impact on happiness than inflation. By using an ordered logit model Blanchflower and Oswald (2003) also concluded that unemployment has a negative impact a person's subjective well-being. The bulk of literature on subjective well-being go against the view of new classical economics which states that unemployment is voluntary and people leave due to poor wages or overly heavy work loads.

Frey and Stutzer (2003) provided evidence from Germany which shows that unemployment leads to dissatisfaction with one's life. The authors reported that a change in working status from being employed to unemployed is associated with an average of 0.68 points less satisfaction with life, while moving from being unemployed to employed increases satisfaction on average by 0.84 points. The study also showed that on average, people who lose their job experience a 0.78 point drop in satisfaction with life measured on a scale from 0 to 10. This finding was estimated in a regression where time-invariant individual characteristics, as well as income and other factors like marital status, were taken into account. Hence it is further confirmed that there are high non-pecuniary costs of be unemployed. In light of the findings, one may be led to believe that employment give people a sense of identity, the mere idea of being affiliated with some business institution induces psychological security. Although wages may be poor and the work load may be heavy, the non-pecuniary aspect of being employed deters individuals from being voluntarily unemployed.

2.2. *Income and Happiness*

There is an ongoing debate among social scientists on the relationship between income and happiness. Oswald (1997) argued that in a developed country economic improvement only resulted in a minute quantity of extra happiness. Between 1946 and 1991 in the United States of America real income per capita rose by a factor of 2.5, but over that same time period average happiness remained relatively fixed (Frey and Stutzer, 2002). Survey results show that many people in most OECD countries rate themselves as fairly to very happy and satisfied with their lives, slightly independent of income levels (Coombs, 2006). Easterlin (2001) found that by using the static approach of cross section data, the relationship between income and happiness is significant and positive. However, Easterlin also noted that over time average happiness seem to

be fairly constant throughout the life cycle pattern irrespective of income levels. The findings of Frey and Stutzer (2002) strongly support these results given by Easterlin.

A number of possible reasons were given for the lack of correlation between average happiness and income over time by authors like Easterlin (1974; 2001), Coombs (2006), Frey and Stutzer (2002), and Diener and Seligman (2004). The psychological theory of adaptation offers a strong argument for why the average happiness of people is relatively constant over time. One of the arguments is; if an individual's income increases, he/she is made happier initially, but with the progression of time people adapt to higher incomes. Therefore satisfaction tends to diminish as one adapts to greater income. This process is known as the hedonic treadmill². A second reason for the paradoxical relationship between happiness and income is the insatiable wants of human beings. Higher income is associated with greater aspirations. After the attainment of basic needs, people are then driven to achieve more and more goods and services as well as immaterial accomplishments. For example, gaining diplomatic status provides some level of temporary happiness, but on the other hand it increases the aspiration of acquiring an even higher diplomatic position. Failure to reach these goals and aspirations lead to great disappointment and unhappiness.

Easterlin (2001) stated that people seem to think they were not too happy in the past and will be happier in the future. This idea is adopted because humans believe current aspirations will remain unchanged over time, as income expands. However aspirations and income grow together, therefore experienced happiness is significantly different from expected happiness. As a result present choices are based on faulty projections.

It was suggested by Easterlin (1974) and Layard (2005) that individuals gain a sense of satisfaction by knowing they are not worst off than the people around them. For instance, if your neighbour is making more money than you or is doing better than you, such situations seem to make persons unhappy. People tend to make social comparisons: happiness is relative. This finding has been used by some economists like Andrew Pigou to justify redistributive taxation, since there would be no loss in happiness if disposable income of all the rich is reduced.

² See Helson (1964), Brickman and Campbell (1971), Parducci (1995) and Fredrick and Loewenstein (1999).

Stutzer (2003) employed microeconomic techniques to determine the relationship between satisfaction with one's life, income aspirations and relative income. His data was obtained from a survey of selected households in Switzerland. He found that higher aspirations (measured by the gap between aspired income and actual income) negatively impacted on the subjective well-being. This finding is consistent with literature presented by economists and psychologists.

On the other hand, Stutzer also showed that higher individual aspiration levels are positively associated with higher average community income. However, to fully test whether or not social comparisons affect aspirations; a proxy for people's interaction with other community members was incorporated into the modeling process. This was not difficult to achieve because each person in the sample was asked if they communicated with their neighbours. Stutzer found that a 10 percent increase in average community income translated to a 1.2 percentage increase in the aspiration level, while for people who mingle with their neighbours; the effect was 1.1 percentage points greater. Since higher income aspirations have an adverse impact on a person's happiness, it can be concluded that social comparisons affect aspirations and hence alters happiness.

2.3. Marital Status and Happiness

A number of earlier studies such as: Bradburn (1969), Glenn (1975), Campbell et al. (1976), Andrews and Withey (1976) and Verbrugge (1979) found that being married is associated with higher personal satisfaction. However, Glenn and Weaver (1981) sought to determine the contribution of marital happiness to global happiness using data from the United States covering the period 1972-1978. Glenn and Weaver also made an attempt to disclose differences in marital happiness between men and women as well as blacks and whites. The findings of Glenn and Weaver imply that for the most part marital happiness has a greater positive impact on an individual's overall happiness when compared to the other 7 independent variables (satisfaction with work, financial situation, community, nonworking activities, family life, friendships and health) incorporated into the model. It was only for black full-time working men that the finding differed. Black men seem to get greater satisfaction from their work than from their marriages. However, the authors concluded that since personal happiness of married people is largely

dependent on the quality of their marriage, family life education should be given high priority in the U.S. school system and more research in the area of marriage life is needed.

