

The Relationship Between Perceived Life Satisfaction and Measures of Economic Well-being

Robin A. Douthitt, Maurice MacDonald, Randolph Mullis¹

This study examines the relationship between people's perceived overall life satisfaction and economic well-being. Three different models are examined using different measures of economic well-being-- the Life Cycle Income, Relative Income, and Resource Deficit Hypotheses. Results indicate that the Relative Income Hypothesis model performs best.

INTRODUCTION

This study will address the interesting and important issue of the relationship between a person's objective, economic well-being and subjective, psychological well-being. Despite a generation of quality of life research, the relationship between these two types of well-being has been dealt with only superficially in the literature. The literature has been particularly lax in its treatment of the economic variables measuring those variables poorly, if at all. Thus, the main contribution of this study is its potential to relate quality of life measures, as defined by sociologists and social psychologists, to more carefully constructed measures of economic well-being. In so doing, it is expected that more variation in psychological well-being can be accounted for by using improved measures of economic well-being than that previously accounted for by measures traditionally used in quality of life research.

Previous social science research has studied one's perceived psychological well-being as it is shaped by personal aspirations, life expectations and choice of means necessary to pursue the desired ends. It has been found that when personal choices have negative consequences, those consequences may culminate into feelings of despair, disenchantment, powerlessness, estrangement, or false-consciousness (Mead, 1962; Durkheim, 1951; Merton, 1957; Wachtel, 1983). Rainwater (1974:17) indicates that in all societies, human beings evaluate their well-being based upon the degree to which circumstances allow them to engage in "validating activities." Such social actions affirm a person's identity as a respected member of society, in consonance with one's sense of inner needs, whether they be simple, physical needs, or more complex, transcendent needs.

Admission into "validating activities" in contemporary society is largely achieved through consumption and is heavily conditioned by one's financial surplus. Thus, one would expect that people's positive and negative quality of life assessments would have a strong correspondence to their acquisition and disposal of economic

resources. Paradoxically, however, while a positive relationship may exist between income status and psychological well-being, it is not an exclusive relationship. Campbell (1976) characterizes it as follows:

There is no doubt that over the last twenty years, high income people in the United States have been more likely to describe themselves as "very happy" than those with low incomes. Looking at five national surveys conducted between 1957 and 1978, we find an unmistakable pattern. In each of these years, the proportion of "very happy people" is higher as we move from low-to-high income levels. A very stable relationship, but by no means an exclusive one. Even among the most affluent, there are a large minority who describe themselves as less than very happy, and a sizeable minority of the least affluent claiming that they are very happy. Happiness is far from the exclusive domain of the well-to-do.

In the surveys referred to by Campbell, as in most research conducted by sociologists or psychologists, the measure of economic affluence is "current income" (e.g., Dohrenwend, 1973; Edwards and Klemmack, 1973; Clemente and Sauer, 1976; Hall, 1976; Allardt, 1977; Danziger, 1980; Andrews and McKennel, 1980; Fernandez and Kulik, 1981; Kessler, 1982; Link, 1982; Gray et. al., 1983; Hofferth, 1983; Haring et. al., 1984; Mutran and Reltzes, 1984; Keith, 1985; and McLanahan, 1985).

Current income is an unstable predictor of well-being in that it does not accurately reflect consumer behavior with respect to consumption or saving, nor does it reflect other components of financial security which undoubtedly contribute to a sense of well-being. To accurately evaluate and account for the economic resource effects on psychological well-being, it is critically necessary to disentangle the economic variation represented by any single current income level. For example, a group of individuals, each with an annual income of \$30,000, is highly likely to diverge with respect to other important economic resources. Some may have low or negative net worth (i.e., assets minus liabilities), while others have relatively high net worth. Some may have relatively inadequate contingency assets. Yet, on the other hand, many may be experiencing relatively high, while others relatively low, current incomes with respect to future incomes. Thus, this project's significance may be summarized by the specific aim of developing several rigorously defined measures of economic well-being to accurately analyze the relationship between the economic domain and psychological well-being.

METHODS

The data used for this study are from the Wisconsin Basic Needs Study (BNS), a survey of Wisconsin residents, gathered by the Institute for

¹ The authors are respectively, Associate Professor, Professor, and Assistant Professor in the Department of Consumer Science, University of Wisconsin, Madison.

