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ABSTRACT

A study was conducted to discover why investigation of one of the most important trends in the newspaper industry during the past century, the decline of newspaper competition within a city, has produced conflicting results. The study reviewed existing literature to learn why this is so, and also to determine if direct daily newspaper competition affects content. A randomly stratified (for ownership and competition) sample of 114 newspapers was chosen during November 1984. Only news and editorial sections were analyzed. The initial hypothesis, that newspaper content is determined by more than one allocation process, was tested with factor analysis. Twenty-one content measures were factor analyzed to see if they grouped in the news space allocation, editorial space allocation, and budget allocation processes. The second hypothesis, that daily newspaper content is affected by direct newspaper competition, was tested using regression analysis for each of the 21 content variables. The final hypothesis concerned whether intensity of competition provides a more accurate measure of the impact of competition on content than does a categorical measure. Results indicate that competition does have an impact on daily newspaper content, whether for better or worse is unclear. (Statistical data are appended.) (NKA)

THE EFFECTS OF INTRA-CITY DAILY NEWSPAPER COMPETITION ON NEWS AND EDITORIAL CONTENT

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The decline of newspaper competition within a city has been one of the most important trends in the newspaper industry during the past 100 years. Of the cities with daily newspapers in 1880, almost 68 percent had two or more such papers. By 1968, the figure had dropped to 3 percent.[1] In 1984, 30 cities had two or more separately owned and operated newspapers, while another 22 had joint operating agreements.[2] Despite the decline of cities with direct competition, such cities still account for 29.5 percent of the daily circulation in the United States.[3]

Since World War II, scholars have tried to determine whether this trend has had an impact on the content of daily newspapers. The answer to this question is important because it would help determine if the public is adversely affected by the trend toward monopoly newspaper markets. However, research results conflict. The purpose of this study is to review existing literature in order to suggest why research results conflict and to determine if direct daily newspaper competition does affect content.

Theoretical Background

The type of economic theory applicable to the behavior of firms in a market depends on the nature of the goods sold in a market, the number of firms in the market, and the dependent variable being studied. Newspapers are heterogeneous products. They differ not only from firm to firm, but from day to day within the firm. Competition between newspapers is more likely to involve variations in product than in price because subscription prices for newspapers remain relatively stable.[4]

Chamberlin's theory of monopolistic competition[5] best fits this product competition between newspapers in the same city. With monopolistic competition, firms produce differentiated products and have advertising as a selling cost. While differentiated products have no perfect substitutes, some products are similar enough to be substituted by consumers. For example, news magazines and newspapers are different products, but some people substitute news magazines for newspapers to get certain types of news.

The application of monopolistic competition theory to newspapers is not original. Chamberlin mentioned newspapers briefly.[6] Corden said the quality, which is a function of content and size of newspaper, determined the circulation.[7] This is because management varies quality considerably, but rarely varies price. Reddaway said monopolistic newspaper competition in England was such that newspapers need not become monopolies, but would rather differentiate themselves into "quality" and "popular" newspapers.[8] Rosse argued that newspapers are more accurately described as "isolated" rather than monopolies because of inter-media and inter-city competition.[9] He presented empirical evidence that this isolated nature is due to the economies of scale inherent in the production of newspapers.

While monopolistic competition theory is applicable to the newspaper industry because of its emphasis on product competition, the theory assumes many sellers, which is not typical of newspaper markets. The number of firms in the markets

more closely fits the assumption of oligopoly. Perhaps the newspaper industry can best be discribed as a series of oligopolies with monopolistic competition. However, in most oligopoly markets the two firms cooperate to fix prices and divide the market in a way that benefits both.[10] This cooperative duopolistic behavior seems unlikely in competitive newspaper markets. The newspaper in a two-firm market with the largest market penetration tends to attract a disproportionately large percentage of advertising revenue.[11] This is called the "circulation spiral," even though household coverage has been found to be a better predictor of its impact on competition than circulation in some cases.[12] The spiral results from the desire by advertisers to reach the largest audience at the smallest cost. The newspaper that attracts the higher percentage of readers also attracts the higher percentage of advertising. This advertising helps attract more readers, who attract more advertising. As a result, one of the papers usually goes out of business. In order to increase circulation and gain the majority of advertising, a newspaper must be a substitute for its competing newspaper, which means it must provide equivalent services and information. At the same time, it must differentiate itself by providing product attributes the competitor does not provide.

Review of Literature

Research concerning competition and daily newspaper content falls into two categories. The first is composed of cross-

sectional and case studies; the second is composed of longitudinal studies. The former have tended to find no affect of competition on content, while the latter have tended to find the opposite.

Bigman asked in an early study whether two competing newspapers were better than one.[13] He studied the two newspapers in Pottsville, Pennsylvania. He analyzed the content in issues from December 9 to 14, 1946 and concluded that the differences were trivial. However, he pointed out that the Republican ran 11 local editorials out of 68 during the period, while the Journal ran only two local editorials out of 78. Two problems with the study are mentioned by the author.