Esheman and Stack (1998) stated that previous research on the relationship between happiness and marriage support the claim that married people are happier than single individuals. However, they also stated that most of the studies are based on data from the U.S. alone and previous literature failed to address the issue of cohabitation status. They noted that it is possible that marriage do not increase happiness no more than just simply living with a significant other. In an attempt to bridge the gap in the literature, Esheman and Stack analysed data from 17 industrialised countries using a multiple ordinary least squares regression approach. The issue of cohabitation and other variables was controlled for in the study. The researchers found that by controlling for socio-demographic variables, married people were shown to be happier than people who are not married. The regression coefficient for married persons was substantially larger than that of the cohabitation variable. On the other hand, it was shown that cohabitants are happier than single persons. Out of the 17 countries investigated, 16 showed marital status to be positively linked with happiness. Being married was also found to positively influence financial satisfaction and self reported health. Esheman and Stack concluded that financial satisfaction and health are two channels through which marriage can affect happiness. This finding is not surprising since financial satisfaction and self reported health were shown to have a greater positive impact on happiness than marriage.

In an effort to establish the direction of causation between marriage and happiness, Frey and Stutzer (2006) used data from the Germany Socio-Economic Panel Study spanning the period 1984 to 2000. First the authors employed microeconomic techniques to analyse the differences in contribution of marriage, cohabitation and living without a partner. Their findings were the same as those reported by Esheman and Stack (1998) in their study of 17 industrialised economies. The authors then took a graphical approach to answer the question of interest, 'Does marriage make people happier, or do happy people get married?'. Although Frey and Stutzer used graphics extensively in their study, demographic variables such as, sex, age, education level, household income among others were still taken into consideration. They realised that singles at the age of 20 who know they will get married are generally more satisfied with their

life than those who indicated they will not get married. Around 30 years of age those who will marry show no difference in happiness compared to person who have no plans of getting married. However, after 30 years of age, prospective spouses are once more happier than singles with no intentions of getting married. Married people up until the age of 34 were shown to be happier than prospective spouses.

The findings of Frey and Stutzer (2006) may lead one to conclude that happy people are generally the ones who get married. Nonetheless, Esheman and Stack (1998) suggests that the two scenarios are not mutually exclusive. It is quite possible that persons who are more satisfied with their life get married but at same time marriage can augment the happiness of not so happy individuals.

2.4. *Religiosity and Subjective Well-being*

The relationship between subjective well-being and religion has been studied by a number of authors such as: Field et al. (1960), McCann (1962), Snyder and Spreitzer (1974), Campbell et al. (1976), Ellison et al. (1989) and Hadaway (1978) just to name a few. Most of the studies suggest that religious involvement is positively linked with happiness. The literature provides 4 general views on how religion adds to an individual's satisfaction with life. The first view is that of social integration. It is said that religious groups offer excellent social support to its members, primarily in the form of free private counseling and open discussions about life's problems. Second, religion serves as a resource base for believers. The idea of interacting with an all-powerful being who is there to help, promotes positive feelings among individuals. Third, for persons who are deprived or oppressed, religion acts to compensate those bad conditions by providing hope of a better future. Fourth, the discipline and values gained from religiosity can lead to good family life and business relations.

Hadaway (1978) sought to rebut a claim made by Campbell et al. (1976) about religious people and satisfaction with life. Campbell et al. reported an inverse relationship between religious mindedness and both mental well-being and personal competence. Due to these findings, Campbell et al. concluded that religion do not serve as a resource in the United States. However, Hadaway employed the same data set and variables as used by Campbell et al., to show that no

such negative relationship exists for religion and satisfaction with life. The findings of Hadaway present a positive yet weak correlation between religious mindedness and all other indices of satisfaction with life. He summed up his study by stating that his findings are not meant to degrade the work of Campbell et al., but simply to enhance the literature by identifying two incorrect signs in Campbell et al.'s study.

The significance of religious participation to subjective well-being was explored by Ellison (1991) in a comprehensive study using data from the 1988 edition of the General Social Surveys (GSS). Ellison took subjective-well as a two dimensional concept, consisting of the affective state and cognitive state. The affective state is measured by perceived personal happiness, while the cognitive state is measure by a person's satisfaction with their overall life. The author argued that personal happiness is a more transient assessment of life compared to a person's satisfaction with their life. Since Ellison saw subjective well-being as two dimensional, he employed personal happiness and satisfaction with life as two separate dependent variables in his paper. Furthermore, three religiosity indicators were employed by the study: (1) religious attendance measured by the regularity of attendance at religious services, (2) divine interaction captured by questions of closeness to God and frequency of prayer and (3) existential certainty as measured by questions on religious allegiance. However, religious attendance is included solely to investigate religion as a basis of social integration.