Research on Poverty at the University of Wisconsin at Madison. The BNS was conducted to ascertain information on family household expenditures, income and other economic and demographic characteristics. Respondents, whose selection is described below, were interviewed five times, one personal and four telephone interviews, over the course of 18 months. The 1,816 households who completed the first personal interview were originally contacted through random-digit-dialing within pre-specified geographic areas. Respondents also completed three two-week diaries of all expenses during the months to which their telephone interviews referred. This procedure was intended to measure food expenditures and other frequently recurring financial outlays, such as for personal care products and gasoline.

The first personal interview collected background demographic information on the respondents² and other household members³. Information from the subsequent phone interview were used in this study to identify monthly income, debt balances, changes in household demographics, and subjective evaluation of well-being.

For this study we were concerned with potential bias due to sample attrition. There were two potential sources of attrition; those respondents who could not be located for the follow-up phone interview and those who did not complete the expenditure diary. Two hundred and forty respondents could not be located for the first phone call interview. The diary completion rates were about 80 percent of the telephone survey. To correct for potential biases that arise from these effects, a weighting procedure to correct for sample selection bias was also conducted⁴. The sample used for this analysis was drawn by eliminating single individuals under 40 years of age, respondents with own children over 30 years of age living at home, and households where either non-relatives or extended family members were present. The final sample size was 654. Table 1 provides some summary sample statistics.

VARIABLES

Psychological Well-Being

Many scales have been created by sociologists or psychologists to measure psychological well-being⁵. The dependent variable used in this

² The respondent was defined as the individual with the most responsibility for the household's finances.

³ Households were defined as "the set of people at one address who are related either by blood, marriage, or other legal arrangement, or who share major expenses."

⁴ The results of those analyses are available from the authors upon request.

⁵ See for example Bradburn and Caplovitz (1965); Herzberg and Hamlin (1961); Herzberg, Mausner and Snyderman (1959); Bovard (1962); Campbell, Converse and Rodgers (1976).

research as a measure of psychological well-being is constructed by conducting factor analysis on responses to a total of fourteen items asked in the BNS to assess respondent satisfaction with various aspects of their life. Factor weights were then applied and the weighted sum divided by the number of items to construct an index of overall well-being, thus retaining Andrew & Withey's (1976) seven point (1= terrible; 7= delighted) scale. Since three of the fourteen items relate to job satisfaction, separate weights were calculated for the two groups of employed versus non-employed respondents⁶.

Economic Well-Being

Three measures of economic well-being are constructed to test the relationship between psychological and economic well-being. They include (1) Modigliani and Brumberg's (1954) "Life Cycle Income Hypothesis" (LIH) which states that consumers' sense of well-being is grounded in their ability to maintain a relatively level pattern of consumption throughout their lifetime, (2) Duesenberry's (1949) "Relative Income Hypothesis" (RIH) which argues that consumers' reference groups have a direct impact on the extent to which economic resources are regarded to be adequate or inadequate, and (3) Kyrk's (1953) "Resource Deficit Hypothesis" (RDH) which suggests that the greater the discrepancy between the economic resource level to which one aspires (standard-of-living) and the actual level experienced (level-of-living) the lower the reported psychological well-being.

The life cycle income hypothesis is operationalized by including measures of the respondent's current and expected income as well as net worth. These variables better measure the life cycle concept of economic well-being and thus should better indicate the family's perceived ability to maintain a relatively level pattern of consumption throughout their lifetime. Expected income was imputed for each household by (1) regressing current total family income on respondent education, respondent occupation, and youngest adult's age and age squared (2) generating an income stream over the life cycle from T+1 to D, remaining life expectancy of the youngest adult (3) summing that stream, and (4) dividing by remaining life expectancy of youngest adult in the household. Current net worth was calculated by netting liabilities from assets and dividing by the remaining life expectancy of the youngest adult in the household.

Duesenberry's relative income hypothesis is operationalized by including not only family income but also a measure of relative consumption. We measure relative consumption by calculating the sample mean total monthly expenditures for goods

⁶ Items used in the constructed index include satisfaction regarding family life, physical needs, accomplishments, government economy, leisure activities, standard of living, housing, health, financial security, cost of living, income, job, employment remuneration, and work environment.