A few years after the Bigman study, Willoughby studied the two newspapers in Washington, Indiana.[14] He analyzed the content of four issues of the newspapers and concluded the newspapers were very similar. When editorials and columns were excluded, about 51 percent of the editorial content was duplicated. The Herald ran only three editorials, one local, compared to 55, four local, editorials run by the Democrat during another three week period examined by the author. The author, however, discounted these differences because the newspapers only disagreed once and were not involved greatly in advocacy.

The study of editorial content was expanded by Borstel.[15] He concluded from his study of 20 newspapers that neither competition nor ownership significantly affected editorial content. However, one result was consistent with the

two studies above. Borstel said in competing situations one newspaper always had a high proportion of space given to comment with a high proportion of this comment originating locally. The rival paper was always low in these two areas. Even though the sample was greater than in previous studies, it was still limited.

Nixon and Jones undertook to solve the problems of limited samples by the secondary analysis of three existing data sets and the study of a matched set of 13 competitive and non-competitive newspapers.[16] The samples were compared for various news categories, and little difference was found between competitive and non-competitive newspapers. The topics concentrated on in this study ignored other categories that have meaning for newspaper content. The geographic location of coverage was not checked, nor was an effort made to look at staff size or other financially based variables.

A couple of years after this study, Kearl looked into the impact of competition on press service resources.[17] A total of 728 newspapers was examined. The author concluded monopoly newspapers of less than 15,000 circulation carried fewer wire services than did competitive newspapers of the same size. Monopoly newspapers of more than 15,000 tended to carry more press services than did competitive newspapers. Kearl considered only the Associated Press, United Press, and International News Service. He ignored newspaper syndicates and wire services. Emery listed four newspaper-owned services that were active

during 1956, the year of the study.[18] These may well have been substituted for the smaller press services.

Weaver and Mullins compared content and format characteristics of newspapers that were leading and trailing in circulation in competitive markets. They examined the content of the papers in 23 of the 31 competitive markets for randomly selected days.[19] Their content categories were the same as those used by Nixon and Jones,[20] with minor modifications. Although there were few differences between the two types of newspapers, the trailing newspapers tended to have a larger newshole. The trailers tended to use more modern format elements, while the leaders tended to use more traditional elements. Leading newspapers tended to be afternoon papers and those trailing tended to be morning papers. Leading newspapers averaged 3.7 news services compared to 2.6 for trailing newspapers.

One final cross-sectional study was the re-analysis of the New England study[21] by Becker, Beam, and Russial.[22] No relation was found between competition and the quality index the researchers used. However, the three Boston newspapers were excluded from the analysis by the authors. This might have affected the competition results, since there are few competitive newspapers in the area outside of Boston.

While most cross-sectional studies have found few differences between competitive and non-competitive newspapers, longitudinal studies show less consistency. The first such study examined the content of newspapers in Red Wing, Minnesota before

and during World War II.[23] Twenty-four issues of the Daily Republican were selected randomly for 1938-39 and 24 issues of the Republican Eagle were selected from each of two years, 1943 and 1944. The authors concluded that except for coverage of war activities, the newspaper did not change the news and editorial content much after the merger of the two newspapers. Statistical analysis of the data was not part of the study, but the increase in war and foreign coverage and the decrease in city coverage appear to be great enough to be significant.

For several years after the Red Wing study, most research efforts in this area were cross-sectional in nature. Rarick and Hartman added the variable of intensity of competition in their longitudinal study of a Washington market.[24] They examined content in the Tri-City Herald, which served a four city area, at three points during a 15-year period. They examined 54 issues between October 1 and June 30 for each of the three periods. In 1948-49, the Herald had no daily competition and a circulation of about 10,000. With competition in 1953-54, the Herald had a circulation of about 12,000, which was about 50 percent of total circulation in the market. In 1962-63, the Herald had a circulation of about 18,000 compared to the competition's 8,000. The three periods were ones of no competition, intense competition, and minimal competition.

The authors found local content was different during intense competition compared with the other two periods. The percentage of space given local news and features, pictures, and

columns of opinions was significantly greater during intense competition than during the other two periods. Percentage of editorial space given local issues was less with intense competition than with no competition, but greater than with minimal competition. Space given immediate-reward news and feature stories was significantly greater during intense competition than during minimal or no competition. In addition to their data, the authors re-analyzed data from the Nixon and Jones study[25] by combining the crime-vice, accident-disaster, and human-interest categories into one immediate-reward category. There was a statistically significant difference between competitive and non-competitive newspapers.

The Rarick and Hartman study is the basis for three attempts at replication. The first, by Schweitzer and Goldman, examined competition in Bloomington, Indiana, from May 1970 to May 1974.[26] They found intense competition resulted in more space given to pictures and less space given to editorials, but they found no difference in space given to local news and features and did not examine opinion columns. They found no difference in the space given to immediate-reward news. Overall, the authors said the study did not support the earlier findings.