The results of Ellison (1991) multiple regression analysis showed that both divine interaction and existential certainty have a statistically significant positive impact on satisfaction with life, while the only religious variable that influenced personal happiness was existential certainty. Religious attendance was statistically insignificant in both models. The positive influence of existential certainty on life satisfaction is more prominent for older people and those with low formal education. The author also looked at religion from a denominational level. He found that nondenominational Protestants, liberal Protestants and nontraditional denominations such as the Mormons and Jehovah's Witnesses enjoy greater satisfaction with life than persons who are unaffiliated with any religious group. Among all the independent variables incorporated in the study, marriage had the greatest positive impact on subjective well-being in both models.

Using longitudinal U.S. data from the National Survey of Families and Households (NSFH), Dehejia et al. (2007) showed that religious participation as measure by attendance of religious services buffers happiness against adverse income shocks. The sample was then broken down into blacks and whites and tested separately. It was shown that this finding was influenced more so by blacks than whites. Furthermore, for whites the degree to which religious participation insures happiness against income shocks was calculated to be about a $\frac{1}{3}$ but it was statistically insignificant. On the other hand, among blacks religious participation fully insured happiness against income changes, this calculation was statistically significant.

2.5. *Satisfaction with Life and Other Demographic Indicators*

Throughout the years research in the field of happiness has diversified into a number of unexplored territories. One such study was conducted by Blanchflower and Oswald (2004a); the authors investigated the empirical patterns in money, sexual behaviour and happiness. Blanchflower and Oswald used data obtained from the GSS of the United States covering the period 1988-2000. The authors employed an ordered logit model to derive the results of the study. This study found that sex has a strong positive impact on happiness in the United States. The results show that men in general have more sex and have more sexual partners than women. The evidence suggests highly educated females tend to have fewer sexual partners. The study also reported that it only takes 1 sexual partner to maximize happiness. It was found that homosexuality has no significant impact on happiness, but its influence was recognised in high sexual activity. The research also shows that money only buys more sexual partners but not more sex. However, this particular finding was only statistically significant among males.

In addition to the results, Blanchflower and Oswald (2004a) outlined one major limitation of the GSS. The major drawback of the surveys is the way in which they are conducted; the surveys are filled-out in a face-to-face meeting. Therefore respondents may be tempted to provide false information for various reasons. For instance, some men may over exaggerate their sex lives in order to appear as a macho men; while females may understate there sexual activities so they would not be labeled as 'prostitutes'. Secondly, certain individuals may not want to disclose their extra marital affairs.

In an attempt to better understand the nexus between mental health status, social participation and happiness, Phillips (1967) carried out a cross-sectional study using evidence from New Hampshire, United States. The evidence showed that those who were classified as mentally ill were significantly less happy than persons who were well. This finding was validated by the following descriptive statistics: 16% of the mentally ill considered themselves as not too happy compared to the mere 3.7% of the well who also did not feel too happy. On the other hand, 45.3 % of the sound minded respondents perceive themselves to be very happy, while only 28.2% of the respondents with mental disorders saw themselves as happy. The findings of Phillips differ substantially from those of Stutzer (2003) who suggested that interacting with neighbours can produce unhappiness. In that, Phillips found that social participation positively influenced the happiness of both the well and the psychiatrically disturbed. Three measures of social participation were employed in the study: (1) frequency of interaction with friends, (2) the number of neighbours known well enough to visit, and (3) the level of organisational activity. All three measures revealed that the percentage of respondents who perceive themselves to be happy, increased with their level of social participation. Nonetheless, reported happiness was still higher among the mentally stable.

Oswald and Powdthavee (2007) reported empirical results which suggest that satisfaction with life and mental health are worst in Britain and Germany among fatter people as measured by the body mass index (BMI). However the direction of causality is not conclusive and merits research.

According to the findings of Blanchflower and Oswald (2004b) subjective well-being among black people in the U.S. is substantially less than whites while holding all other things constant. However, the study also indicates that disparities in subjective well-being between racial groups have gotten smaller over the last few decades. The authors also noted that the level of happiness among the black population in the U.S. has risen over the same period, 1972-1998. Income was found to have a positive statistically significant impact on happiness in both Britain and the U.S. Women, married people, the highly educated, and those whose parents are not divorced tend to experience greater satisfaction with life. Persons who are on their second marriage have been reported to be less happy than people who are still in their first marriage. For both Britain and the

U.S. happiness is U-shaped in age. Happiness reaches a minimum somewhere around age 40, with all other things held constant.

Prior to the work of Blanchflower and Oswald (2004b), Clarke and Oswald (1994) also observed a U-shaped relationship between happiness and age. Clarke and Oswald used data for 1991 from the British Household Panel Survey (BHPS); the authors found that somewhere within a person's mid-30s happiness was at its minimum. The findings of Clarke and Oswald (1994) were revisited by Clarke and Oswald (2006) in order to derive richer results concerning age and happiness. Since a fair duration of time has elapsed between the two studies, Clarke and Oswald (2006) data-span was from 1991 to 2004, using the BHPS. In the more recent study two measures of happiness were employed: life satisfaction and psychological well-being (captured by the General Health Questionnaire). Both measures were shown to be U-shaped across age groups and reached a minimum in the age range 40-49. However, Clarke and Oswald (2006) noted that even with demographic controls happiness would still reach a minimum in the stated age range. Graham and Pettinato (2001) also observed this U-shape relationship between happiness and age in a sample of Latin American countries. They found that in the initial stages happiness decreased with years of age, but started increasing after age 49.

