The Complexity of Well-being
A Life Satisfaction Conception
and a Domains-of-Life Approach

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"*An economist who is nothing but an economist is a danger to his neighbours. Economics is not a thing in itself; it is a study of one aspect of the life of man in society.*" John R. Hicks, cited by Meier (1991, p. 352)

1. Introduction

John Hicks' statement is important in many ways. First, it states that there are many aspects or domains in a person's life; thus, a person's well-being is expected to be related to her situation in all these aspects of life. Second, it recognises that economists usually deal with just one aspect of a person's life; hence, it is impossible to understand a person's well-being from an economic perspective alone. Third, it also recognises that economics, as a discipline, is an academic construct[1] that studies only one aspect of a person's life. Hicks' comment refers to economics, but it could also apply to any other of the social sciences, such as psychology, sociology, anthropology, and political science. Finally, it also recognises that every person is in a society; therefore, her well-being must be understood not in an isolated way but within her particular context and culture, and her relation to other persons and institutions. Thus, a person is defined as such within her specific context; and there is no room for an out-of-any-context individual.

This investigation uses a life-satisfaction conception to study the well-being of persons. In other words, the investigation directly asks persons about their satisfaction with their lives, and this information is used as a proxy for a person's well-being. Hence, the investigation follows a subjective well-being approach to study a person's well-being; it uses the well-being as it is declared by the person herself. In addition, the investigation follows a domains-of-life approach to study life satisfaction. A person's well-being is studies in its relationship to her situation in many aspects of her life. The domains of life refer to concrete areas where a person functions as a human being. The existence of a non-linear structural relationship between satisfaction in specific domains of life and life satisfaction (well-being) is proposed. Furthermore, the investigation studies the existence of differences in life satisfaction and satisfaction in domains of life across socioeconomic and demographic groups. Personal and social factors are behind these structural differences.

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[1] It is the result of the analytic-Cartesian paradigm, which defines the way of approaching complex phenomena in order to do research and organise knowledge.

The empirical research is based on a relatively large survey applied in the central states of Mexico, including the Federal District (Mexico City)[2]

The specific conclusions are made in section 8. As a major conclusion, it is shown that a subjective well-being approach provides useful information for the study of a person's well-being; and that the study of well-being asks for a transdisciplinary, or at least interdisciplinary, perspective to understand all aspects of a person's life. The domains-of-life approach is an useful device to promote this interdisciplinary research.

The paper is structured as follows: Section 2 considers the methodological approach; in particular, it deals with the subjective well-being approach, with life satisfaction as a subjective well-being conception, and with the relevant literature on domains of life. Section 3 discusses the database, it also explains the definition of the domains of life and the construction of the relevant variables. Section 4 presents some descriptive statistics on life satisfaction and satisfaction in the domains of life. Section 5 uses regression analysis to study the relationship between life satisfaction and satisfaction in the domains of life. Sections 6 and 7 examine the differences in satisfaction across some socioeconomic and demographic groups. Section 8 presents general conclusions about the relationship between life satisfaction, satisfaction in domains of life, and some socioeconomic and demographic variables, such as education, income, gender and age. Final considerations are also made in Section 8.

2. Methodological Approach

What is and how to measure human well-being constitutes a fundamental question both in social sciences and in philosophy. Academic works that study human well-being have usually followed doctrinal top-down approaches, which take little feedback from human beings themselves. The Subjective Well-Being approach (SWB) substantially differs from those approaches on this basis. It follows a bottom-up approach. On this ground it clearly constitutes a significant contribution to the understanding of human well-being.[3]

2.1 The subjective well-being approach

The SWB approach has some particular features:[4]

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[2]   The author is grateful to CONACYT for providing the financial support to run this survey.

[3]   Subjective well-being has been extensively studied in disciplines such as psychology (Kahneman *et al*, 1999; Argyle, 2001) and sociology (Venhoveen, 1988, 1992, 1996, 1997, 2000). It is a relatively new area of study in economics (Easterlin, 1974, 1995, 2001; Clark and Oswald, 1994; Di Tella *et al*, 2001; Frey and Stutzer, 2000; McBride, 2001; Oswald, 1997; Pradhan and Ravallion, 2000; and van Praag and Frijters, 1999)

[4]   A larger explanation of these features; which can be considered as advantages of the approach, can be found in Rojas (2004d)

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a. The well-being of a person. Wholeness rather than partialness. By directly asking people about their well-being, SWB studies the well-being of a person, rather than the well-being of an academically defined agent. It is an approach that deals with a *human being of flesh and blood* (as in Unamuno's *Tragic Sense of Life*) and *in her circumstance* (as in Ortega y Gassett's *Meditations on Quixote*)

b. Inferential approach. SWB is based on an inferential, rather than doctrinal, approach. It is neither the researcher nor the philosopher the one who judges a person's well-being, but the person herself, in her own terms and circumstance.[5] Thus, SWB deals with the well-being of a person as she is,[6] and not as someone else thinks she ought to be.

Doctrinal approaches are basically normative in their study of what a good life is and how to attain it.[7] Rather than doing empirical research, doctrinal approaches have preferred to assume both the specific conception of human well-being and the factors that do explain it. SWB just requires from a person to be able to assess her life satisfaction or life happiness, and to provide an answer that contains this information; the rest of the analysis, e.g.: the importance of some presumed well-being explanatory factors, is based on inferential techniques.

c. Inherently subjective. SWB states that a person's well-being is essentially subjective, it necessarily passes by the subject's own evaluation of her condition. It is the person the one who can better assess her well-being. The role of researchers is to understand and study the nature of this assessment and its implications. Once the inherent subjectivity of well-being is recognised,[8] it is possible to test and look for objective indicators that are good proxies of well-being.

d. Transdisciplinary approach. SWB refers to a person's well-being and not the well-being of an academically constructed agent. Thus, it is difficult to seize the complexity of SWB measures from any single discipline, and a transdisciplinary, or at least an interdisciplinary approach, is preferred.

e. The person as she is. By studying the well-being as declared by a person, within her circumstance, SWB deals with the person as she is. In this sense, a subjective well-being answer contains all that makes a person what she is; including such features as her

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[5] In this way, even if it sounds paradoxical, it can be said that SWB avoids the subjectivity and arbitrariness of the so called objective indicators of well-being.