The conclusions of the authors in this study are suspect for several reasons. First, they defined intense competition differently than did Rarick and Hartman. They did not have circulation figures for the competing newspapers, so the period of intense competition was one in which the trailing newspaper

had 23.4 percent of total paid advertising linage in both papers. A later study of the same newspapers reported that in 1972 the Herald-Telephone had a circulation of 20,976 compared to 9,603 for the competition.[27] The Schweitzer and Goldman study did not have a period of competition that Rarick and Hartman would have labeled intense. Second, the definition of immediate-reward news was different here than in the earlier study. Third, they did not examine opinion columns as the earlier study had. Fourth, two of the three categories of local coverage did show significant differences among the three types of competition.

There have been two partial replications of the Rarick and Hartman study since the Schweitzer and Goldman study. Stakun studied the same newspaper, the Herald-Telephone in Bloomington, Indiana, as did Schweitzer and Goldman.[28] He examined a constructed month when it faced competition from the Courier-Tribune in 1972 and one when the competition had closed. He also used an existing monopoly newspaper in Columbus, Indiana, as a control newspaper. The author found the Herald-Telephone decreased the column inches of staff-generated copy by 25.3 percent and the proportion of total space given local news from 17.6 to 15.1 percent after the competition ceased. He also found that the newshole shrank from 51.4 to 48.2 percent of the newspaper. He did not find these trends with the control newspaper. His conclusion was that competition did increase local coverage, which is what Rarick and Hartman found.

Woerman studied competition in Beloit, Kansas.[29] He

analyzed the content of six weeks of the Beloit Daily Call from 1971-72 and six weeks of the Call and The Solomon Valley Post during 1974-75. During the latter period, the two newspapers had about equal circulation. The author found support for Rarick and Hartman's hypothesis that intense competition meant an increase in local coverage. The hypothesis that intense competition resulted in increases in immediate-reward news and features was not supported. The author said this was possibly due to his inclusion of sports, society and other non-news stories. The author also compared the content of the two newspapers during 1974-75 and found there were differences in local coverage, editorial comment, county coverage, and controversial content.

In addition to the studies of newspapers in the United States, two studies of Canadian newspapers dealt with competition and content. Trim, Pizante and Yaraskavitch studied the news coverage in two Canadian cities when they had competition and after one newspaper closed down in each city.[30] They found that without competition the two surviving newspapers had smaller newsholes, less space devoted to coverage of city hall, and more of a dependence on higher profile sources for news.

A more extensive content analysis of two Canadian markets that changed from competitive to non-competitive was conducted by McCombs.[31] He analyzed the Montreal Star and Gazette content in 1977 and the Gazette in 1980 after the competition had closed. He also analyzed the Winnipeg Tribune and Free Press content in 1978 and the Free Press content in 1981

after competition ceased. Constructed weeks from a given month were used in all cases.

McCombs concluded that competition had no socially significant effect on the content of these two newspapers. However, this conclusion is questionable for two reasons. First, there were statistically significant differences between newspapers during the base year. Second, statistically significant differences existed between newspapers before and after competition ceased. Some of these differences were consistent with the findings of Rarick and Hartman.[32] The author, however, concluded that these statistically significant differences are not socially significant, although his definition of socially significant differences was not clear.

What can be concluded from these conflicting studies? The differences suggest that competition may have an effect under some conditions but not under others. The statistically significant differences tend to be in the areas of staff coverage, local coverage, and editorial content. The similarities appear to be primarily in the area of distribution of newspaper space among topics and geographic coverage other than local.

This suggests the possibility of three different allocation procedures by newspaper organizations. The first is the daily allocation of news space, the second is the budget process, and the third is the editorial space allocation process.

The daily allocation of news space involves the editors' selection of the most newsworthy stories from all that are

available from wire services, syndicates and staff. The second process, the allocation of resources by management through the budget process, usually occurs once a year with periodic evaluations of the adherence to that budget. This budgeting process affects the number of staff members and wire services used by the newspaper.[33] The constraints on local coverage are set by this process, and it is most susceptible to the effects of competition and ownership.

The editorial space allocation process, although day-to-day in nature, differs from the news space allocation process. Editorial writers are not limited to issues and topics provided by wire and staff. They can write about whatever they or their management want. The editorial process also differs because it is more likely than news coverage to create negative feelings toward the newspaper. This raises the possibility of some managements limiting negative reaction by ignoring local controversial issues.

In addition to different allocation processes, the measure of competition may have made a difference in existing research. Longitudinal studies showed that the intensity of competition, which means comparative share of market newspaper firms, has an impact on competition. This concept has not been applied to a cross-sectional study. It may be that the difference between a categorical measure used in cross-sectional and an interval measure used in intensity may account for differences.