In surveying the literature, no studies were found that looked at happiness in the Caribbean, or the impact of exercise on happiness. Oswald and Powdthavee (2007) did some work using the BMI, while a couple other authors estimated the impact self reported health on happiness. However, neither the BMI nor self reported health status can represent a person's level physical activity. This present study will seek to fill those gaps in the literature.

3. Data and Methodology

3.1. Data

All the data were obtained through use of questionnaires³. Only persons 16 years of age and above were eligible to fill out the survey. The questionnaires were administered to and completed by 120 adult Barbadians over the period February – June, 2008.

³ See a copy of the questionnaire in Appendix 2.

The dependent variable, happiness was measured using scores on a Satisfaction With Life Scale (SWLS) designed by Dr. Ed Diener of the University of Illinois, Chicago. This scale was also employed by the work of Pavot and Diener (1993). The scale comprises of 5 statements related to one's satisfaction with their life, which respondents were asked to assign a value ranging from 1(strongly disagree) to 7(strongly agree). The index of happiness is constructed by taking the sum of the values assigned to the 5 statements, with 35 being the highest (most satisfied) and 5 being the lowest (not at all satisfied).

Other variables incorporated into the study are: religion, health, family relations, sex (male or female), employment status, annual income, marital status and the number of days respondents exercise per week.

For religion, respondents were asked to identify their religious affiliation out of 5 categories: Christianity, Islam, Hinduism, Other or None. Those who are affiliated with a religion were asked to indicate how serious they took their faith using a 7 point scale. Health and family relations were measured using the same 7 point scale. Employment status was divided into 3 groups: employed, unemployed or student. However, only full-time students fell under the heading of a student in this study. This was done because students cannot be considered as either being employed or unemployed; they are not a part of the labour force.

3.2. *Sampling Method*

This research paper employed purposive sampling as its data collecting technique. Purposive sampling is a non-probability approach to obtaining data from the population. This approach occurs when a researcher selects a sample based on some predefined groups he/she is seeking. There are various categories of purposive sampling, such as: modal instance sampling, expert sampling, quota sampling (proportional and non-proportional), heterogeneity sampling and snowball sampling. The author adopted non-proportional quota sampling as his survey methodology for this present study.

In non-proportional quota sampling you simply specify the minimum number of sample units you want in each category. This method is less restrictive than proportional quota sampling, in

that the proportions of the sample units in the major categories do not have to match the true characteristics of the population. It is essentially the non-probabilistic analogue of stratified random sampling, because it is typically used to assure that smaller groups are adequately represented in the sample. For this paper, a minimum number of 10 respondents were required for certain categories of the questionnaire. For instance, the author made sure that each of the major religions (Christianity, Islam and Hinduism) is represented by at least 10 individuals and a minimum of 10 unemployed respondents was required.

The author thought this method of sampling to be most appropriate for this study because, sometimes in random samples you do not attain a wide enough cross-section suitable for testing certain hypotheses found in the literature review. The major draw back of this approach is that it may not be a good representative of the population. Some bias may exist in the results, as is the case with all non-probability sampling techniques.

There are a number of criticisms that have been put forward against the use of surveys. Critics often state that surveys are biased by conditions such as: the respondent's mood at the time of the survey and varying interpretations to statements and questions. Nonetheless, Oswald (1997) made it quite clear that despite the short comings of surveys the only way to know how people feel is to ask them. After all, individuals are deemed to be the best judges of their quality of life (Frey and Stutzer, 2002).

3.3. *Empirical Approach*

The data analysis in this study is done using Microsoft Excel and the software Statistical Package for the Social Sciences (SPSS). First of all, the author evaluates the level of happiness among Barbadians. Second, happiness across different demographic groups characterised by sex, income, religion, age and the like, is analysed. Finally, an Ordinary Least Squares (OLS) regression is estimated to determine what variables contribute significantly to the happiness of Barbadian adults.

3.4. Model Specification

To effectively evaluate the contributors of subjective well-being, a regression analysis is ideal. The regression equation employed in this study is as follows:

$$H_t = \alpha + \beta_1\phi + \beta_2\chi_t + \beta_3h_t + \beta_4\eta_t + \beta_5\lambda_t + \beta_6\theta_t + \beta_7\ell_t + \beta_8Y_t + \beta_9\tau_t + \beta_{10}E_t + u_t \quad (1)$$

where H_t is the measure of happiness, ϕ is the religion variable which indicates if respondents are religious or not, χ_t corresponds to respondents' reported seriousness about their religion, h_t is self reported health, η_t indicates the quality of the relationship respondents have with their families and λ_t is the age group variable. θ_t captures whether the respondent is male or female, employment status is given by ℓ_t and Y_t represents annual income. Marital status is represented by τ_t , the variable for exercise is E_t and u_t is the error term which is assumed to be white noise.