[6] This could include her conception about how she ought to be.

[7] See Dohmen (2003) and Veenhoven (2003)

[8] Sumner (1996) chapter 2 studies the nature of this subjectivity. In specific, referring to the subjective and objective distinction, Sumner (1996, p. 27) states: "I believe there to be an interpretation of the subjective/objective distinction such that subjectivity turns out to be a necessary condition of success in a theory of welfare."

values, traumas, goals, aspirations, beliefs, ambitions, dependencies, selective memories, intellectual and emotional capabilities, childhood and adolescence experiences, parents and relatives, friends, cultural biases, education, and so on. Thus, it is the well-being of a person of *flesh and blood* and *in her circumstance*. It is in this sense that the approach is positive, because it asks for a well-being appraisal from a person as she is (which also includes what she thinks she ought to be), given the personal and circumstantial factors that define her as she is. The SWB approach is useful to identify those factors that are associated to greater subjective well-being, and as such it is useful for policy making.

On the other hand, some normative approaches ask for a well-being appraisal under different personal and circumstantial factors (e.g.: under different goals and aspiration, under different cultural biases, under different intellectual and emotional capabilities, under different family rising and childhood experiences, under different educations, and so on).[9] The SWB approach does not reject these normative approaches, but it asks for a clear distinction between the positive approach (an appraisal from the person as she is) and the normative approaches (an appraisal based on the person as someone else thinks she ought to be) What is important is to keep in mind that the approaches are different and belong to different arenas of study. In addition, the SWB approach could be of use for most normative approaches; after all, the person is expected to become aware of the benefits from any personal and circumstantial change.

2.2   On the measurement of subjective well-being: Life-satisfaction approach

SWB is commonly understood and measured either in its *life satisfaction* or in its *happiness* conceptions (Ferrer-i-Carbonell, 2002; Cummins, 1997, 1999; Veenhoven, 1997). In the psychological literature SWB is also understood and measured in its psychological-health conception (Argyle, 2001; Kasser, 2003) This paper follows the life satisfaction conception, which is expected to be less volatile and more cognitive oriented than happiness (Meadow *et al.*, 1992; Michalos, 1980; Sirgy *et al.*, 1995) Argyle states that "*satisfaction is one of the main components of happiness. Joy is the emotional part, satisfaction is the cognitive part – a reflective appraisal, a judgement, of how well things are going, and have been going. In surveys we can ask either about satisfaction with 'life as a whole', or about specific domains, such as work, marriage, and health.*" (Argyle, 2001, p. 39) Rojas (2004a) argues that there is a conceptual referent for happiness, implying that a person's evaluation of her own life involves a judgmental process. Hence,

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[9]   There is no person without circumstance; thus, the alternative for a person is not to get rid of all cultural biases, parents, dependencies, values, goals, childhood experiences, and so on; but to substitute them for different ones.

life satisfaction is probably closer to the philosophers' conception of well-being as a happy life, which involves a person's judgment of her life (Tatarkiewicz, 1976)

Veenhoven (1984) states that SWB can only be measured on the basis of a person's answer to a direct question about her well-being; there is no room for speculation based on a person's possessions, facial expressions, or either extrinsic behaviour. However, it is not clear what kind of information an answer to a typical satisfaction question provides.[10]

2.3   The domains-of-life approach

The domains-of-life literature states that a person's life can be approached as a general construct of many specific domains; and that life satisfaction can be understood as the result of satisfaction in the domains of life (Cummins, 1996 and 2003; Headey and Wearing, 1992; Headey, Holmström and Wearing, 1984 and 1985; Saris and Ferligoj, 1996; Salvatore and Muñoz Sastre, 2001; Veenhoven, 1996; Rampichini and D'Andrea, 1998; and van Praag and Ferrer-i-Carbonell, 2004)

The approach attempts to understand a general appraisal of life as a whole on the basis of a multidimensional vector of specific appraisals in more concrete spheres of being.[11]

The enumeration and demarcation of the domains of life is arbitrary; it can go from a small number to an almost infinite recount of all imaginable human activities and spheres of being. Thus, there are many possible partitions of a human life; and the selected partition depends on the research's objectives. Nevertheless, any partition must value parsimony, meaning, and usefulness (Rojas, 2004b)

On the basis of a meta-study of the literature, Cummins (1996) has argued for a seven-domain partition: material well-being, health, productivity, intimacy, safety, community, and emotional well-being.

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[10] Referring to SWB, Veenhoven (1997, p.3) states that even though it is "clear that it is the subject who makes the appraisal, it is not so clear what the subject appraises" (p.4). There exists some debate on how much cognitive information and on what kind of information there is in a SWB answer. Cummins (2003, p.2) states that "The cognitive component in the response to 'How satisfied are you with your life as a whole?' is likely to be very low. This is because the target for cognition is amorphous." Kanehman (1999, pp. 21 and 22) states that "The standard for the judgement of happiness is not obvious at all . . . . First, people evidently compute an answer to the subjective happiness question on the fly, instead of retrieving a prepared answer from memory." Schwarz and Starke (1991 and 1999) have shown the transient factors such as a person's mood do influence the happiness answer. On the other hand, Rojas (2004a) shows that there is some cognitive evaluation of life and of its purpose when people answer a SWB question; even if this answer is 'on the fly'. Eid and Diener (2004) show that there are permanent factors in a person's answer; thus, this answer contains useful information about a person's judgment of her life.

