FINANCIAL SERVICES REVIEW

Financial Services Review 12 (2003) 239–255

A Grading System for Evaluating Internet Life Insurance Needs Calculators

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Accepted 17 July 2003

Abstract

Life insurance purchase decision calculators can be found on many Web sites. These Web sites provide various forms of calculators and make calculations based on different theories. They claim to provide an accurate calculation of how much life insurance a person should purchase. This paper focuses on the factors entering into making the computations. It does not comment on the accuracy of the calculations. Eighty-nine Web sites are graded by the count of raw factors. These factors also are weighted by an "expert panel." Results indicate little difference in raw versus expert weightings of the factors. Results stress the need to follow the needs-based approach. We find much of the variation in the quality of Web site advice results from input factors.

Keywords: Internet grading; Life insurance needs; Needs-based calculation; Life insurance calculator; Life insurance consumer information

1. Introduction

The impact of the Internet on consumer behavior including facilitating both information searches and transactions continues to grow rapidly. People are able to find information on most financial topics including life insurance. Much life insurance information is provided on the Internet from various types of organizations including life insurance companies, Web site

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1057-0810/03/$ – see front matter

consolidators and consumerist organizations.[1] These organizations provide general information about life insurance, allow individuals to acquire life insurance premium quotes and frequently provide recommendations about how much life insurance should be purchased based on user-provided input.

Dorfman and Adelman (2002) analyzed the quality of and consistency of life insurance recommendations made by life insurance Web sites.[2] They found that these recommendations generally were unreliable and highly variable compared to two benchmarks. This paper follows the initial research and is focused on determining why such variable, and often inaccurate, Web site advice is being provided to the public. Two possibilities exist for bad output from these calculators:

- There is inadequate input, or
- The underlying mathematical model is inaccurate or illogical.

Inadequate input can result from such things as: ambiguous instructions, omission of a request for key variables, and inflexible input formats. Even with inadequate input, it is possible for a Web site calculator to produce "accurate" output, as measured against expert opinion, either by chance or as the result of offsetting errors. The mathematical models underlying the calculations used at Web sites are based on proprietary information and were not available to the authors. This paper evaluates only the input requested by Web site calculators, as this information is available to researchers as well as the public. The paper ignores the issue of the accuracy of the output, as that was the subject of Dorfman and Adelman (2002).

2. Plan of the paper

The paper begins by briefly presenting the theory underlying the calculation of life insurance needs. Many experts, including the authors, use the needs-based approach to answer the question: how much life insurance should a person buy? The following section presents a framework explaining the logic of the authors' grading system. The data are then analyzed using raw or unweighted data. The information is then weighted using an expert panel. The final section provides observations and conclusions and suggests areas for further study.

At this paper's core is the development of a valid grading system for measuring the adequacy of the input scheme at various Web sites providing life insurance recommendations. At least one commercial firm, Dalbar Inc., now provides a grading system for life insurance and annuity Web sites. Their approach to grading results appears to emphasize "cosmetic" issues, including ease of navigation, and currency of information.[3] In contrast to Dalbar, the authors' grading system emphasizes comprehensiveness of the questions used to develop input for mathematical models employed at Web sites.

A grading system for the quality of input is valuable for the following reasons:

- Using this scoring system, consumers will be able to identify the quality of a particular Web site, at least with respect to the input requests used in a life insurance amount recommendation.
- Web site sponsors using the grading system developed in this paper can evaluate how their respective site compares to their competition.

- The efficiency of the market may be improved if consumers select and use the better calculators and if sponsors are pressured to improve their input requirements and calculations.

3. A theoretical background of the logical amount of life insurance to purchase

Three broad theories explain the most frequently encountered calculation of the amount of life insurance to purchase: the indemnity theory, the n-times earnings theory, and the needs-based analysis theory. Dorfman and Adelman (2002) discuss and describe the advantages and drawbacks to each of these theories before arguing for using the needs-based analysis approach. Their arguments are not repeated in this paper. Because the authors believe the needs-based theory produces the most logical answer to the question "How much life insurance is appropriate in a given case?" the framework for the scoring system developed in this paper is based on that alternative. The authors admit their preference for the needs-based approach is based on logic and not mathematical proof. The indemnity approach and the n-times earnings approach have some justification and are advocated in practice. The on-going debate centering on the suitability of particular life insurance products to meet a given individual's need for coverage, which involves various insurers, state regulators, and various industry trade associations, illustrates how difficult it is to reach agreement on suitability in products, and, by extension, the method of determining the appropriate amount of coverage.

The logic underlying the needs-based approach is straightforward. First, it is assumed that death occurs immediately. Next, all needs for funds associated with the individual's death are totaled. Then, the funds available to meet postdeath needs are totaled. Finally, the difference between the postdeath needs and the postdeath resources is calculated. The result equals the additional life insurance required in the given case. In the event that available assets exceed anticipated needs, as would be the case if there were no need for life insurance, the needs based approach would produce a zero result in the equation. Both the indemnity approach and the n-times earnings approach can produce a recommendation for a life insurance purchase even in cases where no need can be demonstrated, highlighting the difference between the approaches, and explaining the authors' preference for the needs-based solution.