Religion offers solace to individuals and serves as an arsenal of strength in time of despair. Therefore, both variables of religion are expected to have positive impact on subjective well-being. It is reasonable to assume that a bi-causal relationship exist between happiness and health. Happier people are usually healthier, and at the same time health influences the happiness of individuals. There is a growing literature in medical research and psychology which posits that positive emotions and attitudes lead to increased health and shorter recovery time after sickness. On the other hand, health is found to be a predictor of the satisfaction people experience with their life (see Glenn and Weaver, 1981 and Esheman and Stack, 1998). In this study health is expected to have a positive impact on happiness.

Sociology teaches that a good relationship with one's family provides social and financial support along with numerous other benefits for individuals in a given society. Therefore, good family relationships should be associated with higher levels of happiness. The literature suggests that the link between age and happiness is negative. However, the reason for this relationship is unclear. The relationship between happiness and being a male or female is ambiguous. Unemployment should have negative association with subjective well-being since employment promotes a sense of independence and pride among individuals.

A rise in income enables persons to afford things they were not able to purchase prior to the rise. It is priori expected that a rise in earnings will increase happiness. All the literature reviewed in this study showed being married to have a positive impact on happiness. Many studies reasoned that emotional support, wealth sharing, division of labour and better health, are the major avenues through which married people benefit from the union. So, marriage should be positively linked to happiness. Exercise contributes to overall health as well as physical and mental stamina. Regular physical activity helps lower stress and negative emotions (Balch, 2000). It is generally taught that exercise triggers the production of endorphins in the human body. Endorphins are natural pain killers that induce feelings of euphoria and well-being. Exercise should positively influence persons' satisfaction with life.

4. Results

4.1. Descriptive Statistics

On the life satisfaction scale employed by this study, 6 ranges are given by which individuals can be grouped according to their level of happiness. The 6 ranges are reported in Table 2 with a break-down of the percentage of respondents in each group. Of the 120 adults surveyed roughly 13.3% are deemed to be very satisfied with their lives, while 33.3% are just satisfied and 25.8% are calculated to be fairly satisfied. On the lower end of the scale, 14.2% of the respondents are considered to be slightly unsatisfied with life, 12.5% are definitely unsatisfied with their lives and one individual who accounted for 0.83% of the sample was shown to be very unsatisfied with life. Roughly 46.6% (13.3% + 33.3%) of the sample enjoy high levels of happiness.

However, on average persons who live in Barbados are in the third range given in Appendix 1, since the mean value of happiness is approximately 22.9 (see Table 3). This basically implies that Barbadians are fairly satisfied with their lives but there is still much room for improvement. According to Dr. Diener, mean happiness that fall in the range 20 – 24 is quite common for economically developed countries. He also stated that in this range persons may be for the most part satisfied with life but in 1 or 2 areas contentment is lacking. Note that although average

happiness in the full sample is 22.9, the majority of respondents are captured in the second range (25 – 29). For this reason the standard deviation is given with mean.

Table 4 depicts differences in happiness levels among the various demographic groups in the sample. On a whole, men are minutely happier than women, to be precise the difference is a mere 0.8. Of the 6 age categories utilized in this study the 46-55 age group proved to be the happiest. Like Clarke and Oswald (1994), Graham and Pettinato (2001), Blanchflower and Oswald (2004b) and Clarke and Oswald (2006) a U-shape relationship between age and happiness is observed in this study. After the youngest age group (16-20), happiness fell and rose again in the 46-55 age range. Happiness reached its minimum of 19.3 between the ages of 30 and 45. Similarly, Clarke and Oswald (1994) found that happiness reached a minimum in the mid-30s and Blanchflower and Oswald (2004b) found the minimum to be around age 40. Figure 1 gives a graphical representation of the U-shaped relationship in Barbados. However though, the level of happiness decreased once more after the 46-55 age category.

The dominant religion in Barbados is Christianity. Nonetheless, other religious movements still play an active role in the Barbadian society. For this reason the author found it interesting to investigate variations in happiness across different religions. The mean values of happiness in each religious group show that Hindus enjoy a higher level of happiness compared to Christians, Muslims, persons in other religious groups not explicitly defined in the study and individuals with no religious affiliation. However, Muslims are only slightly behind Hindus on the happiness scale. Christians are ranked third, followed by those with no religious affiliation, while those of other religions are in fifth position. Indeed, the mean value of happiness for Hindus is a fairly good approximation of the sample. This is verified by the relative size of their standard deviation of happiness compared to the other 4 groups.

As expected, persons who have a job are happier than the unemployed. Full-time students are also more happy those who do not have a job but are shown to be not as happy as the employed. This finding is in no way a surprise, employment is ranked high as a major source of subsistence and contentment. The results indicate that persons in higher annual income brackets have higher levels of subjective well-being. For every income group from the lowest to the highest except for

the \$60,001-\$80,000 group, the level happiness increased. However, the \$60,001-\$80,000 category consists of only 4 respondents and all are female. This is a possible explanation for the slight fall off in happiness in that income bracket. In comparing married people to persons who are not married, it is shown that the happiness of the married is significantly higher than the unmarried. The happiness level of married people falls within the second range of the SWLS given in Appendix 1. On the other hand, the happiness level of the unmarried respondents lies within the third range. The disparity in happiness between persons of different marital status is probably due to the reasons outlined earlier in sub-section 3.3.

