

# Circulation Increases Follow Investments in Newsrooms

by Charles St. Cyr, Stephen Lacy and Susana Guzman-Ortega

*This analysis of data shows a positive relationship between newsroom investment in 1984 and the percentage change in circulation five years later at daily newspapers with more than 25,000 circulation.*

During the past two decades, journalists, scholars and critics have expressed concern about the impact of public ownership on the journalistic and business performance of daily newspapers. The concern stems from high profit demands that reduce newsroom budgets at some public corporations.<sup>1</sup> Observers fear that lower newsroom budgets will result in fewer journalists in newsrooms and, therefore, fewer staff-produced articles and / or less time to spend on articles. Research generally has supported that publicly owned newspaper companies with high profit levels reduce newsroom budgets.<sup>2</sup> In addition, other research has found a positive correlation between increased newsroom investment and short-run circulation gains.<sup>3</sup> However, the question of how newsroom financial investment relates to long-run circulation changes has received little attention in academic research.

This study uses a secondary analysis of data to examine whether newsroom investment was associated with circulation change five and 10 years after the initial measurement of investment. More specifically, the study uses the equivalent of a newsroom investment index derived from 1984 content to test its association with circulation changes in 41 daily newspapers with more than 25,000 circulation. The results of this study are important because they may shed light on the long-run implications of short-term budget cuts by daily newspaper owners and managers. John Morton called this trade-off "eating the seed corn."<sup>4</sup>

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## Literature Review

A model of news demand published in 1989 predicts a positive relationship between newspaper quality and circulation performance.<sup>5</sup> The term quality is used abstractly by economists to indicate the level of utility a product provides to a consumer. Applying the term quality to newspapers introduces debates about the meaning of the term. Bogart has argued that quality is impossible to measure, but he adds that investment in the newsroom will yield a good return if spent properly, which also is difficult to define.<sup>6</sup>

Research indicates that editors' opinions as to what constitutes quality journalism are fairly consistent within circulation groupings and show a correlation with readers' opinions.<sup>7</sup> One method of quality measurement is called the financial commitment approach, which assumes that financial commitment to the newsroom is a surrogate measure of quality.<sup>8</sup> Such a commitment results in larger newsholes, more and/or better-paid journalists, increased in-depth reporting, more wire services and more attention to individual articles. Although newsroom investment is not guaranteed to result in higher quality, adequate investment is a necessary, if not sufficient, requirement for a newspaper to serve the needs of a variety of readers in the long run. Without an adequate newshole and staff, a newspaper cannot publish the range of news and information needed to serve its readers.

Several studies have found a relationship between newsroom investment and circulation levels, although the term newsroom investment has not always been used to label the independent variable. In an early study, Stone, Stone and Trotter asked editors, managers of statewide journalism associations and directors of journalism schools to identify quality newspapers. They found that newspapers in their states with higher quality had higher circulation and penetration.<sup>9</sup>

Using Bogart's survey of editors,<sup>10</sup> Lacy and Fico developed a quality index with eight content measures.<sup>11</sup> Most of these measures are related to the level of newsroom investment. The study was based on a content analysis of 114 randomly selected U.S. dailies from November 1984 and reported that about 22 percent of the variation in circulation in 1985 was related to the quality in 1984.

A case study of how the Gannett corporation changed content at the *Arkansas Gazette* after buying it in 1986 found that the newspaper's average daily newshole dropped from 1,048 column inches in 1985 to 880 in 1989 in order to maintain profits in the face of increasing newsprint prices.<sup>12</sup> Gannett sold the *Gazette* to its competition after a decline in market penetration and circulation. In a related study, Pardue argued that investing in the newsroom is an important reason for the *Arkansas Democrat-Gazette* having one of the highest penetration rates in the United States.<sup>13</sup>

Blankenburg used Inland Press Association data and found a high correlation between various measures of newsroom investment and circulation.<sup>14</sup>

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However, he said the causal direction was not clear. It could be that newsroom investment results in higher circulation or vice versa.

A recent study used 27 daily newspapers with circulation of more than 25,000 that were identified by the staff of *Editor & Publisher*, the newspaper trade magazine, as investing in quality.<sup>15</sup> The quality newspapers had high newsroom investments, and they were more likely to have increases in circulation and a higher mean circulation the year after selection than did 98 dailies in a representative sample of all dailies.