The needs-based approach can accommodate a wide variety of common needs as well as special needs dictated by the circumstances of the individual or family. Examples of special needs include life insurance for business continuation plans, testamentary bequests, permanently disabled children, for dependent parents or for coverage of (potentially) impaired lives.

Web site life insurance calculators must request input before recommending the amount of life insurance to purchase. Not all the Web site calculators reviewed by the authors requested information about common postdeath needs for funds. Presumably this information is not needed for sites relying on n-times-earnings or indemnity type recommendations. However, even many needs-based calculators fell short in probing for information that would highlight or identify special needs. Clearly, if information about special needs is not requested, life insurance for these special needs will be omitted from consideration.

4. Framework for the scoring system

The authors' scoring system is based on a logical assessment of the factors that should go into a needs-based determination of how much life insurance is appropriate.

The authors developed a list of factors that, we believe, should be included in any needs-based calculation that is publicly available. Even though all factors would not be used in all cases, the Web site needs to be prepared to include all factors because the provider makes the Web based resource available to everyone. Clearly, Web sites based on the indemnity or n-times earnings models will fare poorly when evaluated on the authors' needs-based framework. That is, an n-times earning model only requires answering one question: "How much do you earn?" to produce its life insurance recommendation. In fact, a few of the Web sites did only ask this question, and they did not score well in our grading plan.

4.1. Permanent and temporary needs

The needs-based theory makes a distinction between permanent and temporary needs. By definition, permanent needs are not a function of time; they are present at all ages but the dollar amount of the need may change over time. Permanent needs include the need for a burial fund, the need for an emergency fund for survivors, and the need to support permanent dependents. Temporary needs are a function of time. Some temporary needs disappear relatively slowly over time, while some temporary needs disappear more abruptly. However, the distinguishing characteristic of temporary needs for life insurance is that they will end at a point in time that can be identified when the policy is purchased. The needs-based theory suggests that permanent needs be met by cash value (savings accumulating) policies, while temporary needs be met by term life insurance (no savings values accumulate). The amount of life insurance recommended based on a needs approach should not change regardless of whether a Web site distinguishes between temporary needs, permanent needs or makes no recommendation.[4] Even though the amount of life insurance should not change based on the type of need, the Web site should distinguish between permanent and temporary needs and, therefore, acknowledge the importance of the different types of life insurance.

The authors found that none of the Web sites in this study distinguished between permanent and temporary needs. However, when pricing was available, the Web site recommended term insurance for all needs. Any Web site omitting the distinction between permanent and temporary needs failed a test for completeness on the authors' grading system.

4.2. Other scoring system factors

Based on the underlying theory of the needs-based purchase of life insurance the authors have developed a "comprehensive" categorization of factors they would expect to find in an "ideal" input scheme at a Web site providing life insurance amount calculations. The authors validated their scoring system by requesting an expert panel to review and criticize it. The authors invited both academicians who had published articles related to this topic, and practitioners working as financial planners or executives at insurance companies to participate in the study. A total of eight experts were invited and six usable responses were obtained.

Because mathematical proof of the superiority of one input scheme over another is not possible in this instance, expert evaluation is the only logical approach to solving the problem.[5]

The authors categorize the ideal input factors for the needs calculator into the following four major divisions:

- Family structure;
- Environmental, tax, or economic factors;
- Cash needs at death; and
- Other factors.

4.3. Family demographics

A family is defined as all the members of a social unit, typically consisting of a spouse and spouse and their dependent children. In contemporary U.S. society many different types of family structures exist. Because family structure directly impacts the need for life insurance, a needs-based calculator must have accurate information about such things as the ages of family members and the wage and nonwage income of family members.

4.4. Ages of family members

Clearly the ages of the insurance buyer, spouse (if any), and dependents (if any) impacts a needs analysis in many ways including the following:

- Age determines the number of years that income needs to be replaced in the event of a premature death;
- Age establishes the number of years for investment calculations;
- Age determines years for children's dependency;
- Age determines the number of years until a college education starts; and
- Age determines the number of years until Social Security starts or when the Social Security "black-out" period occurs.

4.5. Wage income of spouses

To estimate properly the cash flow available to a family after the premature death of a spouse, any wage income of the surviving spouse must be considered. A surviving spouse may elect to continue to work outside the home for wage income or may prefer to remain at home and provide essential family support, and this choice must be known by the life insurance calculator.

4.6. College costs

If there are dependent children, many families will want to provide them with a college (or private elementary and high school) education. Life insurance proceeds can be used to pay this expense if a parent dies prematurely and there is inadequate savings accumulated for this purpose. Life insurance needs calculators ideally should allow the applicant to indicate that college tuition needs to be funded with life insurance in the event of a premature death.