Based on existing literature, three hypotheses will be tested. These are:

(1) The content of daily newspapers is a result of more than one resource allocation process.

(2) Competition between or among daily newspapers within a city will influence the content of these newspapers.

(3) Intensity of competition provides a more accurate measure of the impact of competition on content than does a categorical measure of the presence or absence of competition in a market.

Method

The randomly stratified sample of 114 newspapers was used in this study. The sample was stratified for ownership and competition and included 72 monopoly, 21 competitive, and 21 joint operating agreement newspapers. The JOA newspapers differed from the competitive newspapers in only two of 21 content measures[34], so the JOA and competitive papers were grouped as competitive. Subscriptions to the newspapers were purchased for the month of November 1984. A constructed week was randomly determined from this month.[35] The resulting sample had almost twice the average circulation of daily newspapers in the United States. Since stratified sampling is a form of weighting, the weighted mean circulation of the sample was 40,469, compared to the population mean of 44,087 in 1984.

Due to limited resources, only the news and editorial sections were analyzed. The news sections were analyzed for

source of stories, geographic location of story subject, and type of coverage. Source of stories could have been staff, wire service or news syndicate, and other. The geographic location could have been local, county, foreign, or other. Other included all state, regional, and national coverage. The nature of news could have been hard news, in-depth coverage, or other. Hard news was defined as conflict-oriented coverage of events or issues. In-depth coverage included a series of stories, news analysis and investigative reports.[36] In addition, all photographs, maps, drawings and graphics were coded as visual material. The number of staff writers and reporters was recorded using bylines. Only four newspapers did not use bylines. In addition, number of wire services and news syndicates were included as a variable.[37] Editorial pages were analyzed for distribution of space among certain categories and the geographic subjects of editorials. The space categories include editorials, letters to the editor and guest columns, staff and syndicated columns, and cartoons. Geographic subjects of editorials included editorials about the city, editorials about the county and other.

The author and graduate students coded the newspapers. As a reliability check, all coders coded the same copy of two newspapers at two different times. The first check took place after each of the coders had coded the week's issues of two or three newspapers. The second check took place after about 70 percent of the coding was complete. Agreement for categories in

the first news section coding check ranged from 74.8 percent to 89.4 percent. The agreement in categories for the first editorial section coding check ranged from 69.6 percent to 100.0 percent. The author examined the results of the first check and found that some of the disagreement came from two of the coders not accurately reading the categories. These problems were pointed out to the coders and an additional reliability check was conducted. Agreement for categories in the second news section reliability check ranged from 81.4 percent to 91.4 percent. Agreement among coders for the second editorial page reliability check was 100 percent for all categories.[38]

As researchers have pointed out, item agreement is not enough to evaluate reliability of a coding instrument.[39] The agreement must be compared against the possibility that agreement occurred by chance. Krippendorf's agreement coefficient, also called alpha, was computed for the coding categories.[40] Alpha represents the percentage of agreement above chance. Alpha for coders in categorizing the first newspaper was 63.2 percent for source, 92.8 percent for geographic subject, and 41.1 percent for nature of news. Alpha for the second news section was 85 percent for source, 73.6 percent for geographic location, and 69.2 percent for geographic subject. Alphas for the editorial page check were determined for the distribution of the page among categories and the distribution of editorials among geographic topic for both newspapers. Alpha for distribution of space was 95.4 percent, while editorial subject

was 73.5 percent.

Space was measured in square inches. The reliability of this measurement was also checked. The author measured 14 newspapers coded by the other four coders. The Pearson product-moment correlation for the measurements was .99.

Because the newspapers varied greatly in total square inches in the various categories and because allocation was the underlying decision process, the proportion of space given to various categories was used as dependent variables in this study. These proportions were operationalized as percentages of various base figures. The dependent measure of direct competition was measured in two ways. A categorical measure of presence or absence of a competitive newspapers was used.[41] A measure of intensity of competition was also constructed based on the percentage of total daily circulation in a market that a newspaper had. In markets with two newspapers, the percentage of total circulation by the trailing paper was subtracted from the percentage of total circulation by the leading newspaper. In a market with three newspapers, the percentage of circulation in the market was subtracted from the closest competitor. The absolute value was used. The resulting scale ran from zero, which meant the most intense competition, to 100, which meant no competition.

In addition to the dependent and independent variables, market and organizational characteristics were used as control variables. These included average daily circulation, percentage

of change in city population from 1970 to 1980, percentage of city work force unemployed, number of households in the city, gross income per household in the city, and percentage of city population with college education.[42]

Factor analysis was used to examine the hypothesis concerning the allocation processes, while multiple regression was used to test the effects of competition on content. Data were examined to see if they fit the assumptions of the two procedures. Two potential problems were found. First, 14 of the categories had from one to three outliers, which were defined as values greater or less than three standard deviations.[43] A conservative approach was taken and all outliers were reassigned the value of three standard deviations. Second, the linearity of the relationships was examined with scatterplots. There appeared to be a slight curvature of the plots in some cases. This was partially due to the extreme cases of outliers, so this was modified somewhat by the reassignment of values. The use of regression with slightly nonlinear data would tend to underestimate relationships. The results of the study are conservative estimations of the relationship.