Only two published studies have examined the long-run impact of quality and newsroom investment on circulation. One study examined changes at 64 Thomson dailies and 128 control papers from between 1980 and 1990 because Thomson was known for low newsroom investment that led to low-quality newspapers.<sup>16</sup> The average home county penetration of Thomson newspapers went from 65 percent of households in 1980 to 53 percent in 1990. The control group average penetration only dropped from 58 percent of county households to 57 percent.

Hawley studied 30 former long-term readers of a 58,000-circulation daily in Georgia over two years and found that most people dropped the newspaper because it was too thin and had little coverage they wanted, both related to newsroom investment.<sup>17</sup> Those who re-subscribed tended to do so for local coverage, which also requires newsroom investment.

One study did not find a relationship between newsroom budgets and circulation. The study assumed percentage of expenditures on the newsroom, advertising revenues, and profit estimates were estimates of newsroom budgets. However, the profit measure was a four-point ordinal scale, and the advertising revenues and percentage of expenses spent on a newsroom are not necessarily effective measures of newsroom financial commitment.<sup>18</sup>

## Hypotheses

Theory and research tend to support a positive relationship between investment in the newsroom and short-run circulation increases. However, the connection between newsroom investment and long-run circulation remains relatively untested. This research aims to explore this long-run relationship by testing the following hypotheses:

**H1:**

The percentage change in circulation between 1985 and 1990 will be positively correlated with newsroom investment in 1984.

**H2:**

The percentage change in circulation between 1985 and 1995 will be positively correlated with newsroom investment in 1984.

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The logic behind the hypotheses is that initial investment in a newsroom attracts readers who develop the reading habit, or initial investment may be correlated with continuing newsroom investment that attracts readers. Either or both of these processes would yield positive correlations between investment and circulation five and 10 years after. The data in this study cannot explain why the correlations exist, but such associations would call for additional research into the relationship. The absence of the correlation would suggest that the relationship does not exist.

## **Method**

The difficulty in studying the impact of newsroom investment on circulation across time stems from a lack of data. Although circulation data are readily available, measures of individual newspaper's investments that allow collection of market data are not. This study, which serves as a quasi-experiment, incorporates data published in 1990 by Lacy and Fico that included a quality index. Their eight-measure index was based on a survey of 746 editors conducted by Bogart in 1977.<sup>19</sup> At least six of the eight required increased newsroom investment.<sup>20</sup> The eight measures were a high ratio of staff-written copy to wire and syndicated copy, total amount of non-advertising space, a high ratio of non-advertising to advertising content in the news sections, a high ratio of in-depth copy to hard news, number of wire services carried, a high ratio of illustration to text, length of average news story, and the square inches of total staff copy divided by the number of byline writers. These measures were standardized to put them on the same measurement scale and summed.<sup>21</sup>

The relationship between newsroom investment and the index is fairly obvious for most of the measures because they require either a larger newshole or a larger staff. The connection between newsroom investment and two measures—high ratio of illustration to text and length of average news story—is not as clear. For the former to be connected with increased investment, the average cost of space devoted to illustrations would have to exceed the average cost of space devoted to text. No research was found to support this comparison one way or the other.<sup>22</sup> With the average story length measure, it would require increased investment if the stories were staff-generated but not necessarily more investment if they were wire service copy. However, in the absence of evidence one way or the other, the uncertainty of the relationship between these two measures and newsroom investment need not be a serious concern for two reasons. First, the potential for either a positive or negative relationship between newsroom investment and these two measures suggests the overall impact in a sample might be neutral. Second, these are only two of eight measures, and a strong relationship with investment in the other measures would counter any measurement error in these two measures.

The study was limited to daily newspapers with more than 25,000 circulation because several studies have found resources are correlated with news-

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room investment at this circulation level.<sup>23</sup> As a result, this study used 41 of the 114 dailies Lacy and Fico studied in 1984.<sup>24</sup>

In addition to the index, data were collected for number of households in the county in 1985, and the average weekday circulation from 1985, 1990 and 1995.<sup>25</sup> All the circulation figures came from Audit Bureau of Circulations September reports. The actual number of cases changed across time because some of the newspapers went out of business. The dependent variables were the percentage change in average daily circulation for a given period rather than the absolute change because larger markets would have greater circulation variations than smaller markets.