The ideal input would allow the applicant to plan for a variable number of college years because some students plan to earn advanced degrees. In addition, the inflation rate applied to college costs needs to be distinct or different than the general inflation assumption used in other calculations, as historically college costs have increased at about twice the rate of the Consumer Price Index (CPI).

4.7. Special needs

It is possible that the family may be financially responsible for disabled children, dependent parents, or other relatives. In such cases it is possible that the disabled person may never be able to generate a wage income and thus, an income stream must be identified to handle any support needs—including health care—for the rest of the disabled person's life.

4.8. Spousal retirement income

If the deceased spouse had been accumulating retirement income, and if the accumulated assets are available at this spouse's death, these assets must be counted in the needs-based equation. That is, such assets, net of any embedded tax obligations, should reduce the amount of life insurance needed to support survivors. Also, if the surviving spouse is accumulating retirement income, the amount of life insurance needed to support this spouse must consider the impact of the liquidation of the retirement plan assets when the surviving spouse reaches retirement age.

5. Exogenous financial factors

A number of factors that we define as exogenous financial variables, affect the assets available to survivors and have a direct influence on the present value of life insurance needed by the survivors. The following factors are essential parts of a need-based financial plan:

- Social security benefits;
- Prevailing rates of return;
- Inflation assumptions; and
- Federal and state income tax rates.

5.1. Social security survivor benefits

The survivors of the deceased are entitled to receive Social Security survivor benefits under certain conditions.[6] An estimate of the amount of such benefits in current dollars is readily available from the Social Security Administration. The amount the survivors receive reduces the amount of life insurance needed for income replacement.

5.2. Prevailing rates of return

The survivors' available financial assets, including life insurance death benefits, can earn a rate of return when invested. Over the planning period that income of the deceased is to be

replaced, rates of investment returns must be assumed to arrive at an accurate estimate of life insurance needed.

5.3. Inflation assumption

The amount of income needed by the survivors to maintain a given standard of living will increase each year with inflation, so an inflation estimate should be included to arrive at an accurate estimate of the amount of life insurance needed.

5.4. Federal/state income tax

The tax bracket of the survivors impacts the amount of net income available to them, and must be considered.

6. Cash needs at death

The needs-based analysis is predicated on accurate estimates of cash needs at death. These needs can be divided into two main categories: estate clearance needs, and income replacement needs. The following categories provide focus on and isolate the estate clearance needs.

6.1. Funeral costs

Funeral expenses can vary greatly depending on geographic location and individual preferences.

6.2. Mortgage repayment fund

By paying off any existing mortgage balance, the income needs of the survivors are significantly reduced. Not all individuals have an outstanding mortgage, and some people with an outstanding mortgage loan do not plan to repay the balance in the event of a premature death, so Web site calculators must be flexible in allowing a wide range of input.

6.3. Other debts

Repayment of automobile loans and credit card balances reduce the income needs of survivors. As was the case with mortgage debt, a Web site calculator must be flexible in allowing variation in this input.

6.4. Last illness expenses

A person's death often results in a bill for final medical expenses. Even people with good health insurance may owe a significant amount to medical providers following a lengthy illness because of deductibles, copays, and noncovered expenses. The survivors should have funds available to pay for these costs.

6.5. Estate and probate expenses

The costs of estate settlement must be evaluated, and will vary with the size of the estate. Even when a valid will is in place, costs are still incurred to settle the estate. Further, estate tax liabilities can take away a large portion of the assets available to survivors, and should be included in the estimate of needed life insurance.

6.6. Bequests

If the subject wants to leave money to charity, or lump sums to specific individuals, or wants to make other bequests this plan must be incorporated in the estimate of final expenses at death.

6.7. Emergency fund

Even in the best financial plan, emergencies can arise that will deplete the survivors' assets. Such emergencies can include uninsured medical expenses, home and automobile repairs, and even the funeral expenses of a child or parent. A sum of money should be left to cover these contingencies.

6.8. Other issues

In a comprehensive financial plan, the life insurance needs of both the spouse and the spouse should be evaluated. All but one calculator in our analysis ignores this need. The authors also believe that the financial planner would be negligent to ignore existing life insurance when calculating the amount of insurance needed in any given case. Overinsurance could be a serious problem with the n-times earning approach if existing coverage were not considered.

7. Internet Web sites

The authors used various search engines and key words to search for Internet Web addresses that provide some form of Internet-based life insurance needs calculator. Eighty-nine Web sites were found that allowed consumers to input data resulting in a purchase amount recommendation. These sites were found during November 2001 and are listed in Appendix 1. Each Internet Web site is coded based on whether the sponsor is considered to be a life insurance company, a consolidator of insurance products, or one that is an advocate for consumers. Life insurance companies (Code 1) have a traditional distribution system as well as their Web site. Consolidators (Code 2) are exclusively Web based facilitators of life insurance transactions. Consumer sites (Code 3) do not directly facilitate life insurance transactions, but provide life insurance advice and other services to consumers. Table 1 provides the distribution of Web sites by these types.