Results

The hypothesis that newspaper content is determined by more than one allocation process was tested with factor analysis. Twenty-one content measures were factor analyzed to see if they grouped in the news space allocation, editorial space allocation and budget allocation processes. Table 1 shows the results.

INSERT TABLE 1 HERE

The initial seven factors in the factor analysis were rotated with varimax, and four factors had eigenvalues that exceeded one. These four factors accounted for 79.9 percent of the total variance. The remaining variance was distributed among the other three factors. The four factors come close to having simple structure. Factoring loadings of .40 or above were used to indicate high loading on a factor. The first factor loaded high on number of reporters, square inches per reporter, percentage of news section given wire service, percentage of news section given in-depth coverage, number of wire services carried, and percentage of news section given staff copy. Three of these five represent an allocation of financial resources to the editorial department. The number of reporters for a given amount of space is determined by the financial commitment to staff size and the amount of space given the news-editorial department, which also represents a financial commitment. The number of wire services carried also represents an allocation of money to the news-editorial department. In-depth coverage requires extra time, more reporters and expertise. All of these require financial commitment. The negative sign associated with the percentage of space given wire service, indicates that as the number of wire services carried increases and the amount of space per reporter decreases, the percentage of space given wire service stories decreases. This is consistent with financial commitment. The final variable of space given to staff stories

probably represents a high correlation of space per reporter.

The second factor loads high on only two variables, which are average space of all stories and average space per hard news story. This factor indicates that newspapers tend to be consistent in the length of stories whether the stories are hard news or features.

The third factor loads high on percentage of editorial and op ed pages given letters to the editor and guest columns, percentage of editorial and op ed pages given to staff and syndicated columns, and percentage of editorial and op ed pages given to editorial cartoons. This factor represents the allocation of the editorial and op ed pages to various types of material. Interestingly, the percentage of editorial and op ed pages given editorials hardly loaded at all on this factor. This indicates that decisions about how much space should be given editorials is not correlated with the way the rest of the editorial space is used. This does not mean, however, that different people determine both.

The fourth factor loaded high on percentage of all newspaper space given to news and editorial material, percentage of news section given to news copy, number of wire services, and percentage of editorial and op ed space given to all editorials. The number of wire services also loads high on factor 1, but the signs are opposite. Factor 4 has a negative sign. The space given editorial and news material represents a commitment of financial resources because this type of material does not

contribute as much to revenues as space given advertising. The negative sign on number of wire services and space given to editorials indicates that newspapers which tend to give a higher percentage of space to news and editorial material tend to have fewer wire services and use less of their space for editorials. This almost seems like a contradiction in financial commitment. It probably indicates that non-competitive newspapers use a higher percentage of total newsapper space for news and editorial material, but they do not use that space in the same way as competitive newspapers. Even tough competitive newspapers give a smaller percentage of space to news and editorial material, these newspapers actually give more square inches to news and editorial material than do non-competitive papers. This factor will be called the advertising space allocation factor because the allocation to news and editorial material represents the flip side of advertising space allocation. In fact, news and editorial space is usually that space left after advertising space is allocated.

The first four factors support the fact that different allocation processes appear to be involved in creating newspaper content. While the editorial space and budget allocation processes have one or more factors that apply to the process, the news space allocation process failed to have a corresponding factor. The news space variables were scattered throughout several factors. This may indicate a news space allocation process is affected by several forces that combine to shape the

news sections.

For the analysis of the second and third hypotheses, four processes will be assumed. These are editorial, budget, news space and length allocation processes. This division is one of convenience because the effects of competition will be evaluated on the basis of individual dependent variables. However, the division into four processes can prove useful in evaluating what happens in competitive markets.

The second hypothesis, that daily newspaper content is affected by direct newspaper competition. was tested using regression analysis for each the 21 content variables. The standardized beta weights for competition as a dummy variable and control variables are shown in Table 2.

INSERT TABLE 2 HERE

Five of the 21 dependent variables were affected by the presence of competition. Three of the beta weights were statistically significant at the $p < .05$ level, one at the $p < .01$ level and one at the $p < .001$ level. Four of the five variables that were affected were budget allocation variables. These are percentage of all newspaper space given to news and editorial material, percentage of news section given to news copy, square inches per reporter and number of wire services carried. The fifth variable affected was the percentage of news space given to county coverage.