Hierarchical multiple regression<sup>26</sup> was used with the investment index and natural log of the number of county households in 1985 as the independent variables.<sup>27</sup> Only two independent variables were used because of concern about having too low a variable-to-case ratio and because a correlation matrix of other variables did not show other variables as being correlated with percentage of circulation change.<sup>28</sup> The data were adjusted to fit the assumptions of regression.<sup>29</sup>

The hypotheses in this study will be supported if the regression equation and the regression coefficient for the quality index exceed the  $p < .01$  level of statistical significance. This level was selected instead of the  $p < .05$  level to help compensate for the unknown bias that was introduced through the process of moving from the original 80 dailies to the subset of 41 used in this study.

*Investment in the newsroom budget is no guarantee of circulation change. Editors and reporters must use the increased investment in ways that improve the paper from the perspective of readers if circulation is to increase.*

## Results

The mean 1985 circulation for the dailies in the study equaled 103,378, with a standard error of 13,903 and a range from 25,568 to 351,392. The mean number of households in the county equaled 231,533, with a standard error of 65,619 and a range from 13,100 to 288,420. The mean percentage change in circulation from 1985 to 1990 was plus 3 percent with a range of minus 32 percent to plus 35 percent. The standard error equaled 11.5 percent. For the percentage change in

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circulation from 1985 to 1995, the mean equaled 2.7 percent with a range of minus 31 percent to plus 44 percent. The standard error equaled 18.6 percent. The mean for the investment index was 1.34 with a range of minus 5.58 to plus 8.97, and a standard error of 3.22.

The first hypothesis states a positive correlation exists between newsroom investment in 1984 and the percentage change in circulation between 1985 and 1990. The hypothesis is supported by the data in Table 1. The probability level of the equation equals .007, and the probability level of the investment index equals .002. Both exceed the cut-off value of  $p < .01$ .

The strength of association is represented by the regression coefficient, the beta weight, and the change in R-square. The regression coefficient of .022 shows that for every one-point increase in the investment index, circulation increased by 2.2 percent. The corresponding beta weight equaled .614 and the change in R-square from entering the investment index was .233, which indicates that 23.3 percent of the variance in the percentage of circulation change over five years was associated with the investment index.<sup>30</sup>

**Table 1**  
**Percentage Changes in Circulation Regressed on the 1984 Investment Index**  
**For Newspapers With More Than 25,000 Circulation**

Independent Variables		1984 Investment Index		Adjusted R-square
Log of County Households	Change R-square	Coeff.	Beta	Change R-square
Coef.	Beta			
-.058	-.397	.022	.614	.233*
(.026)		(.006)		
(p = .007 for equation)				
Dependent Variables				
% Cir. 1985-1990		.022	.377	.095
		(.012)		
(p = .185 for equation)				

Note: The numbers in parentheses under the regression coefficients are the standard errors of the coefficients.  
 \* Indicates the relationship is statistically significant at the  $p < .05$  level.  
 \*\* Indicates the relationship is statistically significant at the  $p < .01$  level.

One way to evaluate this relationship is to compare it to the Lacy and Fico results when they correlated the index with circulation the next year.<sup>31</sup> Although the two figures are not strictly comparable, Lacy and Fico used 114 dailies and reported that 22 percent of variance in 1985 circulation was accounted for by the investment index. The magnitude of the relationship found in this study five years later is consistent with that result.

For these 41 dailies, a positive relationship existed between the newsroom investment in 1984 and the circulation change between 1985 and 1990. A 99 percent probability exists that the relationship was not the result of sampling error. The regression equation estimates that each one point increase in the investment index, which ran from minus 5.58 to plus 8.97, resulted in a 2.2 percent increase in circulation.

The second hypothesis stated that the percentage change in circulation between 1985 and 1995 would be positively correlated with newsroom investment in 1984. This hypothesis was not supported. Although the association was in the hypothesized direction and the regression coefficient for this change equaled the coefficient found in the equation for the change from 1985 to 1990, the probability level for the equation and the investment index did not exceed the  $p < .01$  cut-off point. The total adjusted R-square for the equation only equaled .041.