Ciccotello and Wood (2001) and Dorfman and Adelman (2002) find in their respective publications that often the same Web site calculators are used by several Web site operators. We have not removed duplicated results from the same calculator from this analysis because consumers would not likely be aware of the fact that multiple Web sites use the same calculator.

Table 1
Distribution of Calculators by Type

Type	Number
1) Life insurance companies	27
2) Consolidator	50
3) Consumer organization	12
Total Web sites	89

Table 2
Life insurance needs calculator rating factors

Factor	Number of sites considering
Family Structure	
Considers age(s) of subject individuals	16
College Costs	58
Adjusts for inflation at college rate	11
Variable years for college	19
Considers the subject's current income	28
Asks only for current income	14
Asks for a percentage or amount of income that should be left to survivors	9
Considers Replacement Income (in general)	66
Considers wage & other income of spouse	29
Provides income for spouse for X years	63
Provides income for spouse indefinitely	7
Considers children and their ages, separately	
Specifically mentions income for spouse during retirement years	6
Consideration for special needs	7
(e.g. disabled children or dependent parents)	
Considers business-related life insurance needs	1
Environmental Factors	
Integrates Social Security survivor benefits	27
Assumes a savings investment rate of return	46
Adjust for inflation	43
Adjusts for tax advantaged savings plans	35
Adjusts for non-tax advantaged savings plans and assets (cash, savings accounts, etc)	55
Adjusts for Federal and State income tax	15
Cash Needs at Death	
Estimate for funeral costs	59
Mortgage repayment fund	65
(Proper use of equity in available assets)	
Estimate for outstanding debt (besides mortgage)	60
Estimate for last illness expenses	22
Estimate for estate and probate expenses	45
Estimate for any bequests	4
Estimate for an emergency fund for survivor(s)	27
Other	
Estimates amounts simultaneously for both the Husband and wife.	1
Considers existing amounts of life insurance	51
Makes a recommendation about type of life insurance	0

Table 3
Expert panel survey life insurance needs calculator rating factors

Factor	Most serious omission (4)	Serious omission (3)	Not serious omission (2)	Trivial omission (1)	Panel average score
Family Structure	3	0	0	0	4.00
Considers age(s) of subject individuals	5	1	0	0	3.83
College Costs	0	3	1	0	2.75
Adjusts for inflation at college rate	1	3	0	1	2.80
Variable years for college	0	2	1	2	2.00
Considers the subject's current income	3	1	0	0	3.75
Asks only for current income	3	2	1	0	3.33
Asks for a percentage or amount of income that should be left to survivors	2	3	0	1	3.00
Considers Replacement Income (in general)	3	3	0	0	3.50
Considers wage & other income of spouse	2	4	0	0	3.33
Provides income for spouse for X years	3	2	1	0	3.33
Provides income for spouse indefinitely	3	2	1	0	3.33
Considers children and their ages, separately	1	5	0	0	3.17
Specifically mentors income for spouse during retirement years	3	2	1	0	3.33
Consideration for special needs (e.g. disabled chilren or dependent parents)	2	4	0	0	3.33
Considers business-related life insurance needs	0	3	3	0	2.50
Environmental Factors	1	3	0	0	3.25
Integrates Social Security survivors benefits	1	3	1	1	2.67
Assumes a savings investment rate of return	0	4	2	0	2.67
Adjust for inflation	4	1	1	0	3.50
Adjusts for tax advantaged savings plans	1	4	0	1	2.83
Adjusts for non-tax advantaged savings plans and assets (cash, savings accounts, etc)	2	3	1	0	3.17
Adjusts for Federal and State income tax	2	2	2	0	3.00
Cash Needs at Death	1	0	2	0	2.67
Estimate for funeral costs	0	0	4	2	1.67
Mortgage repayment fund (Proper use of equity in available assets)	1	1	4	0	2.50
Estimate for outstanding debt (besides mortgage)	1	2	2	1	2.50
Estimate for last illness expenses	0	2	4	0	2.33
Estimate for estate and probate expenses	0	1	4	1	2.00
Estimate for any bequests	1	2	1	2	2.33
Estimate for an emergency fund for survivor(s)	1	3	1	1	2.67
Other					
Estimates amounts simultaneously for both the Husband and wife.	2	2	1	1	2.83
Considers existing amounts of life insurance	4	1	1	0	3.50
Makes a recommendation about type of life insurance	0	1	4	1	2.00

8. Results

Table 2 provides an outline of the scoring factors and the number of Web sites requesting the input or data. Some of the factors were commonly requested such as an estimate for funeral costs or paying off an existing mortgage. However others were rarely requested such as consideration for special needs or business related insurance issues.