The results indicate that newspapers in competitive markets carry more wire services, have fewer square inches of

space per reporter, have a smaller percentage of news section given news copy, have a smaller percentage of all space given to news and editorial material, and have a smaller percentage of news section given to county coverage than do newspapers in monopoly markets. The amount of variance accounted for by competition ranged from about 2 percent for percent of news section given news copy to about 7 percent for number of wire services and percentage of news section given county copy. These relationships were significant even after the regression controlled for several market variables.

The importance of circulation also stands out in Table 2. Seven of the dependent variables were significantly affected by circulation of the newspapers. Five of these were in the budget allocation category. This means simply that larger organizations usually have more money to spend and often have a smaller percentage of space given news and editorial matter. The latter situation must be considered in light of the fact that larger newspapers have more space given to news and editorial material even though it makes up a smaller proportion of the newspaper space.

The third hypothesis states that intensity of competition provides a more accurate measure of the impact of competition on content than does a categorical measure, such as the dummy variable used for testing the first hypothesis. Again, this hypothesis was tested with regression analysis. The dummy variable for competition was replaced with the scale described in

the methods section. Support for this hypothesis will be based on the differences in levels of significance and amount of variance accounted for when the intensity regressions are compared with the dummy variable regressions.

Table 3 shows that the same relationship exists for the intensity of competition as for the dummy measure of competition. However, the chance of the relationship being due to sampling error decreased in three of the five relationships and remained about the same in the other two. As intensity of competition increases in a market, which means the difference in the percentage of market penetration approaches zero, newspapers will increase the number of wire services carried, decrease the amount of space per reporter, decrease the percentage of news section devoted to news copy and county coverage, and decrease the amount of the total newspaper given to all news and editorial matter.

INSERT TABLE 3 HERE

Just as the probability of the relationship occurring due to sampling error decreases when using intensity as a measure, the amount of variance accounted for increases, compared with the dummy measure of competition. About 13 percent of the variance in the number of wire services, about 10 percent of the variance in amount of space per reporter, about 12 percent of the variance in percentage of news section given news copy, about 16 percent of the variance in percentage of all newspaper given to news and editorial material, and about 10 percent of the variance in the percentage of news section given to county coverage are

accounted for by intensity of competition. Variance accounted for by the dummy variable ranged from 2 to 7 percent.

Conclusions

Contrary to some of the existing literature, competition has an impact on daily newspaper content. Conflicting research exists because of differences in the types of dependent variables and the measurements of competition used in various studies. The effect on content comes primarily through the budget allocation process and the important measure of competition is the intensity of that competition. Put another way, the presence of competition with an almost equal market share means a competitive newspaper must spend more money to differentiate itself. This result is consistent with the theory of monopolistic competition.

The specific difference will occur through the use of more wire services and the use of more reporters for a given amount of space to fill. Some of this money may come from a proportionate reduction in the amount of space given to news and editorial material. The overall impact of intense competition compared to little or no competition is a smaller percentage of space given the newshole with more options for filling the space that is available.

It is difficult to determine if the overall effect of competition is to improve the product. However, increased number of wire services indicates the possibility that newspapers have more stories and alternate versions of the same story from which to choose. A smaller amount of space per reporter

indicates the possibility that reporters will have a greater opportunity to pursue stories in more depth. Danielson and Adams found that completeness of the coverage of the 1960 presidential race was a function of the number of wire services and number of reporters a newspaper had.[44] The effect of competition on county coverage is probably related to the need to concentrate resources on the central city rather than the county. A staff can only be spread so far. Since the central city circulation is the determining factor in survival, it would appear wise for a newspaper to concentrate in this area.

Although this study found an effect of competition on daily newspaper content, it is still consistent with many of the existing studies that found no effect. Most of these studies concentrated on the allocation of space among different categories of news and editorial material. Except for the afore mentioned impact on county coverage, which was not examined in most of these earlier studies, this study found no extensive impact in space allocation. The allocation of space is more likely to be a function of sociological and psychological variables. It seems unlikely that newspapers would attempt to differentiate themselves through news space allocation in two-newspaper markets because the flow of news is often difficult to predict. It is more likely that competing newspapers will choose to remain substitutes in the types and topics of news and try to differentiate in the quality and depth of coverage of these areas.

This study is also consistent with existing longitudinal studies. First, it supports the findings in some of these studies that intensity of competition is the appropriate measure of competition. Second, while no statistically significant difference was found in local coverage, the increased investment in staff during times of intense competition may well mean a significant difference in local coverage by a newspaper when it is compared to itself during times of little or no competition.

The main drawback to this study is that it does not measure the impact of content differences on the reader. It may be that having more reporters and wire services has little effect on the product. This question is beyond the scope of this study, but it suggests an area of future study. A second drawback is that the measures of financial commitment used here are secondary in nature. Actual financial data from newspapers would be useful in verifying the results of this study.