The failure of the equation to support the hypothesis probably reflects two differences between the 1985-1990 and the 1985-1995 equations. The latter equation includes fewer cases because four newspapers in the sample closed between 1990 and 1995. A smaller sample requires a larger association to reach statistical significance. Second, the variability of the sample increased, which reflects a smaller sample but also the variations that occur over time. Despite the investment index having the same regression coefficient for both equations, the standard error of the coefficient increased from .006 in the 1985-1990 equation to .012 in the 1985-1995 equation. This helps to explain why the beta weight was smaller in the latter equation and why the probability level for the investment index only reached .076.

The relationship between newsroom investment in 1984 and the circulation change between 1985 and 1995 was less clear-cut than the relationship with circulation change over a five-year period (1985-1990). The regression equation showed a positive relationship that was almost as strong as the one for the first hypothesis, but the relationship might have been a result of chance in the sampling process.

## Discussion

This secondary analysis of data shows a positive association between newsroom investment in 1984 by daily newspapers with more than 25,000 circulation and the percentage change in circulation five years later. The regression coefficient of .022 indicates that a newsroom investment or disinvest-

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ment that led to a change in one point on the index would have resulted in a change of 2.2 percent in circulation five years later.

The relative strength of the relationship can be demonstrated by applying this coefficient to the dailies in the sample. The average investment index was 1.34, and the lowest index score in the sample was -5.58. This newspaper was 6.92 investment points below the average, which indicates that a circulation decline of 15.22 percent over five years was associated with the lowest level of newsroom investment in 1984. At the other end, the largest index score was 8.97, which was 7.63 larger than the average. This indicates that a 16.79 percent increase in circulation was associated with the highest level of newsroom investment in 1984.

However, the relationship between newsroom investment and circulation change found here cannot be interpreted to be causal in a strict sense. In order to establish causality, three conditions must be met:

- The independent and dependent variables must be correlated.
- The changes in the independent variable must precede changes in the dependent variable (time-order).
- The impact of other independent variables on the dependent variable must be eliminated.<sup>32</sup>

This study established a correlation between an independent variable (newsroom investment) and a dependent variable (change in circulation) with the appropriate time order. It also controlled for a second independent variable (number of households in the county) that could have affected circulation change. However, the data could not reveal that the newsroom investment in 1984 directly caused the circulation increase five years later.

This leads to speculation about the mechanism underlying the correlation. Over a five-year period, three general types of newsroom investment could follow an increase investment in a given year.

- First, the initial investment would be followed by a continuing investment.
- Second, the initial investment could be followed by no, little or erratic newsroom investment.
- Third, the initial investment could be followed by disinvestments (cuts) in the newsroom budget.

These data and existing research suggest that the first would lead to increased circulation, the third would lead to decreased circulation, but the outcome of the second remains unclear and needs additional research.

These results also indicate a need to study the relationship between newsroom investment and readers' perceptions of a newspaper's value. Researchers have found that readers and editors share some values about what constitutes quality, but they do not agree on all such values.<sup>33</sup> Other research has concluded that traditional values remain important even at market-oriented newspapers.<sup>34</sup> Future research should expand on the limited studies about the long-run impact of newsroom investment on circulation and the corresponding relationship between circulation and financial performance.<sup>35</sup>

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The data used here can reveal the degree of relationship, but they cannot translate the impact of newsroom investment on the financial and community performance of the dailies. For instance, how does a 15 percent decline in circulation affect the long-run financial investment and profit of a newspaper? It will certainly reduce circulation revenue and make the newspaper less attractive to advertisers if the daily faces competition from other dailies, weeklies, radio, television and the Internet. In the opposite direction, gaining 15 percent might make a newspaper very attractive to local advertisers. Additional data need to be examined to identify the concrete impact of circulation changes on financial performance and public service.

Although the relationship was not statistically significant 10 years after the index measurement, it was consistent with the hypothesis, and the failure to reach significance may be explained by the small sample. It should be expected that the strength of the relations would decline across 10 years because ownership and market strategies change during longer time periods. However, with a small sample, it is difficult to tell if such variations account for the failure to achieve statistical significance. A much larger sample would test how long investments in newsrooms will continue to contribute to circulation growth.