Table 4
Unweighted and panel weighted scores

Unweighted Raw Scores		Panel Weighted Scores		
Raw score	Count by raw score	Lower range	Upper range	Count by weighted score
1	0	0.000	6.833	0
2	1	6.833	9.536	2
3	1	0.536	12.239	0
4	14	12.239	14.942	14
5	3	14.942	17.646	3
6	1	17.646	20.349	3
7	2	20.349	23.052	1
8	6	23.052	25.755	6
9	4	25.755	28.458	8
10	7	28.458	31.161	7
11	10	31.161	33.864	7
12	9	33.864	36.567	9
13	8	36.567	39.271	12
14	10	39.271	41.974	4
15	1	41.974	44.677	1
16	2	44.677	47.380	1
17	10	47.380	50.084	11
18	0	50.084	–	0
Total sites	89		Total sites	89

8.1. Expert panel weighting

The results shown in Table 2 are based on a raw count of the characteristics identified (input requested) at each Web site. The authors believe that a scoring system based on merely a raw count of these input factors fails to weight the factors based on the seriousness of an omission. That is, in theory, two sites could each ask for eight input factors on the authors' list, but one site could ask eight critically important questions, while the other could ask eight relatively unimportant questions, and both would have the same raw score. The authors

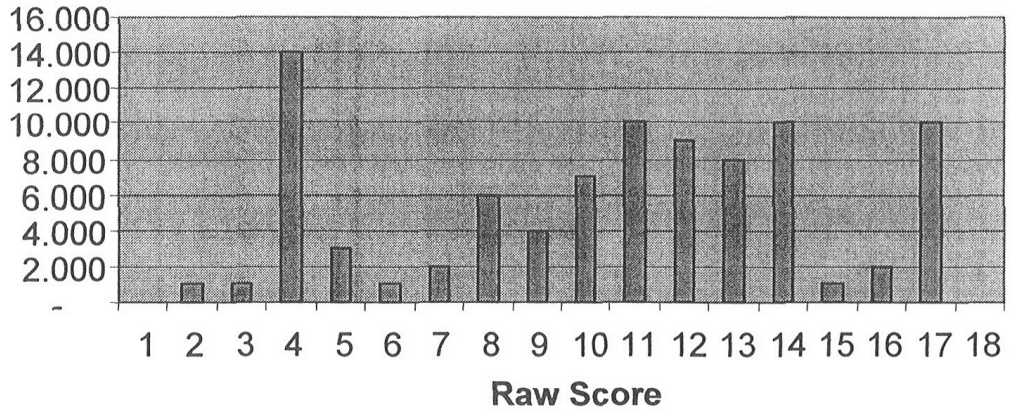

Figure 1. Count by Raw Score

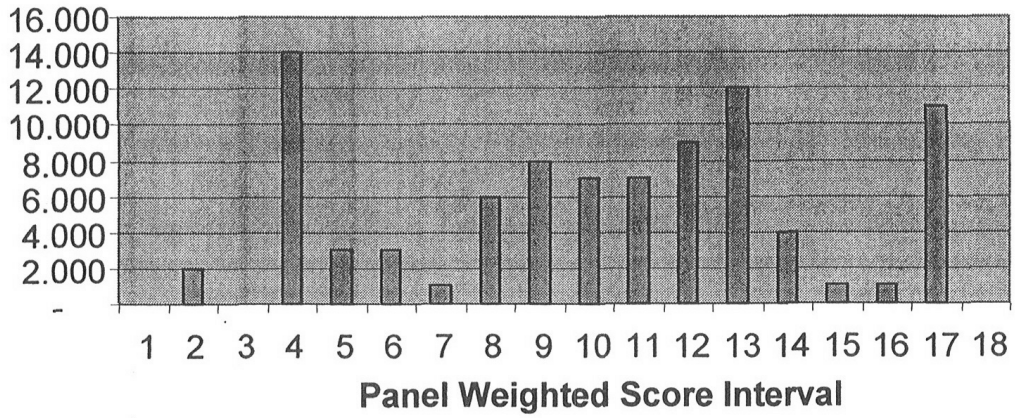

Figure 2. Count by Panel Weighted Score

approach this problem by weighting the factor's impact on a resulting life insurance recommendation if the factor were omitted from the input scheme.

The panel was asked to rate each factor as most serious omission (4), a serious omission (3), not a serious omission (2) and a trivial omission (1).

Some panel members commented about not having a frame of reference to rank the factors. One noted that if a family had no children, then funding a college education would not be important and would not create an omission (serious or otherwise) for this family. However, panel members were subsequently instructed to treat each factor as relevant because the Web sites are available to the general public, and therefore each Web site should be prepared to handle these important factors—even though some may be irrelevant for individual situations and family structures.

8.2. Panel structure

The authors asked eight people to serve on their panel based on their demonstrated expert knowledge of the importance of life insurance in an individual's financial plan. Six of the eight experts returned useful surveys. Four of the experts are university professors teaching risk management and insurance. One panel member is a Branch Manager/General Agent of a major life insurance company. One panel member designed an economic model that calculates life insurance needs.