[11]   Hence, the domains-of-life approach is basically an analytic-Cartesian approach; it is based on the idea that to understand a complex thing, such as life satisfaction, it is convenient to divide it in as many parts as possible and to study each part separately.

van Praag *et al.* (2003) study the relationship of satisfaction in different domains of life (health, financial situation, job, housing, leisure, and environment) and satisfaction with life as a whole. They state that "satisfaction with life as a whole can be seen as an aggregate concept, which can be unfolded into its domain components" (van Praag *et al.*, 2003, page 3) van Praag and Ferrer-i-Carbonell (2004) follow a domains-of-life approach in their book. Rojas (2004b) studies the relationship between happiness and satisfaction in the following seven domains of life: health, economic, job, family, friendship, personal, and community.

There has been some discussion on the causality of the relationship between satisfaction in domains of life and general satisfaction.[12] Because the issue of causality has not yet been settled, this investigation follows a bottom-up interpretation of the results; however, it recognizes that a different interpretation is also possible.

3. The Database

3.1 The survey

A survey was conducted in five states of central and south Mexico[13] as well as in the Federal District (Mexico City) during October and November of 2001. A stratified-random sample was balanced by household income, gender and urban-rural areas; 1540 questionnaires were properly completed. However, only 579 observations are used in this investigation because of the need to work with persons who can report a satisfaction in each one of the domains of life under consideration.

3.2 The variables

The survey gathered information regarding the following quantitative and qualitative variables:

Demographic and Social Variables: education, age, gender, civil status, and family composition.

Economic Variables: current household income, consumption expenditure, personal income, ownership of durable and household goods, and access to public services.

Life Satisfaction: the following question was asked: "*Taking everything in your life*

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[12] Even though most researchers accept that satisfaction in domains of life contributes to the explanation of life satisfaction, some have risen questions about the nature of the causality, arguing for the possibility of reversed causality; this is, it could be that satisfaction in domains of life explain life satisfaction, but it could also be that global satisfaction explains a person's satisfaction in the domains of life. See Argyle (2001) and Diener (1984). For a discussion on top-down versus bottom-up theories of life satisfaction see Lance *et al.* (1989); Headey *et al.* (1991); and Scherpenzeel and Saris (1996). Leonardi *et al.* (1999) and Fox and Kahneman (1992) propose a constructionist approach to the issue of causality.

[13] The states are: Oaxaca, Veracruz, Puebla, Tlaxcala and the State of Mexico. The survey was applied in both rural and urban areas.

into consideration, How satisfied are you with your life?" A seven-option answering scale was used. The scale's answering options are: *extremely unsatisfied*, *very unsatisfied*, *unsatisfied, neither satisfied nor unsatisfied, satisfied, very satisfied, extremely satisfied.* Life Satisfaction was handled as a cardinal variable, with values between 1 and 7; where 1 was assigned to the lowest level of satisfaction and 7 to the highest.[14]

Satisfaction with Concrete Areas of Life: Twenty-four questions were asked to inquire about satisfaction in many aspects of life, such as: housing conditions, job conditions, job responsibilities, working shifts, health, health services, financial solvency, income, neighbourhood relations, neighbourhood safety, trash collection in the neighbourhood, public transport, family relations, and so on. The following ordinal scale was used to measure satisfaction in each aspect of life: *extremely unsatisfied*, *very unsatisfied*, *unsatisfied*, *neither satisfied nor unsatisfied*, *satisfied*, *very satisfied* and *extremely satisfied*. The scale was manipulated as a cardinal variable ranging from 1 for *extremely unsatisfied* to 7 for *extremely satisfied.*

3.3 The construction of the domains of life

The following methodology was used to construct the domains of life:

Most of the 1535 persons in the survey could not provide an answer for some of the aspects of life under consideration. All these people were short of information in one or more aspects of life, not because they did not wanted to provide an answer, but because they did not function in that aspect of life. For example, some people were not employed and therefore could not state their satisfaction with their job, with their responsibilities, and so on. Many people did not have children, o were not married. For the purposes of this paper, it is convenient to study people who function in all aspects of life because the structural relationship between life satisfaction and satisfaction in domains of life is different for people who act in all the domains of life under consideration and people who are domain-absentee. Thus, the investigation refers only to those persons who function in all aspects of life under consideration; hence, only 579 persons out of the original 1535 were considered.[15]

There were high correlations among satisfaction in many aspects of life. This high correlations indicate that these aspects of life were referring to a similar life-functioning

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[14]   Ferrer-i-Carbonell and Frijters (2004) show that there are not substantial differences when satisfaction is treated as a cardinal or as an ordinal variable. In the conclusions of the paper they state: "We found that assuming cardinality or ordinality of the answers to general satisfaction questions is relatively unimportant to results."

[15]   Most of the excluded people did not function in the job and family areas because they were unemployed (voluntarily or not) or because they had no children or were not married.

area. Hence, factor analysis was used to reduce the number of dimensions and to demarcate the domains of life. This technique permits to keep as much information as it is available in the answers, while it avoids the problem of duplicating the use of information. Seven main domains of life were identified on the basis of the factor analysis:

- *health*: satisfaction with current health and with the availability and quality of medical services.

- *economic*: satisfaction with housing and living conditions, with income's purchasing power, and with financial solvency.

- *job*: satisfaction with job's activity and job's responsibilities, with working shifts, and with hierarchical working relations.

- *family*: satisfaction with spouse or stable-partner, with children, and with rest-of-family.

- *friendship*: satisfaction with friends and with availability of time to spend with them.

- *personal*: satisfaction with availability of time to pursue personal hobbies and interests, with recreational activities, and with personal growth; as well as satisfaction with education level.

- *community environment*: satisfaction with community services such as trash collection, public transport, road conditions, public lights, neighbourhood safety, and trust in local authorities; as well as satisfaction with neighbours.

It is obvious that the demarcation of the domains of life is somewhat determined by the original set of twenty-four questions. However, given the set of original questions, the factorial analysis allows not only for a reduction of the dimensions, but also for a good demarcation of the domains on the basis of clustering together questions with similar information and setting apart questions with different information.[16] Hence, the technique permits to identify groups of questions that provide related information about a person's life. Thus, factor analysis allows for a non-arbitrary demarcation of the domains of life.