As mentioned in the literature review, investment in the newsroom budget is no guarantee of circulation change. Editors and reporters must use the increased investment in ways that improve the paper from the perspective of readers if circulation is to increase. And a continuing question related to newsroom investment and circulation change remains: Must newspapers pander to readers with that investment, or can investment in journalistic standards increase circulation?

#### Notes

1. Gilbert Cranberg, Randall Bezanson, and John Soloski, *Taking Stock: Journalism and the Publicly Traded Newspaper* (Ames, IA: Iowa State University Press, 2001); William B. Blankenburg and Gary W. Ozanich, "The Effects of Public Ownership on the Financial Performance of Newspaper Corporations," *Journalism Quarterly* 70 (spring 1993): 68-75.

2. The following studies indicate a negative relationship between degree of public ownership and profit margin, and profit margin and staff size: Stephen Lacy and Alan Blanchard, "The Impact of Public Ownership, Profits, and Competition on the Number of Newsroom Employees and Starting Salaries in Mid-sized Daily Newspapers," *Journalism & Mass Communication Quarterly* 80 (winter 2003): 949-968; Stephen Lacy, Mary Alice Shaver, and Charles St. Cyr, "The Effects of Public Ownership and Newspaper Competition on the Financial Performance of Newspaper Corporations: A Replication and Extension," *Journalism & Mass Communication Quarterly* 73 (summer 1996): 332-341; Cranberg, Bezanson, and Soloski, *Taking Stock*; Blankenburg and Ozanich, "The Effects of Public Ownership." One recent study found private and publicly owned newspapers had equivalent staffing levels. See Rick Edmonds, "News Staffing, News Budgets, and News Capacity," *Newspaper Research Journal* 25 (winter 2004): 98-109. However, the analysis of staffing did not control for other variables such as profit level, circulation and competition.

3. Stephen Lacy and Hugh J. Martin, "Competition, Circulation, and Advertising," *Newspaper Research Journal* 25 (winter 2004): 18-39.

4. John Morton, "When Newspapers Eat Their Seed Corn," *American Journalism Review*, November 1995, <<http://www.ajr.org/Article.asp?id=76>> .

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5. Stephen Lacy, "A Model of Demand for News: Impact of Competition on Newspaper Content," *Journalism Quarterly* 66 (spring 1989): 40-48, 128.

6. Leo Bogart, "Reflections on Content Quality in Newspapers," *Newspaper Research Journal* 25 (winter 2004): 54-65.

7. George A. Gladney, "Newspaper Excellence: How Editors of Small & Large Papers Judge Quality," *Newspaper Research Journal* 11 (spring 1990): 60-72; and George A. Gladney, "How Editors and Readers Rank and Rate the Importance of Eighteen Traditional Standards of Newspaper Excellence," *Journalism and Mass Communication Quarterly* 73 (summer 1996): 319-331.

8. Barry R. Litman and Janet Bridges, "An Economic Analysis of American Newspapers," *Newspaper Research Journal* 7 (summer 1986): 9-26.

9. Gerald C. Stone, Donna Stone, and Edgar P. Trotter, "Newspaper Quality's Relation to Circulation," *Newspaper Research Journal* 2 (spring 1981): 16-24.

10. Leo Bogart, *Press and Public*, 2nd ed. (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1989).

11. Stephen Lacy and Frederick Fico, "Newspaper Content Quality and Circulation," *Newspaper Research Journal* 12 (spring 1991): 46-57.

12. Bruce L. Plopper, "Gannett and the Gazette," *Newspaper Research Journal* 12 (spring 1991): 58-71.

13. Mary Jane Pardue, "Quality Key to Highest City Zone Penetration in U.S.," *Newspaper Research Journal* 25 (fall 2004): 13-25.

14. William B. Blankenburg, "Newspaper Scale and Newspaper Expenditures," *Newspaper Research Journal* 10 (winter 1989): 97-103.

15. Sooyoung Cho, Esther Thorson, and Stephen Lacy, "Increased Circulation Follows Investments in Newsroom," *Newspaper Research Journal* 25 (fall 2004): 26-54.

16. Stephen Lacy, and Hugh J. Martin, "Profits Up, Circulation Down for Thomson Papers in 80s," *Newspaper Research Journal* 19 (summer 1998), 63-76.