Table 1.
Weighted sample means and standard deviations.

	Mean	Std. Dev.
Family Income	\$20,765	14312
Family Size	2.71	1.48
Total Monthly Expenditures	\$1,551	1283
Expenditures/Md. Income	1.41	1.16
Household Equivalence	1.89	3.42
Percentage of:		
Two Parent Families With:		
Preschool Kids	11%	31
School Age Kids	19%	39
Launching Kids	12%	33
Single Parent Families With:		
Preschool Kids	1%	10
School Age Kids	7%	25
Empty Nest Families	23%	42
Older Single	20%	40

and services and netting that value from the family's actual total monthly expenditures. In this way we capture the "relative" nature of economic well-being or the extent to which families are keeping up with the average (Jones) family's consumption.

Because of respondent's tendencies to express satisfaction with their current income, direct testing of Kyrk's resource deficit hypothesis level minus standard of living relationship is not very fruitful. Thus we chose rather to operationalize this hypothesis by examining responses to the question, "How much income would make you feel terrible" and net that value from current family income. Because respondents would implicitly take into account family needs when answering this question, there is no need to control for that factor (i.e., family size) in the resource deficit hypothesis life satisfaction analysis.

Life Cycle Variables

Researchers have found that stresses associated with life cycle stages are important predictors of psychological well-being. Stage in the family life cycle affects one's work values during the life course, especially the importance a person places on financial rewards which are in turn affected by such factors as marital status, number of dependent children, and the need for income.

Wilensky (1981) and Estes and Wilensky (1978) have conducted extensive research to analyze the relationship between stage of the life cycle and sense of well-being. Wilensky (1981) developed the concept of "life cycle squeeze" which represents stages during which people experience minimal job satisfaction, lowest participation in community life, greatest financial and family burdens and the greatest psychological tension.

In view of the importance of the stage of the life cycle as a predictor of well-being, we have constructed indicator variables similar to those used by Estes and Wilensky (1978). However, most notably missing from the Estes and Wilensky definitions is a stage in the life cycle where one

might become a single parent. Thus, we have added such an indicator variable to the analysis.

These life cycle variables are included in both the relative income and resource deficit hypotheses models. However, they are not included in the life cycle income hypothesis model, since respondent's age, which is highly correlated with life cycle stage, is used to calculate annuitized net worth.

Control Variables

In addition to measures of economic well-being effects, it is necessary to control for family needs in testing the relationship between the life cycle income hypothesis and life satisfaction. In previous studies of well-being, such measures were often either omitted or a gross indicator like family size was used. In this study, household equivalence scales are constructed to control for such effects.

The particular household equivalence measure used in this analysis is one developed by Buse and Salathe (1978) and modified by Tedford, Capps and Havlicek (TCH) (1986). The primary advantages of the Buse and Salathe equivalence scale calculation is that their scale is expressed as a continuous rather than discrete function of age. TCH's contribution involves respecification of the scaling functions in a manner consistent with the human development literature by augmenting stages first identified by Levinson et al. (1978). Like Buse and Salathe, TCH incorporate the well behaved, cubic spline functions to calculate the continuous adult scale functions. In sum sixteen weighted sum variables are calculated as a function of household age and gender characteristics and regressed on total monthly expenditures for food to derive the household equivalence measure⁷.

The household equivalence measure was not included as a control in either the relative income or resource deficit hypothesis models. Because calculation of the equivalency variable is based on a life cycle model, including it with those variables in a model will result in inefficient estimates. In the resource deficit model there is no need to control for family needs, as the respondent would implicitly make such an assessment in expressing what level of income would make them feel terrible.

RESULTS

Results of our analysis are presented in Table 2. Because of high collinearity between the annuitized net worth variable and stage of the life cycle, life cycle variables were dropped from the life cycle income hypothesis specification. The lambda, sample selection correction term proved insignificant in all three models. All models' specifications explained a significant

⁷ Details of this procedure are available from the authors upon request.

Table 2. Regression results of life satisfaction and the life cycle (LIH), relative income (RIH), and resource deficit (RDH) hypotheses (standard errors in parentheses).