Table 5
Grading system based on score

Quartile	Raw Score range	Count	Weighted Score Range	Count
1	1–5	19	6.83–17.645	19
2	6–9	13	17.645–28.458	18
3	10–14	44	28.458–39.271	35
4	15–17	13	39.271–50.084	17
	Total	89	Total	89

Table 6
Raw score by type of web site

Raw point range	Quartile	Number in range (code 1) insurance co.	Number in range (code 2) consolidator	Number in range (code 3) consumerist
1–5	1	2 (7.41%)	15 (30.00%)	2 (16.67%)
6–9	2	6 (22.22%)	6 (12.00%)	1 (8.33%)
10–14	3	11 (40.74%)	26 (52.00%)	7 (58.33%)
15–17	4	8 (29.63%)	3 (6.00%)	2 (16.67%)
Total (89)		27 (100%)	50 (100%)	12 (100%)

Table 3 provides the results of the panel members' evaluation of the input factors. The calculated expert panel weights, for each factor, are also reported in the table.

Two scores are generated for each Web site. The first is based on the unweighted existence of the input. Each Web site score—based on the unweighted input—is the sum of the number of factors identified for input. Scores for the Web sites ranged from 2 to 17. A score of 2 would mean that the Web site requested only 2 of the identified factors on the author's list, while a score of 17 means that 17 factors were requested. A higher score means more input is requested by the Web site.

The second score is based on the expert panel's assessment of the importance of omitting a given factor. That is, if the input factor was requested, it was multiplied by the weight the experts attached to the given factor. The score for each Web site is the sum of the weighted factors. When comparing two Web sites, a higher-weighted score indicates fewer serious omissions.

Results of both scoring methods are found in Table 4 and graphically in Figs. 1 and 2. For consistency, since the unweighted raw scores were rated 1 through 18, the weighted scores were uniformly placed into 18 ranges based on its weighted score.

Both scores are placed in quartiles (Table 5) ranking the quality of the Web site with the first quartile being the lowest rating and the fourth quartile the highest rating. An inspection of the scores and their range indicates the wide disparity of requested data for input.

The authors believe that Web sites falling in the upper half of the rating scheme would provide consumers a more complete answer to the question "How much life insurance should I buy?"

Table 6 reveals that insurance companies (with over 70% scoring in the top two quartiles) and consumerist organizations (with 75% scoring in the top two quartiles) provided better calculators than the consolidators (with only 58% scoring in the top two quartiles).

9. Summary and conclusions

Eighty-nine Web sites were identified that provided a life insurance calculator. The calculators were rated based on a series of factors or inputs that the authors believe should be included in a needs-based analysis of life insurance. To judge the relative importance of these factors, an expert panel was employed to provide a weighting scheme.

The Web sites were scored in two ways. The first was based on the raw count of factors

requested by the calculator. The second was based on the presence of the factors, weighted according to importance.

The authors believe that much of the variation in the quality of the output revealed in their earlier study can be explained by the variation in the quality of the input requested. For example, an input scheme relying on one question, "What are your current earnings?" is unlikely to produce output that is comparable with a needs-based analysis. Yet, the authors discovered 16 Web sites that asked 4 or fewer questions. With such limited input, the potential for misleading output appears substantial. The authors wonder what a plaintiff's attorney in a professional negligence lawsuit against a life insurance agent would make of the fact that the agent asked only four, or fewer, questions of the client before recommending an amount of life insurance to purchase.

The authors believe that a rating system such as the one used in this paper allows consumers to evaluate the quality and completeness of the input requested. Web site sponsors can use a system such as the one suggested to gauge themselves against the competition. And, ideally the efficiency of the market may be improved by encouraging consumers to use the better calculators. Moreover, after publication, the authors' rating system may cause some sponsors to improve their Web sites (as happened after their initial study of variation in Web site recommendations).

Future study is needed to determine if the quality of Web site calculators improves over time and if insurance company, consolidator or consumer Web sites generally provide a better answer to the questions: do I need life insurance? and how much do I need?

Notes

1. These terms are defined in Appendix 1.
2. Dorfman, M. S., & Adelman, S. W. (2002). An analysis of the quality of internet life insurance advice. *Risk Management and Insurance Review,* 5 (2).
3. Allstate, Fidelity Stand Out Among Web Sites: Dalbar. National Underwriter (Life & Health/Financial Services Edition), March 3, 2003, p. 17.
4. The choice of insurance type is personal. For example, some may choose to cover temporary needs with whole life because there are some permanent needs and multiple contracts would otherwise be required. In addition, people may desire the savings component as well as wanting permanent insurance even though current needs do not dictate the purchase.
5. The authors accept full responsibility for any errors of omission or commission found in this paper.
6. Social Security Survivor benefits are provided when the deceased worker is fully insured or currently insured. And then, only certain individuals are eligible to receive benefits.