3.4   The construction of the domains-of-life satisfaction variables

Once the domains of life were defined, it was useful to construct a single variable for satisfaction in each domain rather than working with a vector of variables. A principal-components technique was used to create the new variable for satisfaction in each domain

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[16]   This classification is close to Cummins' (1996). The *health* domain is considered by Cummins; while the *family*, *job* and *economic* domains closely resemble Cummins's intimacy, productivity and material domains. The *community environment* domain encompasses Cummins' safety and community domains. The *friendship* domain is not considered by Cummins as a separate domain. The personal domain is close to the leisure domain used by van Praag and Ferrer-i-Carbonell (2004).

on the basis of the group of questions in the domain, and a regression method was used to calculate the factor score.[17] The factor score was rescaled to a 1 to 100 basis to facilitate its manipulation and interpretation.[18]

4. Descriptive Statistics on Life Satisfaction and Satisfaction in Domains of Life

Table 1 shows the mean and standard deviation for *life satisfaction*, as well as for satisfaction in each domain of life. People report greater satisfaction in their *family* and *job* domains, while satisfaction is very low in the *community* domain. The mean value for life satisfaction is 5.16, which can be interpreted as people being, on average, a little above the *satisfied* category.

Table 1 Life Satisfaction and Satisfaction in Domains of Life Descriptive Statistics		
	Mean	**Standard Deviation**
Life Satisfaction	5.16	0.95
Health	58.4	16.7
Economic	55.3	15.9
Job	62.0	16.8
Family	68.8	16.1
Friendship	54.6	15.8
Personal	54.4	16.3
Community	48.7	14.4

Table 2 shows Pearson's correlations across satisfaction in the seven domains of life. All correlations are positive and some are relatively high:[19] *economic* and *job* satisfaction have a 0.52 correlation coefficient; *economic* and *personal* satisfaction have a 0.51 coefficient; while *economic* and *health* satisfaction have a 0.48 coefficient. Correlations are relatively low for the relationship between the *community* domain and all the other domains; as well as for the *friendship* domain and all the other domains. Positive correlations indicate that satisfactions in all domains come together. In general, if a person is satisfied in some domains she is also satisfied in the others; and if she is not satisfied in some domains she is also not satisfied in the other domains.[20] However, it is possible to

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[17]   The factor score provides a cardinal score that permits to order people according to their satisfaction in the constituent aspects of any domain of life.

[18]   In consequence, the variable that measures a person's satisfaction in each domain of life also reflects her relative position. In a cross-section study there is a monotonic relationship between a person's relative position and her satisfaction level in any specific domain of life. This occurs because both the satisfaction of the person and the satisfaction of everybody else in the survey remain constant in any cross-section study.

[19]   Even though correlations are statistically significant, they are not so high as to state that each domain of life does not provide additional useful information.

[20]   Diener and Fujita (1995) propose the concept of resources which are associated to satisfaction. Following their resources approach, the general finding in cross-section studies of positive correlations among satisfaction in domains of life can be explained on the basis of different endowments of resources across persons.

find large groups of people who show some asymmetry in domain satisfactions; they are highly satisfied in some domains and slightly satisfied in others.[21]

	Health	Economic	Job	Family	Friendship	Personal	Community
	Table 2 **Satisfaction in Domains of Life** **Pearson's correlations across domains**						
Health	1.00						
Economic	.48	1.00					
Job	.40	.52	1.00				
Family	.42	.38	.36	1.00			
Friendship	.28	.26	.25	.34	1.00		
Personal	.45	.51	.39	.35	.35	1.00	
Community	.23	.27	.12	.06	.17	.20	1.00

Table 3 shows Pearson's correlations for *life satisfaction* and satisfaction in each domain of life. *Life Satisfaction* is positively correlated to satisfaction in all domains; however, not all correlations are equally important. It is observed that the higher correlation is between *life satisfaction* and *family* satisfaction, with a coefficient of 0.45; this correlation is closely followed by *health* satisfaction, with a coefficient of 0.44. Correlations between *life satisfaction* and *economic*, *personal* and *job* satisfaction are also relatively high; while correlations between *life satisfaction* and *friendship* and *community* satisfaction are relatively low.

Table 3 **Life Satisfaction and Satisfaction in** **Domains of Life** **Pearson's correlations**	
Domain	**Correlation**
Health	.44
Economic	.41
Job	.40
Family	.45
Friendship	.21
Personal	.40
Community	.12

However, it is necessary to go beyond correlations to state the importance of any domain of life in the generation of life satisfaction; thus, the following section uses regression analysis to study the nature of the relationship between life satisfaction and satisfaction in the domains of life.

5.   Relationship between Satisfaction in Domains of Life and Life Satisfaction

A regression between life satisfaction and satisfaction in the domains of life is run to study the nature of the relationship. Most studies use a linear specification; however,

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[21]   See Cohen (2000) for an in-depth study of the domains of life correlations on the basis of Facet Theory and Multiple Discrepancy Theory.

this paper uses a semi-logarithm specification.[22] The semi-logarithm specification implies diminishing returns to any domain satisfaction,[23] an increasing marginal rate of substitution between satisfaction in any two domains,[24] and concavity of life satisfaction in domains of life (life satisfaction tends to be greater in situations of balanced, rather than polarized, domain satisfaction)[25]

The specification is expressed as:

$$e^{LS_i} = e^{\alpha_0} * Hea_i^{\alpha_1} * Eco_i^{\alpha_2} * Job_i^{\alpha_3} * Fam_i^{\alpha_4} * Fri_i^{\alpha_5} * Per_i^{\alpha_6} * Com_i^{\alpha_7} * e^{\mu_i} \qquad (1)$$

where:

LS_i: *Life Satisfaction* of person i, in a 1 to 7 scale.