These results raise interesting implications for policy. If a greater financial commitment by a newspaper due to competition does mean a better product, the role of government in preserving existing competitive markets and in promoting new competitive markets needs to be evaluated. Despite the limited number of competitive and JOA newspapers, the fact that almost 30 percent of all daily circulation comes from these newspapers makes them important. Retaining competition could be accomplished by breaking up the economies of scale from production[45] and by the consideration of the public information function of

newspapers in administering antitrust laws, while encouraging new competition could come from indirect subsidies through tax laws. If the decline of competition has in fact lowered the level of the newspaper product, the underlying problem is whether the United States will continue to let advances in technology that produce economies of scale undermine the functioning of newspapers in the information marketplace.

ENDNOTES

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[36] The operationational definitions of all the categories and a more extensive explanation of the content analysis are available from the author.

[37] The number of wire services was taken from 1984 Editor & Publisher International Yearbook (New York: Editor & Publisher Co., 1984).

[38] Agreement in the first news section reliability check was 81 percent for source, 89.4 percent for geographic subject, 74.8 percent for nature of news, and 81.4 percent overall. Agreement for the second news section reliability check was 91.4 percent for source, 82.8 percent for geographic subject, 81.4 percent for nature of news and 85.2 overall. Agreement for the editorial section in the first reliability check was 79.3 percent for editorials, 69.6 percent for editorial subject, 80.8 percent for columns, 100 percent for cartoons, and 81.6 percent overall. Agreement for the editorial section in the second reliability check was 100 percent for all categories.

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TABLE 1

FACTOR ANALYSIS OF CONTENT MEASURES WITH VARIMAX ROTATION

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Number of reporters	.4237	.3451	-.3000	-.0762	-.0918	.2221	.4091
Percent of all newspaper space given news and editorial material	-.2281	.0769	.0539	.7456	.2910	.0971	.0350
Square inches of space per reporter	.5940	.0176	-.0561	.3890	-.0067	.0675	.0472
Percent of news section given news copy	-.1089	-.0225	-.0845	.6597	-.1389	-.1722	-.0479
Percent of news section given foreign copy	.2569	.2312	.1140	-.1821	.4788	.5236	.2664

TABLE 1 - Continued

Percent of op ed/ editorial space given editorial columns	.0291	-.1428	.7825	.2056	-.0822	.2160	.0284
Percent of op ed/ editorial space given editorials about county	.0271	.0364	-.0381	-.1559	.0861	.0963	-.1518
Number of wire service	.5013	.2310	-.0733	-.5053	-.0985	.2023	.2[illegible]9
Percent of news section given local coverage	.0632	.0464	-.1744	.2028	-.0755	-.7530	.0476
Percent of news section given staff copy	.8660	.1896	-.1731	-.0808	.0513	-.0913	-.1803
Percent of op ed/ editorial space given all editorials	.2953	-.1137	.0454	-.4477	.3255	.0552	.0140

TABLE 1 - Continued

Percent of news section given visual material	.1074	-.0378	.1390	-.0935	-.0799	.0114	-.3115
Percent of op ed/ editorial space given cartoons	-.0517	-.0662	.4636	-.1336	.1432	-.0221	-.0206
Average square inches per hard news story	.0359	.9745	-.0522	.0194	.1850	-.0246	-.1213
Average square inches per story	.2003	.8354	-.1366	-.1039	.0659	.0979	.0637
Eigenvalue	3.8540	2.6207	1.9774	1.2443	.9386	.8360	.6627
Percent of variance	31.8	21.6	16.3	10.3	7.7	6.9	5.5

TABLE 1 - Continued

Percent of news section given hard news	.0058	.2134	.1216	.0308	.7686	-.0128	-.0174
Percent of news section given wire service copy	-.5717	-.0706	.3868	-.0807	.4922	.2371	.2643
Percent of news section given county coverage	-.1008	.0786	-.0459	.1382	-.0118	.0189	-.6445
Percent of news section given in-depth coverage	.5324	.0534	.0646	-.1593	.0609	.0122	.1329
Percent of op ed/ editorial space given editorials about city	.2381	-.1731	.0980	-.1749	.1839	-.3682	.1329
Percent of op ed/ editorial space given letters and guest columns	.0291	-.0150	-.8930	.0237	-.1009	-.0067	.1048

TABLE 2

BETA WEIGHTS FOR REGRESSION OF COMPETITION ON DEPENDENT MEASURES

WITH CONTROL VARIABLES

	Independent and Control Variables						
Dependent Variables	Compet.	Households	Employ.	Change in City Pop.	Education	Income	Circ.
Budget Allocation							
Number of reporters	.143	-.133	-.038	-.026	.033	.058	.481[c]
Percent of all newspaper space given news and editorial material	-.218[a]	.352	.096	-.054	-.023	-.040	-.612[c]
Square inches of space per reporter	-.225[a]	.008	-.141	.047	-.260[b]	-.078	-.241[a]
Percent of news section given news copy	-.218[a]	.502[c]	.146	-.055	-.001	.113	-.616[c]
Percent of news section given in-depth coverage	.116	.193	.063	-.041	.109	-.079	.129
Number of wire services	.269[c]	-.101	-.010	.085	.100	.027	.714[c]