4.2. Regression Analysis

At this point the author will report the results of the regression analysis. The regression estimates are reported in Table 5. The results show that all the independent variables have their priori expected signs. About 42% of the variation in happiness is explained by the independent variables, which is fairly good for a cross section study. Only 3 of the variables employed in this study significantly explain happiness in Barbados: age, annual income and marital status.

Age has a negative statistically significant impact on happiness. This finding is very much consistent with previous literature for both developed and developing countries. However, the relationship between age and happiness is nonlinear. Therefore the author introduced age squared (age^2) into the regression equation to capture the nonlinear component and better predict happiness. The coefficient of age^2 is positive, which is an indication of a U-shaped relationship. By investigating the standardized coefficients of the age group variable, it is evident that age has the greatest impact on a person's subjective well-being compared to the other independent variables. The standardized coefficient of the age variable is greater than 1 in absolute values ($\beta_5 = -1.158$), which is testimony of its huge impact on happiness. The value of the standardized coefficient suggests that moving from the lowest age group to a higher age group reduces happiness by 1.158 points up until a certain age group.

An increase in income influences the happiness of Barbadians positively. Previous research using time series data shows that economic growth adds very little to national happiness. However, in this present study the author used micro cross section data and the findings are quite

different than those obtained through the use of time series data and macro measures of income. Easterlin (2001) provides evidence which suggests that in point-in-time studies, the impact of income on happiness is positive and significant. Easterlin's finding supports the results of this present study. Nevertheless, the positive statistically significant coefficient of annual income does not necessarily indicate that money buys happiness indefinitely. As mentioned in section 1, it is possible that a person's income may reach a certain level where it no longer contributes to their happiness notably.

The variable for marital status employed in this study is computed by assigning a value of 1 for married individuals and a value of 2 for the unmarried individuals. Since in Table 5 marital status is shown to have a negative statistically significant impact on happiness, it is concluded that not being married has a negative impact on happiness. This can also be interpreted as; being married positively contributes to the happiness of Barbadians. The standardized coefficient of marital status reveals that marriage has the second highest impact on subjective well-being among the statistically significant variables. This positive relationship between marriage and happiness is supported by authors such as: Glenn and Weaver (1981) and Esheman and Stack (1998).

The number of statistically insignificant variables in this study is a bit baffling, especially variables such as: health and employment status. To give an explanation for their lack of significance in the regression model is beyond the scope of this study.

5. Conclusion

This study provides evidence based on a survey of 120 adults, which suggests that on average Barbadians are slightly happy. Nonetheless, the majority of respondents scored in the second highest range of the SWLS. The descriptive statistics indicates that males are marginally happier than females, while the relationship between age and happiness follow a type of U-shape as seen in the previous literature. Hindus are the happiest of the religions explored in this study, with a score that is slightly higher than that of the Muslims. Christians are ranked thirds, followed by

non-religious persons and finally, persons of other religions not explicitly identified in the study. Those who are employed are shown to be happier than full-time students and the unemployed. The happiness level of Barbadians, increases with their annual income and married persons are substantially more satisfied with lives than unmarried persons.

The results of the OLS regression show that the variables age, annual income and marital status are statistically significant at normal levels of testing. Age has an adverse impact on happiness, while income impacts happiness positively and singleness (not married) is negatively associated with happiness. Getting older has the greatest significant impact on subjective well-being, followed by marital status in second place and income trails in third place. The negative sign linked to singleness can be taken as a positive relationship between marriage and subjective well-being as suggested in previous literature.

In light of the findings it is evident that marriage matter a great deal to those living in Barbados. For this reason the author is in agreement with Glenn and Weaver (1981) who stated that family life education needs to be given high priority the school system. Furthermore, research of the impact of divorce on happiness in Barbados would be quite useful in advising policy. Divorce has been shown to shatter the lives of adults and children all across the globe. For this reason it must be paid close attention.

Generally, more research is needed in the area of subjective well-being in Barbados and the wider Caribbean. It would be interesting to observe the role of aspirations and social comparisons in relation to happiness in the Caribbean. It is the desire of the author that this paper stimulates the interest of other researchers and provides useful information for policy makers.

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Table 1: Demographic Characteristics of the Sample

	Frequency	Percentage (%)
Sex		
Male	59	49.2
Female	61	50.8
Age		
16-20	19	15.8
21-30	45	37.5
31-36	12	10
37-45	10	8.3
46-55	22	18.3
56 and over	12	10
Religion		
Christians	65	54.2
Muslims	20	16.7
Hindus	11	9.2
Other	7	5.8
None	17	14.2
Employment Status		
Employed	82	68.3
Unemployed	18	15
Student	20	16.7
Income Groups(Annual)		
\$0-\$20,000	57	47.5
\$20,001-\$40,000	35	29.2
\$40,001-\$60,000	13	10.8
\$60,001-\$80,001	4	3.3
More than \$80,000	11	9.2
Marital Status		
Married	37	30.8
Not Married	83	69.3

Table 2: Satisfaction with Life Scale

Ranges	Scores	Frequency	Percentage (%)
1	30-35	16	13.3
2	25 - 29	40	33.3
3	20 - 24	31	25.8
4	15 - 19	17	14.2
5	10 - 14	15	12.5
6	5 - 9	1	0.83

Notes: These ranges were adopted from Dr. Ed Diener's Satisfaction with Life Scale. See his explanation of each score range in Appendix 1.