Hea_i: *Health* satisfaction of person i, in a 1 to 100 scale.

Eco_i: *Economic* satisfaction of person i, in a 1 to 100 scale.

Job_i: *Job* satisfaction of person i, in a 1 to 100 scale.

Fam_i: *Family* satisfaction of person i, in a 1 to 100 scale.

Fri_i: *Friendship* satisfaction of person i, in a 1 to 100 scale.

Per_i: *Personal* satisfaction of person i, in a 1 to 100 scale.

Com_i: *Community services* satisfaction of person i, in a 1 to 100 scale.

μ_i: error term for person i.

α_j: parameters to be estimated, $j = 0, 2, \ldots .7$

Basic manipulation of equation (1) -taking logarithms in both sides of equation- yields equation (2), which is a common manner to express and estimate the semi-logarithm specification:

$$LS_i = \alpha_0 + \alpha_1 \ln(Hea_i) + \alpha_2 \ln(Eco_i) + \alpha_3 \ln(Job_i) + \alpha_4 \ln(Fam_i) + \alpha_5 \ln(Fri_i) + \alpha_6 \ln(Per_i) + \alpha_7 \ln(Com_i) + \mu_i$$

$$(2)$$

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[22]   It is common to work with a linear specification (Møller and Saris, 2001) However, Rojas (2004b) states that a linear specification implies some strong and unrealistic assumptions; he proposes the use of a semi-logarithm specification.

[23]   The impact on life satisfaction of greater satisfaction in any domain is contingent to the initial satisfaction in the domains. As satisfaction in any domain goes up, additional increases in satisfaction have a smaller impact on life satisfaction. Thus, the importance of any domain in generating life satisfaction is contingent on a person's initial situation.

[24]   Up to a certain degree, a person can compensate for lower satisfaction in some domains with greater satisfaction in other domains in order to remain equally satisfied with her life. The semi-logarithm specification implies an increasing compensation rate; thus, the possibilities of compensation rapidly exhaust. This statement assumes that a person has some influence on her domain satisfaction; maybe through the allocation of her personal resources (see Diener and Fujita, 1995)

[25]   There are important implications from this situation: Diminishing returns to satisfaction imply that a person who is looking for her greatest life satisfaction would like to have a relatively balanced domain-satisfaction portfolio. If the person has some control over the resources that lead to satisfaction in the domains of life (in the sense of Diener and Fujita, 1995), then she would like to allocate those resources in such a way that a relatively balanced portfolio is obtained. This issue is explored in Rojas (2004c)

Equation 2 is estimated using *Ordinary Least Squares* (*OLS*) Table 4 presents the results from the analysis.

Table 4 Life Satisfaction and Satisfaction in Domains of Life Regression analysis: Life Satisfaction as dependent variable Semi-logarithm specification		
Domain	**Coefficient**	**Prob.> *t***
Intercept	-3.664	.00
Health	.276	.00
Economic	.517	.00
Job	.243	.00
Family	.776	.00
Friendship	-.066	.34
Personal	.449	.00
Community	-.022	.80
$R^2 = 0.308$		

It is observed that *life satisfaction* is positively related to satisfaction in all domains except *friendship* and *community*. Satisfaction in the *family* domain is fundamental for a person's satisfaction with life. An increase of 100 percent in *family* satisfaction leads to a rise of three quarters of a step in *life satisfaction*.[26] It is important to remember that the *family* domain involves satisfaction with partner, children and rest of the family.

*S*atisfaction in the *economic* and *personal* domains is also very important for a person's life satisfaction; an increase of 100 percent in *economic* or *personal* satisfaction leads to a rise of half a step in *life satisfaction*.

The relationship between *life satisfaction* and satisfaction in the *health* and *job* domains is also important. It is possible to attain greater satisfaction with life by increasing satisfaction in the *health* and *job* domains.

It is surprising that satisfaction in the *friendship* and *community* domains is not related to *life satisfaction*.

It is important to remember that the semi-logarithm specification implies that the impact on *life satisfaction* of any change in domain satisfaction is contingent on the initial satisfaction level in the domain. In other words, even if the coefficient is higher for *family* satisfaction than for *health* satisfaction, a person who is highly satisfied with her family but fairly satisfied with her health could benefit the most from an increase in *health* rather than in *family* satisfaction.

The goodness of fit of the regression is measured by the R-squared coefficient, which is 0.308. It is reasonable high, once it is recognised that there could be other

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[26] *Life satisfaction* is treated as a cardinal variable with values between 1 and 7. Thus, a one-step increase in *life satisfaction* implies a one-category jump.

domains of life not considered in the analysis, that the specification of the relationship could be different, that there may be some biases in a person's judgment about her life satisfaction, and that there are many person-specific factors that play an important role in life satisfaction.

6.   Life Satisfaction and Domains-of-Life Satisfaction by Socio-Demographic Groups

A person's satisfaction in domains of life and, in consequence, satisfaction with her life, could depend on some socioeconomic and demographic characteristics. As it is stated by Cheung and Leung (2004, p. 26): "*Conceivably, personal and societal conditions need not affect all citizens in the same way. A typical way to make sense of the heterogeneity of people is to pay attention to social stratification factors, usually including class, education, age, and gender. Accordingly, these factors not only determine the level of life satisfaction, but also shape the ways that personal and societal conditions affect one's life satisfaction.*"

For example, it is reasonable to hypothesize that there are differences for women and men, given their physiological differences, their different roles in society, and the differences in family rising (Eagly, 1987).[27] A similar reasoning could be used to argue for differences across age groups, education levels, and economic status. Therefore, this section studies the differences between life satisfaction and satisfaction in the domains of life across variables such as gender, age, education, and income. The analysis is partial in the sense that it focuses on differences across only one socioeconomic and demographic characteristic at a time. A joint consideration of all the socioeconomic and demographic characteristics is made in section 7.

