

A Test of Predictors of Newspaper Subscribing

By Carl Jón Denbow

► A study by Galen Rarick in 1970 constructed three multiple variable indices to distinguish between newspaper subscribers and nonsubscribers. The best of these—which he called the Household Index—was markedly better than any single variable in predicting those likely to subscribe to a daily newspaper.¹

Rarick developed the index approach because in most large-scale studies no one variable could be identified as a good predictor of subscribership. Specifically, the problem in many such studies is that while a high percentage of subscribers (or readers) may be found in the upper level of a particular variable, the per cent of subscribers (or readers) in the lowest level is also likely to be quite high.

Two particularly interesting research efforts are those of Westley-Severin in 1964 and Penrose, *et al.* in 1974.² The 1974 study was basically a North Carolina replication of the earlier Westley-Severin statewide survey in Wisconsin that had shown the nonreader to be low in occupational status, low in educational attainment, low in income and low in subjectively determined social class. The nonreader also tended to be in his 20s or in his 70s or older and to have lived only a few years at his present address.

The 1974 study was in general agreement with the findings of the Wisconsin study, but two variables—respondent education and head of household income—showed considerably better predictive ability in the North Carolina replication. Only 39% of the respondents with less than an eighth grade education were regular newspaper readers, compared with 94% of those with 16 years or more education. Similarly, respondents in households whose head made under \$3,000 a year were readers 49% of the time and those whose head made \$10,000

or more were readers 89% of the time.

This present research was designed as a replication of Rarick's innovative approach. It was hoped the indices that he developed would prove as useful in Murray, Ky., and environs as they had in Richland County, Ohio.³ An implicit assumption was that no single variable would prove to be a strong predictor of subscribing behavior.⁴

This replication tested two of the three indices developed in the original study. In answering questions needed to construct the Chief Breadwinner and Household indices, a respondent could produce a score ranging from 0 to 3, depending on the number of relevant index-attributes attributable to the chief breadwinner or household.

Method and Sample

In the fall of 1974, a graduate research methodology class at Murray State University⁵ drew a random sample of 549 from the current Murray, Kentucky, telephone directory.⁶ Only numbers in the exchange that included all of the city of Murray and nearby rural area, but excluded all university numbers were drawn.

Of those drawn into the sample, 355 (65%) were eventually interviewed by phone. Telephone penetration rate in this exchange was just under 85%.

Chief Breadwinner Index. An individual score on the Chief Breadwinner Index was determined by adding scores (1 or 0) on three variables: age, occupation and education. If a chief breadwinner was between 35 and 64 years old a score of 1 was given; if he was in any other age bracket a 0 was recorded. Similarly a chief breadwinner was given a 1 for "high" occupational status and a 0 for "low" occupational status. A high occupational status was one which fell into any of the following categories: craftsman or skilled worker, clerical or sales

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TABLE 1

Chief Breadwinner Index Scores Related to Rate of Subscribing to
Murray *Ledger and Times* and Compared to Rarick's Data for *Mansfield News Journal*

Index Score	Denbow		Rarick	
	N	% Subscribing ^c	N	% Subscribing ^d
0	32	46	37	70
1	88	55	75	74
2	124	79	108	81
3	110	90	85	93
	N = 354 ^a		N = 305 ^b	

^aOne respondent refused to give chief breadwinner's occupation.

^bInformation for at least one item was not obtained from 19 respondents.

^cChi Square = 45.1, df = 3, $p < .001$ (C = .34)

^dChi Square = 12.0, df = 3, $p < .01$ (C = .21)*

*The chi squares for Rarick's data are based on weighted figures. His sampling design purposely over-represented non-subscribers 2 to 1. In calculating the chi squares, then, each "Don't Subscribe" cell frequency was divided by two. This procedure, which resulted in a "deflated n," produced a conservative chi square statistic; and, therefore, the resulting contingency coefficient probably under-estimates the correlation between index score and subscribing behavior. [Rarick, although basing his discussion and conclusions on weighted percentages, reported chi squares based on unweighted data in his article: Chief Breadwinner, 20.9 (df = 3, $p < .001$); and Household Index, 38.9 (df = 3, $p < .001$). Contingency coefficients are .25 and .34, respectively.]

worker, professional person, or proprietor or manager (including farm owners and managers). All other occupational categories were assumed to have "low status." Educational attainment for the chief breadwinner of a high school diploma or above was scored a 1. Otherwise a 0 was recorded.