17. Melinda D. Hawley, "Dropping the Paper: Losing Newspaper Loyalists at the Local Level" (James M. Cox Institute for Newspaper Management Studies, University of Georgia, Athens, GA, 1992), 1.

18. For example, newspapers that cut newsroom budgets to achieve higher profit margins are likely to cut budgets throughout the newspaper, which would keep percentages constant while lowering all budgets. Revenue does not necessarily translate into an increased budget. It could go to profit. The use of four-point scales tends to reduce the amount of variance assumed in interval data and results in much reduced correlations.

19. Bogart, *Press and the Public*.

20. This was called an index rather than a scale because some of the measures were negatively correlated.

21. The process of standardizing places the values for the cases on a normal curve using the mean and standard deviation for the data set. This transforms each variable to the same scale and allows for variables with different original scales to be added into an index.

22. The investment for illustration, which includes all visuals, would depend on the nature of the visual. A simple wire photograph would cost less than text, but an information graphic executed by a skilled illustrator could cost more than the same space given to wire service text.

23. Bogart, "Reflections on Content Quality;" Gladney, "Newspaper Excellence;" and Becker, Beam and Russial, "Correlates of Daily Newspaper." This assumption was tested for these data, and the relationship reported for the dailies with more than 25,000 circulation was not found for those dailies with less than 25,000 circulation.

24. Defining small dailies as those with circulation less than 25,000 is consistent with Bogart's definition in the original survey (See Bogart, *Press and Public*.) and is one of the defining points of *Editor & Publisher International Year Book* in reporting numbers of dailies by circulation size.

25. These data came from various Circulation books, published by Standard Rate and Circulation Data (Willemette, IL, 1986, 1991, and 1996) and from various *Editor & Publisher Year Book*

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issues (New York, 1986, 1991, and 1996). Newspaper data from other books are based on the Audit Bureau of Circulation data, and the household data comes from U.S. Census Bureau data. The first year of circulation figures was 1985 because the randomly constructed week that was content-analyzed came from November 1984, which was after the September 1984 audit of circulation.

26. Hierarchical regression is a statistical procedure that can determine the amount of variation in a dependent variable (change in circulation) that is associated with changes in an independent variable (newsroom investment) after controlling for other independent variables (households in the county). It provides a method, using the regression coefficients, for estimating the change in the dependent variable that would result from the change in one unit of the independent variable. With multiple regression, some variance in the dependent variable (change in circulation) is shared between two or more independent variables (newsroom investment and number of county households). Hierarchical regression places this shared variance in the first relationship (association of circulation change with variation in county households), which makes the test of the hypothesis more conservative.

27. The number of households is consistently used in economic analysis because the size of a market is a measure of the resources available as well as a limit on circulation potential. The natural log of the households in the county was used instead of the absolute number of households because the distribution of county households was extremely skewed. Regression analysis assumes that the data do not have extreme skewness. Using a natural logarithmic reduces the skewness and maximizes the linear relationship between the independent and dependent variables. As such, it makes supporting the hypothesis more difficult.

28. These variables included level of competition, defined as the penetration of other dailies in the county, and the monthly subscription rates.

29. Two of the dailies were extreme outliers with very large daily circulation and were dropped from the analysis. This dropped the cases used from 43 to 41.

30. The natural log of the county households contributed less than .000 to the R-square of the equation. However, the change in R-square is inflated by the small sample. The adjusted change in R-square equals .192.

31. Lacy and Fico, "Newspaper Content Quality."

32. Daniel Riffe, Stephen Lacy and Frederick G. Fico, *Analyzing Media Messages: Using Quantitative Content Analysis in Research* (Mahwah, N.J.: Lawrence Erlbaum & Associates, 1998) 37-41.

33. Gladney, "How Editors and Readers."

34. Randal A. Beam, "What It Means to be a Market-Oriented Newspaper," *Newspaper Research Journal* 19 (summer 1998): 2-20.

35. While the results of this study call for additional research, such studies need to take into consideration the limits of this study. This would involve controlling for additional variables, among which should be specific content categories and how they relate to changes in circulation and penetration. Measuring newsroom investments at several newspapers and across several years would allow for a time-series analysis of changes. Additional research could concentrate on developing a consistent measure of newsroom investments based on content. This would make unobtrusive monitoring of newsroom investment much easier.

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