Acknowledgment

Appendix 1
Company Name and URL for Life Insurance Needs Calculator

	Company URL Name	Code	Web site
1	4atermquote.com	2	http://www.4atermquote.com/calculator.htm
2	1st Quote	2	http://www.1stquote.com/needs.htm
3	Accuquote Life Insurance	2	http://www.accuquote.com/needs.cfm
4	AccuTerm.com	2	http://www.accuterm.com/calculator.html
5	AFBA	1	http://www.afba.com/Services2/life_insurance_calc.htm
6	AIG aigdirect.com	1	http://www.aigdirect.com/cgi-bin/calcs/INS1.cgi/aig
7	All Life Insurance Quote	2	http://www.all-life-insurance-quotes.com/life_insurance_calculator.html
8	Allquotesinsurance.com	2	http://www.allquotesinsurance.com/home.cfm?SC=Direct
9	Amterm.com	2	http://www.amterm.com/insurance-calculator.htm
10	Allstatetermlife.com	1	http://termlife.allstate.com/estimate.asp
11	ARVEST Insurance	2	http://arvest.rightquote.com/cgi-bin/rightquotecgi.exe/CalculatorInput
12	Atlanta LIfe Insurance Company	1	http://www.atlantalife.com/netscape_opt/csc_ins_calc.asp
13	Bouchard and Young	2	www.byfsco.com or www.ipipeline.com/quote/e-needs.htm
14	Budget Life	2	http://www.budgetlife.com/needscalc.htm
15	BYG Publishing	3	http://www.bygpub.com/finance/LifeInsCalc.htm
16	Canadian Life Insurance Quote	2	http://www.canadian-life-insurance-quotes.com/
17	Charles Schwab	2	http://www.schwab.com/SchwabNOW/navigation/mainFrameSet/0,4528,682,00.html
18	CNA Life Customer Services	1	http://www.cnalife.com/html/needscalc/life_con_needscalc_main.htm
19	CONSECO	1	http://www.conseco.com/CNC/CDA/Content/Calculators/life_insurance/
20	Countrywide Insurance Services	2	http://www.cwinsurance.com/life/calc/lifecalc.xml?FromSource=cis
21	Economy Term Life Insurance	2	http://www.economylifeinsurance.com/calc.html
22	EZ Life Insurance Quote	2	http://www.ez-life-insurance-quotes.com/life_insurance_calculator.html
23	Ferrell Insurance	2	http://www.ferrellinsurance.com/insurance/life/lifeinscalc.htm
24	Fidelity Investments	1	http://www.400.fidelity.com or http://personal400.fidelity.com/toolbox/insuranceneeds/needscalc.html
25	Fiancenter	3	http://partners.financenter.com/consumer/calculate/us-eng/lifeins01.fcs
26	Fin Aid	3	http://www.finaid.org/calculators/scrints/lifeinsuranceneeds.cgi
27	First Community Credit Union	2	http://www.firstcommunity.com/cgi-bin/calc/calc.pl?nav dest=calc:Life
28	First in Life	2	http://www.firstinlife.com/term-life-insurance-rates/calculator.htm
29	Forbes.com	3	http://www.forbes.com/tools/calculator/life insurance.jhtml
30	Free Insurance Quotes.com	2	http://www.free-insurance-quotes.com/licalc.html#Results
31	Free Life Quote Insurance	2	http://life-insurance-quotes-shopping.org/life-insurance-calculator/
32	Free Life Quote Insurance Services	2	http://www.freelifequote.com/insurecalc.html
33	Garden State Life	1	http://www.garden-state.com/cgi-bin/needs.cgi
34	General American Life	1	http://www.genam.com/genam/gateway/arcade/life.htm
35	Hutchinsoncreditunion.com	2	http://www.hutchinsoncreditunion.com/java/LifeInsurance.html
36	INS web	2	http://www.insweb.com
37	Insurance.com	2	http://www.insurance.com/insurance_options/life/life_calc_index.asp
38	Insurance & Risk Managers	2	http://www.irm-ms.com/irm.htm
39	Insurance Watch	2	http://www.insurancewatch.com.au/pi_calculator.htm