6.1   Gender

Table 5 presents the mean satisfaction levels for women and men; these averages are calculated for *life satisfaction* and for satisfaction in each domain of life. Table 5 also shows a men to women ratio for these satisfactions.

It is observed that differences across gender are, on average, minimal. Men tend to be slightly more satisfied with their lives than women; and they are also more satisfied in all domains except the *economic* one. Men are more satisfied in domains that have proven to be very important for *life satisfaction*, such as the *family*, *job*, *health* and *personal* domains. This fact gives men an advantage in what respects to *life satisfaction*; however,

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[27]   Role difference and family rising depend on a country's culture and traditions (Mallard *et al.*, 1997). Therefore, the findings from this investigation are valid only for Mexico, and could substantially differ with respect to other countries.

this advantage is partially offset by women being more satisfied in the *economic* domain, which is also important for *life satisfaction*.[28]

Table 5 Differences in Satisfaction across Gender Mean Values			
	Women	**Men**	**Ratio Men to Women**
Life Satisfaction	5.10	5.20	1.02
Health	57.44	58.92	1.03
Economic	56.11	54.90	0.98
Job	61.32	62.37	1.02
Family	68.01	69.16	1.02
Friendship	53.99	54.93	1.02
Personal	52.79	55.24	1.05
Community	47.98	49.02	1.02

The greatest difference takes place in the *personal* domain, where men are 5 percent more satisfied than women; it is important to remember that the personal domain refers to aspects of life such as education and personal growth, recreational activities, and availability of time to pursue personal hobbies and interests.

6.2   Age

Three groups were formed according to a person's age: between 18 and 30 years old, between 31 and 50 years old, and 51 years old and more.[29] Table 6 presents the mean values for *life satisfaction* and satisfaction in each domain of life across age groups.

Table 6 Differences in Satisfaction across Age Groups* Mean Values					
	Younger	**Middle**	**Elder**	**Ratio Middle/Younger**	**Ratio Elder/Younger**
Life Satisfaction	5.16	5.19	5.08	1.01	0.98
Health	60.55	58.76	54.09	0.97	0.89
Economic	54.95	56.13	52.96	1.02	0.96
Job	60.77	63.75	57.62	1.05	0.95
Family	70.47	69.39	64.11	0.98	0.91
Friendship	53.13	55.64	53.06	1.05	1.00
Personal	52.33	55.18	54.58	1.05	1.04
Community	45.99	49.54	49.36	1.08	1.07
*The *younger* group refers to people in between 18 and 30 years old, the *middle* group to people in between 31 and 50 years old, and the *elder* group to people older than 50 years old.					

It is observed that *life satisfaction* is, on average, almost the same for middle-age and younger people. Elder people have a much lower satisfaction with life.

In reference to younger people, middle-age persons have lower satisfaction in the *health* and *family* domains; which are very important for *life satisfaction*. But they have higher satisfaction in the *economic*, *job*, and *personal* domains; which are also very

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[28]   This analysis assumes that the relationship between life satisfaction and satisfaction in domains of life is the same across gender. Rojas (2004b) has shown that there could also be differences in the structural relationship itself.

[29]   Satisfaction in the domains of life is highly correlated for elder people. While the average correlation between satisfaction in any two domains of life is 0.21 for young people, it jumps to 0.35 for mid-age people and to 0.40 for elder people. See also Pinquart and Sorensen (2000)

important for *life satisfaction*. Middle-age people also have higher satisfaction levels in the *friendship* and *community* domains of life.

In reference to younger people, elder persons have lower satisfaction in such important domains of life as *family*, *economic*, *job* and *health*. They have higher satisfaction in the *personal* and *community* domains. Thus, it is not surprising that elder persons have lower *life satisfaction* than young and middle-age persons.

6.3   Education

The sample was divided into three groups according to a person's education level. The low-education category includes persons with an education level of secondary school at most. The mid-education category includes persons who have high-school, technical, and semi-professional studies. The high-education category includes persons with university studies, both at the undergraduate and graduate levels.

Table 7 shows the mean values for *life satisfaction* and satisfaction in each domain of life across education groups.

Table 7 Differences in Satisfaction across Education Groups* Mean Values					
	Low	**Middle**	**High**	**Ratio Middle/Low**	**Ratio High/Low**
Life Satisfaction	5.03	5.23	5.31	1.04	1.06
Health	54.81	59.52	63.82	1.09	1.16
Economic	50.10	56.49	63.95	1.13	1.28
Job	58.34	63.60	67.13	1.09	1.15
Family	65.60	70.26	73.03	1.07	1.11
Friendship	52.72	55.49	56.93	1.05	1.08
Personal	50.09	55.44	61.22	1.11	1.22
Community	48.50	46.99	51.04	0.97	1.05
*The *low* education group refers to people secondary school at most; the *middle* education group to people with high school, technical and semi-professional studies; and the *high* education group to people with university studies.					

A clear and strong relationship between satisfaction and education is observed. *Life satisfaction* increases with a person's education level. A person in the mid-education group is, on average, 4 percent more satisfied with her life than a person in the low-education group. This figure goes up to 6 percent when the high and the low education groups are compared.

There are substantial increases in satisfaction in domains of life such as *family*, *economic*, *job*, *personal* and *health*. Satisfaction in these domains is fundamental for *life satisfaction*. In comparison to a low-educated person, a highly-educated person is 28 percent more satisfied with the *economic* aspects of her life, 22 percent more satisfied in her *personal* domain, 16 percent more satisfied with her *health*, 15 percent more satisfied with her *job* activities, and 11 percent more satisfied in her *family* domain.

Thus, results in Table 7 provide a hint about the importance of education for greater well-being; it seems that the benefits of education reach almost all domains of life, and that further research on how these benefits take place would be valuable.