A score for a chief breadwinner, accordingly, could be 0, 1, 2 or 3. For instance, a 0 would mean the chief breadwinner was not between the ages of 34 and 65, was of "low" occupational status and had *not* graduated from high school. A 3, on the other hand, would mean that a chief breadwinner was within the 34-65 age bracket, was of "high" occupational status and had graduated from high school.

This index, *per se*, held up well in the replication as can be seen in Table 1. In fact the contingency coefficient (C) indicates a somewhat better correlation between index score and subscribing

behavior in this second study. However, even though the difference between percentage of subscribers in the extreme categories was 44, compared to 23 in the original study, the index in this replication still showed nearly half of those at the lowest level to be subscribers.

Surprisingly, though, individual items in this index made the division between groups sharper than did the total index itself. For instance, while only 25% of those households whose chief breadwinner was in the 18-24 age bracket were subscribers, 86% of the households whose chief breadwinner was in the 35-48 age group subscribed. The difference between these categories of 61, in terms of percent subscribing, is greater than the difference found in the replicated index as a whole.

The same was true to even a greater extent when looking at occupational status. Households in which the chief breadwinner was a student subscribed 5% of

TABLE 2

Household Index Scores Related to Rate of Subscribing to Murray *Ledger and Times* and Compared to Rarick's Data for Mansfield *News Journal*

Index Score	Denbow		Rarick	
	N	% Subscribing ^c	N	% Subscribing ^d
0	6	0	9	20
1	37	29	27	54
2	74	63	76	77
3	227	85	180	89
	N = 344 ^a		N = 292 ^b	

^aEleven respondents refused to answer question on household income.

^bInformation for at least one item was not obtained from 32 respondents.

^cChi Square = 73.1, df = 3, $p < .001$ (C = .42)

^dChi Square = 29.2, df = 3, $p < .001$ (C = .32)

the time, while households where the chief breadwinner was a professional subscribed at a rate of 87%. However, no educational category showed a subscribing rate of less than 57%.⁷

Household Index. The Household Index asked questions about the household as a whole rather than individual members. A household was given a 1 for each of the following: having a total income of greater than \$5,000,⁸ living in the county three years or more and owning the place of residence. A 0 was given on each criterion *not* met. Scores, again, ranged from 0 to 3.

Rarick had found this index to be the most promising, and the results here support the generalizability of the index. While the original study had found a difference of 69 between percentage subscribing in the lowest, as compared to the highest category, the present research obtained a difference of 85. Moreover, in the replicated index the percentage of subscribers did not rise as quickly when the index score changed from 0 to 1 and from 1 to 2. While in both studies, then, the index readily discriminated subscribing from nonsubscribing households, Table 2 clearly shows that the magnitude of the correlation between subscribing behavior and index score, as measured by the con-

tingency coefficient (C), is greater in the replication.

It is of interest that bivariate correlation analysis of the 14 useful variables produced in this present survey reveal the three highest correlations with subscribing to the Murray *Ledger and Times* are the very factors which make up the Household Index—home ownership, household income and length of residence in the county.⁹

Although these individual items discriminated better than expected between subscribers and nonsubscribers, the index as a whole was a better predictor of subscribing behavior than was any item by itself. The best single item was the income question in which 28% of those with an income under \$3,000 subscribed and 82% of those with an income of more than \$5,000 subscribed. Similarly, renters subscribed 37% of the time and owners 81%. Ignoring the "less than one year" category which included only two respondents, length of residency in county produced a range from 41% to 80% subscribers.¹⁰

Conclusions

Although the Chief Breadwinner Index correlated with subscribing behavior better here than in the original study, it still had a relatively large percentage

of subscribers at the low levels compared to two of three individual items which made up the index. The individual items appear to be better predictors of subscribing behavior than the composite index as a whole.