Appendix 1
Continued

	Company URL Name	Code	Web site
40	Insureshoppe.com	2	https://www.ecom-secure.com/servlet/com.insureshoppe.servlet.LifeCalculatorServlet#summary
41	Intelliquote.com	2	http://www.intelliquote.com
42	Investorguide.com	3	http://www.investorguide.com/insurancecalculators.html
43	Ipswich Bay Financial Group	2	http:www.ipswichfinancial.com/forms/calcins.htm
44	IQ Insurance Quote Services	2	http://www.iquote.com/How%20Much%20Do%20I%20Need/howmuch.html
45	IU Credit Union	2	http://www.iucu.org/Investment_Options/Ins_Calc_/body_ins_calc.html
46	JustaQuote.com	2	http://www.justaquote.com/lifecalc.htm
47	Kiplinger.com	3	http://www.calcbuilder.com/cgi-bin/calcs/INS1.cgi/Kiplinger
48	Kwot.net	2	http://www.kwot.net/needscalc.html
49	Liberty Mutual	1	http://www.libertymutual.com/servlet/LifeCalc
50	Life Insurance Discount	2	http://www.discount-life-insurance.com/calculator/index.htm
51	Life-Line	3	http://www.life-line.org/cgi-bin/life/calcs/insurance_needs.cgi
52	LifeNet	3	http://www.lifenet.com/
53	LifeShopper	2	http://www.lifeshopper.com/life-insurance-calculator.htm
54	Lincoln Direct Life Insurance	2	http://www.lincolnmutual.com/familyneed.htm
55	Minnesota Life	1	http://www.minnesotamutual.com/moneymatters/mmlifeins.html
56	MSN-MoneyCentral Insurance	3	http://moneycentral.msn.com/investor/calcs/n_life/main.asp
57	My Citi	1	http://myciti.com/cgi-bin/calcs/INS1.cgi/myciti
58	NAMS	3	http://www.nams.com/Calcs/Insurance_Needs.htm
59	Northwestern Mutual	1	http://www.northwesternmutual.com/nmcom/NM/calculatorform/toolbox-calculator-lifeinsuranceresults-calculator_lifeins
60	Pacific Life	1	http://www.pacificlife.com/financial/calculators.asp
61	Pacific Life and Annuity	1	http://www.pacificlifeandannuity.com/financial planning/calculators.asp
62	PGA Financial	2	http://www.pgafinancial.com/howmuch.html
63	Pivot	2	http://www.go2pivot.com/insurance-basics/calculators/calcLife.asp?section=term&cc=pivot
64	Principal.com	1	http://www.principal.com/cgi-bin/calcs/INS1.exe/Prin2001
65	Prudential Life Insurance	1	http://www3.prudential.com/prucalc/CalculatorServlet/LifeInsuranceQuickEstimatorCalculator
66	PublicTrust	1	http://www.publictrust.co.nz/property/termlife.asp
67	QuoteAdvantage.com	2	http://www.quoteadvantage.com/term_life_insurance/needs.asp
68	QuoteKey.com-Allen Shank Agency	2	http://www.quotekey.com
69	QuoteNavigator.com	2	http://www.quotenavigator.com/life-insurance-calculator.htm
70	Quote TermLife	2	http:www.quotetermlife.com/
71	ReliaQuote	2	http://www.reliaquote.com
72	SAFECO	1	http://www.safeco.com/safeco/planning/tools/calculate.asp or
73	Security Mutual Life Ins. Co.	1	http://www.smlny.com/calcs/life_calc.asp
74	Smartmoney.com	3	http://www.smartmoney.com/insurance/life/index.cfm?story=intro
75	State Farm	1	http://www.statefarm.com/jscript/cashneed.htm
76	Suburban Insurance	2	http://www.phillyquotes.com/life-calc.html
77	Sun Life Financial	1	http://www.sunlife-usa.com/tool/tl_9.cfm
78	S.W.I., Incorporated	2	http://www.lowcostlifeinsurance.com/calculator.htm
79	Term Life Insurance	2	http://www.term-life-insurance-brokerage-agency.com/
80	Term Life Insurance4U	2	http://www.term-life-insurance-4u.com/calculator.cfm
81	Term Life Insurance Information Center	3	http://www.life-insurance-term-insurance.com/needs-calculator.htm

Appendix 1
Continued

Company URL Name	Code	Web site
82 TermOnline.com	2	http://www.termonlline.com/term-life-insurance-calculator.htm
83 TermOnly.com	2	http://www.termonly.com/FramesLinks/InsCalcLink.htm?calculate=Calculate
84 TIAA Life Insurance	1	http://www.tiaa-cref.org/lins/howmuch.html
85 Transamerica	1	http://www.transamerica.com/Personal_Finances/Life_Insurance/Term_Life/calculator/default.asp?calc=needs
86 Western Reserve Life Assurance Co. of Ohio	1	http://www.westernreserve.com/
87 William J Afryl Agency, Inc.	2	http://www.bafryl.com/Calcs/Insurance_Needs.htm
88 Wills.com	2	http://www.wills.com/InsCalc.asp
89 Zurich Kemper	1	http://www.zurichkemper.com/INFOCONS/needs_term.asp?style=

Code	Description
1	Identified as a "life insurance company" selling its own products.
2	Identified as a "consolidator" or "agent". Typically characterized as selling varoius types of products from competing insurance companies. Credit Unions are included in this category.
3	Identified as a "consumer organization". An organizatioin not directly affiliated with one or more insurance companies and not selling insurance products. Includes web sites set up for advertising revenue.

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