Table 3: Overall Happiness in Barbados

	Observations	Minimum	Maximum	Mean	Std. Deviation
Happiness	120	7.00	34.00	22.8750	6.34520

Table 4: Levels of Happiness among Different Demographic Groups

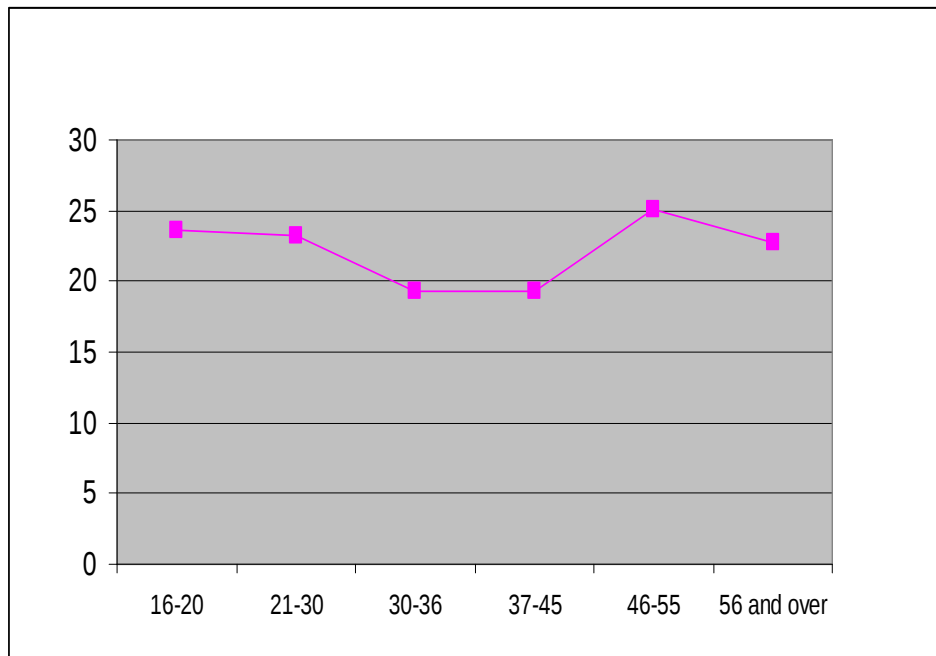
	Mean Happiness	Standard Deviation
Sex		
Male	23.3	6.35
Female	22.5	6.13
Age		
16-20	23.6	4.01
21-30	23.2	7
30-36	19.3	7.1
37-45	19.3	6.3
46-55	25.1	4.5
56 and over	22.75	9.53
Religion		
Christins	22.5	6.5
Muslims	25.25	6.5
Hindus	25.5	3.5
Other	18.7	6.04
None	21.5	5.6
Employment		
Employed	23.4	6.5
Unemployed	21.06	6.1
Student	22.25	5.61
Annual Income		
\$0-\$20,000	21.9	6.02
\$20,001-\$40,000	22.2	6.8
\$40,001-\$60,000	25.4	6.03
\$60,001-\$80,000	25	4.1
More than \$80,000	26.4	4.8
Marital Status		
Married	26	6.7
Not Married	21.5	5.5

Table 5: Determinants of Happiness

Independent Variables	Unstandardized Coefficients	Standardized Coefficients	Std. Error	t-Statistic	P-value
(Constant)	28.168		9.82	2.868	0.006
Religion	0.542	0.085	0.708	0.765	0.448
Seriousness about Religion	0.12	0.026	0.512	0.234	0.816
Health	0.641	0.112	0.649	0.987	0.328
Family Relationships	0.941	0.167	0.677	1.391	0.17
Age	-4.449	-1.158*	2.355	-1.889	0.064
Sex(Female)	-0.889	-0.071	1.403	-0.634	0.529
Employment Status	-0.125	-0.016	1.055	-0.119	0.906
Annual Income	1.753	0.345**	0.828	2.116	0.039
Marital Status	-5.9	-0.424***	1.758	-3.357	0.001
Days per Week of Exercise	0.116	0.033	0.419	0.278	0.782
Age ²	0.465	0.848	0.33	1.41	0.164
R ²		0.415			
Adjusted R ²		0.293			
Observations		120			

Note: (2) ***, ** and * indicates significance at the 1, 5 and 10 percent levels of testing, respectively.

Figure 1: Mean Happiness and Age



Note: (3) Age is represented on the horizontal axis and mean happiness for each age range is on the vertical axis.

Appendix 1

Understanding Scores on the Satisfaction with Life Scale

30 – 35 Very high score; highly satisfied

Respondents who score in this range love their lives and feel that things are going very well. Their lives are not perfect, but they feel that things are about as good as lives get. Furthermore, just because the person is satisfied does not mean she or he is complacent. In fact, growth and challenge might be part of the reason the respondent is satisfied. For most people in this high-scoring range, life is enjoyable, and the major domains of life are going well – work or school, family, friends, leisure, and personal development.