	LIH	RIH	RDH
Constant	3.228** (.622)	1.216** (.464)	2.62** (.294)
ln INCOME	.209** (.031)	.174** (.027)	-
ln EXPECTED INCOME	-.213** (.054)	-	-
DIFFERENCE	-	-.231(E-04)* (.114 (E-04))	-
HH EQUIVALENCE	-.043** (.862 E-02)	-	-
ACTUAL-MINIMUM INCOME	-	-	.347(E-05)** (.623 E-06)
ANNUITIZED NET WORTH	.677 (E-06) (.915 E-06)	-	-
MARRIED:			
PRESCHOOL KIDS	-	-.120 (.062)	-.115 (.062)
SCHOOL AGE KIDS	-	-.054 (.057)	-.036 (.057)
LAUNCHING	-	-.212** (.062)	-.213** (.062)
EMPTY NEST	-	.127* (.056)	.123* (.056)
SINGLE:			
PRESCHOOL	-	-.252 (.141)	-.315* (.143)
OTHER KIDS	-	-.207** (.070)	-.234** (.071)
SURVIVOR	-	-.129* (.059)	.082 (.058)
LAMBDA	-.564 (.553)	-.432 (.483)	-.146 (.454)
Adjusted R ²	.12	.15	.13
Chi-Square	100.35**	135.79**	118.09**

*, ** Significant at the .05 and .01 levels, respectively

amount of variance in the dependent variable, overall life satisfaction, about 15-20%⁸

Life Cycle Income Hypothesis Results

Results of the LIH model indicate that both current and expected family income, as well as the household equivalence variables are significantly related to life satisfaction. Current income is positively related to life satisfaction as expected. However, expected future income is negatively related to current life satisfaction. This potentially indicates that transitory stages of reduced income (i.e., periods where one's current income falls below permanent income) results in diminished current satisfaction. The household equivalence parameter is of the expected sign, indicating that increasing family size by one standard unit (in this case the equivalent of a 19 year old male) results in reported diminished level of life satisfaction. The annuitized net

⁸ In previous work by the authors (forthcoming) the explained variance of a simple model including only income and family size was about 7%.

worth variable proved insignificant, although of the predicted sign.

Relative Income Hypothesis Results

The RIH model explained the largest percentage of variance in the dependent variable of the three models. Results again support the positive and significant relationship between current family income and overall life satisfaction. The Duesenberry relative income hypothesis variable, DIFFERENCE, parameter indicates that holding current income constant, as one's expenditures exceed those of an average household, life satisfaction is diminished. To the extent that this variable also captures whether the household's savings rate (or perhaps more importantly dissavings rate) falls short of (exceeds) that of a reference household, it would imply that such behavior leads to diminished overall life satisfaction.

In addition, life cycle variables were highly related to reported life satisfaction. In this analysis the comparison (omitted) life cycle stage is that of the young childless couple, and results indicate that all other groups with the exception

of couples at the empty nest stage of the life cycle report feeling diminished life satisfaction.

Resource Deficit Hypothesis Results

The greater the difference between respondent's current income and the level of income that they reported would cause them to feel terrible (ACTUAL-MINIMUM INCOME), the higher their current life satisfaction. Similar to the RIH findings, stage of the family life cycle is also an important factor in explaining life satisfaction. One difference in this model however, is that the survivor households do not report being significantly less happy than young childless couples, controlling for current income adequacy.

SUMMARY

Generally, all three models of economic well-being performed favorably in explaining psychological well-being. It could be argued that the relative income hypothesis model is the simplest and most powerful of the three. In some respects our theoretical specification of the RIH allows us to examine whether keeping up with the Jones' really contributes to or detracts from one's overall life satisfaction. Results indicate that how far from average we are in terms of expenditure patterns is important, but that spending less than average, holding income constant, improves perceived life satisfaction.

Two additional important conclusions from this work can be drawn. First, a careful specification of economic variables in models explaining family life satisfaction will have important payoffs in terms of explained variance. However, which economic theory of utility maximization used may not be as critical. The more complexly specified life cycle income hypothesis model does not perform any better than the other models whose variables are much easier to derive. Secondly, when economic factors are included in life satisfaction models, the long standing a priori economic postulate that increased income will lead to higher levels of satisfaction is supported.

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