6.4   Income

The sample was divided into two income categories: The first category includes persons with a monthly household income of no more than 5000 Mexican pesos;[30] these persons can be considered as economically poor on the basis of the criteria set by the Mexican Social Development Secretariat. A second category includes persons with a monthly household income above 6000 Mexican pesos; and they can be considered as economically non-poor. A buffer zone was created for persons with monthly household incomes in between 5000 and 6000 Mexican pesos.[31] There are 250 persons in the economically poor category, 249 in the non-poor category, and 80 persons in the buffer zone.

Table 8 shows the mean values for *life satisfaction*, satisfaction in the domains of life, and household income by income group.

Table 8 Differences in Satisfaction across Income Group Mean Values			
	Economically Poor	Economically Non-Poor	Ratio Economically Non-Poor to Poor
Life Satisfaction	5.03	5.31	1.06
Health	55.11	61.73	1.12
Economic	49.35	61.59	1.25
Job	57.74	66.81	1.16
Family	66.44	71.68	1.08
Friendship	53.09	56.27	1.06
Personal	51.63	57.05	1.10
Community	48.76	48.56	1.00
Monthly Household Income	3160	12570	3.97

The economically non-poor have, on average, a household income that is almost 300 percent greater than that of the economically poor. There is a hint that being economically poor tends to hamper *life satisfaction*, as well as satisfaction in all domains of life. The economically non-poor are, on average, 6 percent more satisfied with their lives. They are 25% more satisfied in their economic domain, 16 percent more satisfied in their job domain, 12 percent more satisfied with their health, 10 percent more satisfied in their personal domain, and 8 percent more satisfied in their family domain.

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[30]   The exchange rate at the moment of the survey was approximately 9.30 Mexican pesos per one U.S. dollar.

[31]   The income curve increases very smoothly in Mexico; thus, the buffer zone allows to create a clear division between economically poor and non-poor persons. People in the buffer zone could be considered either as economically poor or economically non-poor depending on the poverty criteria used to define a person as economically poor.

7. **Socioeconomic and Demographic Variables and Satisfaction in the Domains of Life: Regression Analysis**

Under the domains-of-life approach, socioeconomic and demographic factors do have an impact on life satisfaction through their relationship to a person's satisfaction in the domains of life. Section 6 has provided some hints about the role of factors such as gender, age, education and income. However, section 6 follows a partial analysis; this is: each factor is studied separately; and it is convenient to study the role of all factors in a simultaneous way; in special because some factors are highly correlated.[32] Thus, this section uses regression analysis to study the relationship between satisfaction in each domain of life and the group of socioeconomic and demographic variables explored in section 6.

A regression analysis was applied to the following general specification:

$$DS_{ik} = F(Y_i, G_i, A_i, E_i) \qquad\qquad k = 1, 2, \ldots 7 \qquad\qquad (3)$$

were:

DS_{ik}: person's i satisfaction in domain of life k, in a 1 to 100 scale, k = *health*, *economic*, *job*, *family*, *friendship*, *personal* and *community* domains.

Y_i: person's i household income, in thousands of Mexican pesos.

G_i: person's i gender, 0 for woman and 1 for men.

A_i: person's i age, in years.

E_i: person's i education level, as an ordinal variable in a 1 to 7 scale.

Different specifications were tried with no substantial difference in the results; therefore, the results presented in this section refer to the following linear specification:

$$DS_{ik} = \beta_0 + \beta_1 Y_i + \beta_2 G_i + \beta_3 A_i + \beta_4 E_i + \mu_i \qquad\qquad k = 1, 2, \ldots 7 \quad (4)$$

Table 9 shows the results from the regression analysis for satisfaction in each one of the seven domains of life under consideration. The goodness of fit is, in general, very low, indicating that the group of variables in the analysis explains just a low percentage of the variability in satisfaction across persons.

An analysis by domain of life indicates that:

a. *Health* domain: Age, gender and education are statistically related to satisfaction in the *health* domain. *Health* satisfaction strongly declines with age; and men declare higher *health* satisfaction than women. Education is a very important explanatory variable of *health* satisfaction. The impact of income in *health* satisfaction is very weak. The

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[32] For example, the correlation coefficient for the relationship between income and education is 0.50.

goodness of fit (R-squared) is very low (0.084); hence, the socioeconomic and demographic variables explain only a small portion of the variability in *health* satisfaction.

b.   *Economic* domain: Satisfaction in this domain of life is strongly related to a person's income and education, but it is not affected by a person's gender nor by her age. Keeping all other things constant, the difference between a highly educated person (category 7) and an uneducated person (category 1) is of about 14 points of *economic* satisfaction. On the other hand, an increase in monthly household income of 7000 Mexican pesos[33] would rise *economic* satisfaction in 4 points. The R-squared is relatively high (0.196); thus, the socioeconomic and demographic variables have their greater explanatory power in the *economic* domain.

c.   *Job* domain: Satisfaction in the *job* domain is greater for men than for women; it tends to decrease with age, and it is positively and strongly related to both education and income.

d.   *Family* domain: This domain has proven to be strongly related to *life satisfaction*. It is found that *family* satisfaction is strongly related to a person's education level. Keeping all other things constant, the difference between a highly educated person (category 7) and an uneducated person (category 1) is of about 11 points of *family* satisfaction. Men are more satisfied in their *family* domain than women (2.7 points of difference); and *family* satisfaction tends to strongly decline with age. It is also found that a person's household income does not make a difference in what respects to *family* satisfaction.

e.   *Friendship* domain: Satisfaction in this domain is positively related to a person's education. There is no relationship at all with a person's gender, age and household income.

f.   *Personal* domain: Satisfaction in this domain has also proven to be important for *life satisfaction*. It is found that satisfaction in this domain is strongly related to a person's education. Keeping all other things constant, the difference between a highly educated person (category 7) and an uneducated person (category 1) is of about 19 points of *personal* satisfaction. *Personal* satisfaction is also greater for men than for women. It is also found that income and age are not important explanatory variables of *personal* satisfaction.

g.   *Community* domain: It is found that satisfaction in this domain of life is not related to any of the socioeconomic and demographic variables under consideration.

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[33]   This figure of 7000 Mexican pesos corresponds to about one standard deviation in the survey.