25- 29 High score

Individuals who score in this range like their lives and feel that things are going well. Of course their lives are not perfect, but they feel that things are mostly good. Furthermore, just because the person is satisfied does not mean she or he is complacent. In fact, growth and challenge might be part of the reason the respondent is satisfied. For most people in this high-scoring range, life is enjoyable, and the major domains of life are going well – work or school, family, friends, leisure, and personal development. The person may draw motivation from the areas of dissatisfaction.

20 – 24 Average score

The average of life satisfaction in economically developed nations is in this range – the majority of people are generally satisfied, but have some areas where they very much would like some improvement. Some individuals score in this range because they are mostly satisfied with most areas of their lives but see the need for some improvement in each area. Other respondents score in this range because they are satisfied with most domains of their lives, but have one or two areas where they would like to see large improvements. A person scoring in this range is normal in that they have areas of their lives that need improvement. However, an individual in this range would usually like to move to a higher level by making some life changes.

15 – 19 Slightly below average in life satisfaction

People who score in this range usually have small but significant problems in several areas of their lives, or have many areas that are doing fine but one area that represents a substantial problem for them. If a person has moved temporarily into this level of life satisfaction from a higher level because of some recent event, things will usually improve over time and satisfaction will generally move back up. On the other hand, if a person is chronically slightly dissatisfied with many areas of life, some changes might be in order. Sometimes the person is simply expecting too much, and sometimes life changes are needed. Thus, although temporary dissatisfaction is common and normal, a chronic level of dissatisfaction across a number of areas of life calls for reflection. Some people can gain motivation from a small level of dissatisfaction, but often dissatisfaction across a number of life domains is a distraction, and unpleasant as well.

10 – 14 Dissatisfied

People who score in this range are substantially dissatisfied with their lives. People in this range may have a number of domains that are not going well, or one or two domains that are going very badly. If life dissatisfaction is a response to a recent event such as bereavement, divorce, or a significant problem at work, the person will probably return over time to his or her former level of higher satisfaction. However, if low levels of life satisfaction have been chronic for the person, some changes are in order – both in attitudes and patterns of thinking, and probably in life activities as well. Low levels of life satisfaction in this range, if they persist, can indicate that things are going badly and life alterations are needed. Furthermore, a person with low life satisfaction in this range is sometimes not functioning well because their unhappiness serves as a distraction. Talking to a friend, member of the clergy, counselor, or other specialist can often help the person get moving in the right direction, although positive change will be up to the person.

5 – 9 Extremely Dissatisfied

Individuals who score in this range are usually extremely unhappy with their current life. In some cases this is in reaction to some recent bad event such as widowhood or unemployment. In other cases, it is a response to a chronic problem such as alcoholism or addiction. In yet other cases the extreme dissatisfaction is a reaction due to something bad in life such as recently having lost a loved one. However, dissatisfaction at this level is often due to dissatisfaction in multiple areas of life. Whatever the reason for the low level of life satisfaction, it may be that the help of others are needed – a friend or family member, counseling with a member of the clergy, or help from a psychologist or other counselor. If the dissatisfaction is chronic, the person needs to change, and often others can help.

Source: www.psych.uiuc.edu/~ediener/Understanding%20SWLS%20Scores.pdf

Appendix 2

Questionnaire

Dear Respondent

I am a final year Economics student of UWI, Cave Hill Campus conducting a research project on the determinants of happiness. The data collected will be used only for the purpose of the study and will be handled with the strictest confidentiality. Please answer all the following questions honestly and to your best ability.

Your participation in the completion of this questionnaire is greatly appreciated.

Start of Questionnaire

1. Indicate which of the following religions you are a part of.

- ☐ Christianity
- ☐ Islam
- ☐ Hinduism
- ☐ Other
- ☐ None

Below are eight (2 to 9) statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

If your answer to question (1) is 'none', then skip (2) and move on.

2. _____ I am serious about my religion.

3. _____ In most ways my life is close to my ideal.

4. _____ The conditions of my life are excellent.
5. _____ I am satisfied with my life.
6. _____ So far I have gotten the important things I want in life.
7. _____ If I could live my life over, I would change almost nothing.
8. _____ I am in good health.
9. _____ The relationship I have with my family is a good one.
10. Age Group: ☐ 16-20 ☐ 21-30 ☐ 31-36
 ☐ 37-45 ☐ 46-55 ☐ 56 and over
11. Sex: ☐ Male ☐ Female
12. Nationality _____
13. Are you employed? Yes ☐ No ☐
14. Are you a full-time student? Yes ☐ No ☐
15. What is your annual income?
- ☐ \$0 - \$20,000
 ☐ \$20,001 - \$40,000
 ☐ \$40,001 - \$60,000
 ☐ \$60,001 - \$80,000
 ☐ More than \$80,000
16. Are you married? Yes ☐ No ☐
17. Do you exercise? Yes ☐ No ☐
18. If 'yes' to the above, then how many days a week do you exercise?

End of Questionnaire

Thank you for your time and cooperation