Since the magnitude of the correlation indicated by the contingency coefficient was nearly the same for Denbow's Chief Breadwinner Index and Rarick's Household Index, it could be argued that the Chief Breadwinner Index in certain circumstances might be as effective an instrument for predicting subscribing behavior as the Household Index. It should be noted, however, that Denbow's Chief Breadwinner Index, in addition to the larger percentage of subscribers at the lowest index level, had a difference between extreme categories 25 less than for Rarick's Household Index.

Be that as it may, in each study the Household Index was markedly better than the other index or indices tested.¹¹ That is, the significant correlation between this index and local daily newspaper subscribing was of greater magnitude than the corresponding significant correlation with the Chief Breadwinner Index. Further, the difference between extreme categories was greater for the Household Index in each instance. These results add concurrent validity to the Household Index as a predictor of subscribing behavior, at least when relatively small cities and surrounding rural areas are involved. Further tests of this index ought to be conducted in more urban environments—preferably distributed geographically both North and South. There is no obvious reason why the index would be significantly less effective in a large city with a large circulation daily newspaper, but only further studies will tell us for sure.

¹ Galen R. Rarick, "Differences Between Daily Newspaper Subscribers and Nonsubscribers," *JOURNALISM QUARTERLY*, 50:265-70 (Summer 1973).

² See Bruce Westley and Werner J. Severin, "A Profile of the Daily Newspaper Non-Reader," *JOURNALISM QUARTERLY*, 41:45-50, 156 (Winter 1964); and Jeanne Penrose, David H. Weaver, Richard Cole and Donald Lewis Shaw, "The Newspaper Nonreader 10 Years Later: A Partial Replication of Westley-Severin," *JOURNALISM QUARTERLY*, 51:631-8 (Winter 1974).

³ Rarick's sample was drawn from the whole of Richland County, Ohio, including its county seat, Mansfield; whereas, this study involved the Calloway County seat of Murray and nearby rural areas only.

⁴ Subscribing behavior is here used to refer to the act of subscribing to the Murray *Ledger and Times*. Of the 96 respondents who did not subscribe to the local daily paper, 80% also did not subscribe to any other daily paper.

⁵ The author thanks Murray graduate students Berry Craig, E.J. Logan, Stanley McKinney, Jeffrey Mardeuse and Chia Chi Tsang for their work on this research.

⁶ Although the phone company had an updated directory this researcher was refused access to it on the grounds that the utility had experienced trouble with people selling listings to telephone sales organizations.

⁷ Breakdown of all Chief Breadwinner Index categories, excluding those with an n of five or less, is as follows: age between 18-24 (25%), 24-34 (68%), 35-49 (86%), 65 or older (71%); retired (69%), laborer or service worker (68%), craftsman (81%), clerical or sales worker (71%), professional (87%), student (5%); formal education 8 years or less (57%), 9-11 years (70%), high school graduate (81%), some college or technical school (61%), technical school graduate (75%), college graduate (87%).

⁸ Rarick's wording on this item was \$5,000 or more.

⁹ The correlations are 1) home ownership, .366; 2) household income, .389; and 3) length of residency in county, .314. All are significant above the .01 level.

¹⁰ Breakdown of all Household Index categories, excluding those with n's of five or less, is as follows: rent (37%), own (81%); lived in county one or two years (41%), three or four years (41%), five or more years (80%); household income less than \$3,000 (28%), between \$3,000 and \$5,000 (61%), more than \$5,000 (82%).

¹¹ Rarick also developed and tested a Respondent Activity Index which was not replicated in this study due to a clerical error in questionnaire construction. A contingency coefficient calculated for the weighted data from the original study produced a correlation of .14 with subscribing behavior ($df = 2, p < .025$).