TABLE 2 - Continued

News Space Allocation							
Percent of news section given foreign copy	-.028	.151	-.064	-.072	.169	-.112	.244
Percent of news section given hard news	-.037	.033	-.260[b]	-.047	-.062	-.089	.036
Percent of news section given wire service copy	.004	-.155	-.288[c]	.025	-.014	-.206[a]	-.183
Percent of news section given county coverage	-.323[b]	.037	.048	-.031	-.139	.209[a]	-.096
Percent of news section given city coverage	.219	-.053	.030	.044	-.033	.131	-.198
Percent of news section given visual material	.034	-.001	.154	.077	-.182	.111	.084
Percentage of news section given staff copy	.127	.231[a]	.150[a]	-.076	.125	.245[b]	.233[a]

TABLE 2 - Continued

Editorial Space Allocation							
Percent of op ed/ editorial space given editorials about city	.207	-.168	.050	-.153	-.109	.050	.096
Percent of op ed/ editorial space given letters and guest columns	.175	-.098	.029	.109	-.117	.05[illegible]	.180
Percent of op ed/ editorial space given editorial columns	-.124	.143	.022	-.215[a]	-.067	.110	-.194
Percent of op ed/ editorial space given editorials about county	-.027	-.039	-.171	.014	.049	-.067	.160
Percent of op ed/ editorial space given all editorials	.041	-.101	-.065	-.134	.228[a]	-.175	.216
Percent of op ed/ editorial space given cartoons	-.049	.075	-.198[a]	-.041	-.026	-.167	-.086

TABLE 2 - Continued

Length of Story Allocation							
Average square inches per hard news story	-.117	.133	-.014	.190	.049	.005	.241
Average square inches per story	-.035	.154	-.027	.170	.142	.003	.276[a]

[a] Significant at the $p < .05$ level

[b] Significant at the $p < .01$ level

[c] Significant at the $p < .001$ level

TABLE 3

BETA WEIGHTS FOR REGRESSION OF INTENSITY OF COMPETITION ON DEPENDENT MEASURES WITH CONTROL VARIABLES

Dependent Variables	Independent and Control Variables						
	Intensity of Comp.	Households	Employ.	Change in City Pop.	Education	Income	Circ.
Budget Allocation							
Number of reporters	-.034	.186	-.043	-.036	.063	.040	.493[c]
Percent of all newspaper space given news and editorial material	.243[b]	.287[a]	.087	-.051	-.024	-.045	-.573[c]
Square inches of space per reporter	.273[b]	-.057	-.152	.048	-.256[b]	-.096	-.194
Percent of news section given news copy	.249[b]	.438[c]	.136	-.053	-.000	.097	-.574[c]
Percent of news section given in-depth coverage	.136	.238	.058	-.050	.136	-.096	.143
Number of wire services	-.236[c]	-.015	-.003	.078	.116	.030	.686[c]

TABLE 3 - Continued

News Space Allocation							
Percent of news section given foreign copy	.021	.142	-.064	-.071	.166	-.112	.246
Percent of news section given hard news	-.000	.018	-.258[b]	-.044	-.072	-.083	.030
Percent of news section given wire service copy	-.011	-.154	-.287[c]	.026	-.015	-.204[a]	-.185
Percent of news section given county coverage	.275[b]	.066	.041	-.021	-.161	.207[a]	-.064
Percent of news section given city coverage	-.116	-.023	.028	.033	-.003	.118	-.198
Percent of news section given visual material	-.154	-.001	.166	.084	-.209	.137	.042
Percentage of news section given staff copy	-.110	.271[a]	.152[a]	-.080	.133	.247[b]	.220[a]

TABLE 3 - Continued

Editorial Space Allocation							
Percent of op ed/ editorial space given editorials about city	-.178	-.102	.055	-.159	-.178	.095	.075
Percent of op ed/ editorial space given letters and guest columns	.104	-.038	.028	.101	-.096	.047	.176
Percent of op ed/ editorial space given editorial columns	-.116	.104	.019	-.212[a]	-.073	.108	-.179
Percent of op ed/ editorial space given editorials about county	-.034	-.046	-.172	.014	.034	-.050	.166
Percent of op ed/ editorial space given all editorials	-.060	-.091	-.062	-.133	.225[a]	-.170	.204
Percent of op ed/ editorial space given cartoons	-.075	.050	-.189	-.032	-.056	-.142	-.117

TABLE 3 - Continued

Length of Story Allocation							
Average square inches per hard news story	.113	.097	-.017	.193	.044	.001	.257
Average square inches per story	.087	.147	-.032	.167	.153	-.009	.297[a]

[a] Significant at the $p < .05$ level

[b] Significant at the $p < .01$ level

[c] Significant at the $p < .001$ level