	Health		Economic		Job		Family		Friendship		Personal		Community	
	coeff.	Prob.>t	coeff.	Prob.>t	coeff.	Prob.>t	coeff.	Prob.>t	coeff.	Prob.>t	coeff.	Prob.>t	coeff.	Prob.>t
Constant	55.92	.00	43.60	.00	55.86	.00	66.30	.00	46.81	.00	36.93	.00	44.12	.00
gender	2.846	.05	-.145	.91	2.326	.10	2.685	.05	.938	.50	3.103	.03	.932	.46
age	-.210	.00	-.054	.32	-.105	.08	-.169	.00	.028	.64	.063	.29	.067	.22
education	1.943	.00	2.429	.00	1.173	.02	1.792	.00	1.256	.01	3.183	.00	.057	.90
income	.151	.15	.565	.00	.554	.00	.074	.46	.149	.15	.040	.70	.139	.14
R-squared	0.084		0.196		0.110		0.065		0.029		0.099		0.010	

Table 9
Satisfaction in Domains of Life and Socioeconomic and Demographic Variables
Linear specification: Regression Analysis

8.   Final Considerations

This investigation followed a subjective well-being approach to study a person's well-being. It was argued that life satisfaction, as declared by the person herself, provides information that is useful in the study of human well-being. The approach has many advantages, in particular because it deals with human beings as they are: human beings of *flesh and blood*, and *in their circumstance*. In addition, according to the domains-of-life literature, the whole construct of a person's life satisfaction can be approached from a domains-of-life perspective; this is: life satisfaction is understood in its relation to satisfaction in concrete areas of being.

On the basis of information from a Mexican survey, the investigation used factor-analysis techniques to define seven domains of life (*health*, *economic*, *job*, *family*, *friendship*, *personal*, and *community*) and to construct indicators of satisfaction in these domains. The empirical research confines itself to persons who function in all seven domains of life. The relationship between *life satisfaction* and satisfaction in the domains of life was studied.

It was found that satisfaction in the *family* domain is crucial for *life satisfaction*; this domain includes satisfaction with spouse, children, and rest of family. Satisfaction in the *economic* and *personal* domains is also very important for a person's satisfaction with her life. The *economic* domain refers to satisfaction in areas of life such as housing and living condition, financial solvency, and income; while the *personal* domain refers to satisfaction in pursuing personal hobbies and interests, in recreational activities, and in personal growth. The *health* and *job* domains are less fundamental, but still important for a person's satisfaction with life.

The domains-of-life literature implies that the impact of socioeconomic and demographic variables on life satisfaction passes by their influence in domains of life satisfaction. Hence, their importance depends on how strong their influence is in those domains that have proven to be important for life satisfaction. A variable would be more important in explaining *life satisfaction* if it is strongly related to satisfaction in those domains that are more important in generating *life satisfaction*.

The investigation also found that the positive impact of more education spreads across almost all domains of life under consideration. Thus, education is a very important variable in explaining satisfaction in many domains of life and, in special, in those domains of life that are important for *life satisfaction*; such as the *family*, *economic*, *personal*, *health* and *job* domains. The impact of education is relatively

strong in what respects to satisfaction in the *personal*, *family* and *health* domains.[34] Hence, education could be a powerful instrument in the social procurement of well-being.[35]

The impact of more income on domain satisfaction is limited to the *economic* and *job* domains. Satisfaction in these domains have proven to be important for life satisfaction and, in consequence, income can play a role in increasing *life satisfaction*. However, income is not a relevant explanatory variable for satisfaction in domains such as *family* and *personal*, which are also crucial for *life satisfaction*.

In what respects to gender, it is found that men are more satisfied than women in the *health*, *job*, *family* and *personal* domains; which are important for *life satisfaction*. Similarly, it is found that satisfaction in the *health*, *job* and *family* domains declines with age. These gender and age differences in domain satisfaction could emerge from the interaction of physiological differences and social institutions that turn these differences into dissimilar satisfaction levels.

The low goodness of fit of the domains-of-life satisfaction regressions indicate that more research is needed in the understanding of domains-of-life satisfaction. It is clear that satisfaction in the domains of life does not closely follow some indicators that are usually used as its proxy.

Well-being, understood as life satisfaction, and approached from a domains of life perspective, is a complex phenomena. As it is articulated in John Hicks' statement, it goes beyond the economics arena to include other aspects of life. These domains of life are interrelated in intricate ways and their relationship to life satisfaction is non linear. Because of diminishing returns to domain satisfaction, the life-satisfaction benefit from an improvement in any domain satisfaction is greater when the initial satisfaction in that domain is low than when it is high. Therefore, concern for well-being improvement should focus not only on those domains that are very important, but also on those domains where satisfaction is relatively low. In consequence, in what respects to research and promotion of human well-being, it is better to keep a broad perspective and look at all those features that lead to a life a person is satisfied with,

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[34]   The relative importance of education can be measured in terms of a substitution rate with respects to income. In the *health* domain, it would take 12900 Mexican pesos of monthly household income to compensate for a decline of one category in education. This figure is 24200 Mexican pesos for *family* satisfaction; and it is 79600 for *personal* satisfaction.

[35]   This research is based on the quantity of education (education level) which a person has. It is obvious more research is needed in such precious areas as the nature and quality of the education curricula.

rather than to concentrate in the promotion of satisfaction in just one domain (such as the *economic* one) From an academic perspective, this implies that the study of well-being asks for an interdisciplinary, or a transdisciplinary, approach. In addition, the study of well-being can not avoid subjectivity, since it is the person (subject) the one who, in the end, lives the condition of being well.

Knowledge about which and how domains of life are important for a person being satisfied with her life is of value for policy making. It is necessary to identify those personal resources that contribute to satisfaction in each domain of life. For the social procurement of well-being it would also be valuable to understand the role that social institutions, and the organisation of society in general, play in domains of life satisfaction.

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