Study Examines Relationship
Among Mainstream, Other Media

by Stephen Lacy, Brendan Watson and Daniel Riffe

A study of public affairs blogs, alternative weeklies and mainstream news media in 216 cities found negative relationship among the presence of alternative weeklies and the presence of mainstream weeklies and public affairs blogs, suggesting their substitutability.

Mainstream daily newspapers, radio and television stations and weekly community newspapers typically serve the interests of the majority of people in their communities. However, the U.S. press system also has given rise to news outlets serving smaller community segments and groups with shared interests. From the 19th century black press, to the late-1900s populist and reform press to alternative newspapers of the 1960s, non-mainstream media helped build community and provide information unavailable in mainstream media.

More recently, a new form of non-mainstream news outlet has developed because of digital distribution. Citizen journalism and blog sites serve neighborhoods within larger cities and widely dispersed special interest communities. Blood wrote that the Internet provides almost anyone the equivalent of a printing press. In 2005, 16 percent of people in the United States reported reading blogs; by 2010, the number was 28 percent.

Historically, a first reaction to a new medium is to evaluate how it fits with existing media: e.g., are public affairs blogs substitutes or complements to existing types of news media? So far, little research has addressed this question. Two studies suggested that citizen journalism sites did not serve as substitutes for daily newspapers. However, both studies dealt only with two types of news outlets. Additional, broader studies are needed to establish the role of citizen
journalism in the array of media within a community. This exploratory study aims to help fill this gap in research by examining the relationship between a range of community media and the existence of alternative weeklies and public affairs blogs. More specifically, it addresses whether citizen blogs have the potential to substitute or complement other news media outlets.

**Theoretical Framework**

Neoclassical economic theory views demand as a function of price, income, prices of substitutes and complements and tastes. But the theory assumes taste to be constant. Media products are differentiated by their content, and demand is often based on individual taste for the differentiated content, which means that neoclassical economics ultimately provides a poor approach for explaining media market demand.

Because content affects people’s preferences for media products, Lacy developed a model of news demand based on the theory of monopolistic competition. Monopolistic competitive markets involve “many” sellers providing differentiated products. Media outlets differentiate to attract consumers away from competitors, yet the process of differentiation also reduces competition because media products become less substitutable.

This model was later extended to describe how individuals use a variety of media outlets to meet their needs, forming a media mix. New technologies can disrupt and reconfigure individual mixes. Because information needs are served by content from a mix of media, two or more media products can be related without the direct substitution of one media outlet’s content for another’s content. In other words, an individual can select content from multiple media outlets to replace the content in a single outlet. For example, if a person drops a daily newspaper, that person could use local television news, a local weekly and local blogs in lieu of the daily. In effect, the blogs and weekly would complement local TV news, which together would substitute for the daily. In short, this model indicates that some media outlets would serve as complements (products used in conjunction with each other) and others would serve as substitutes.

This study examines a number of markets and measures the presence of six types of news media: traditional daily and weekly newspapers, radio and television stations, non-mainstream weeklies (e.g., African-American weeklies, alternative community weeklies, ethnic weeklies) and public affairs place blogs. If types of media outlets in the market are substitutes, their presence will be negatively related; if they are complements, their presence will be positively related.

**Literature Review**

Studies examining whether various media serve as substitutes and comple-
ments tend to look at only a few media at a time, and none were found that studied such roles for both alternative weeklies and public affairs blogs. Thus, this review examines studies of traditional media, non-mainstream newspapers, and finally, the relationship of citizen journalism/blogs to mainstream media.

**Relationships Among Traditional Media**

It should not be surprising that competition exists within types of media. Competition between and among daily newspapers within cities and counties can affect content.\(^{11}\) Competition across types of print media is less clear. A study of 381 counties outside metropolitan areas found that mainstream weeklies compete with non-metropolitan dailies in some counties for readers, but the intensity varied.\(^{12}\) Similar results were found for Japanese national dailies competing with local dailies for readers.\(^{13}\)

Competition among print news products fits the financial commitment model—the notion that competitors commit more resources to improve quality.\(^{14}\) Research suggests that the financial commitment approach extends to television competition.\(^{15}\) However, it did not appear to apply to all-news radio competition, though distribution of radio news airtime to different geographic areas varied with competition level.\(^{16}\)

Despite within-media competition, studies have found little direct competition for audiences across media types.\(^{17}\) However, as discussed above, there may be indirect substitution among news media through media mixes,\(^{18}\) a view consistent with Dimmick's theory of the niche, which proposes indirect competition across media.\(^{19}\)

**Non-mainstream Media**

Most media competition studies have been limited to mainstream news media, with little attention paid to competition among non-mainstream news media. "Non-mainstream news media" is a catchall term for a range of media outside the definition of mainstream media, those primarily commercial outlets aiming to serve large segments of a geographic area. The use of the term "news" indicates a focus on news and information media, rather than entertainment media. As a result, "non-mainstream news media" include specialty press elements, such as African-American, Hispanic, ethnic, foreign-language and alternative news media. The term "alternative press" varies tremendously in its use and has been used as a synonym for non-mainstream press. Here we use Atton’s definition\(^{20}\) stating that alternative publications provide information not available elsewhere and have less interest in profit than in the free flow of ideas. Of course, "less interested" does not mean "totally uninterested." In the 1980s, African American newspaper editors noted that lack of advertising support was a major problem for their newspapers.\(^{21}\) Even "citizen journalism" sites are interested in revenue; a 2008 study of 64 citizen journalism sites found that 55 percent had one or more advertisements.\(^{22}\)
Despite the long history of non-mainstream news media, competition among these outlets remains under-investigated. One study of competition between alternative and mainstream media examined what happened in the early 20th century when the end of the Populist movement led to the end of the Populist press. Consistent with the theory of monopolistic competition, Populist weeklies in communities with Democratic weeklies went out of business. But if the competing weekly were Republican, the Populist weeklies became Democratic weeklies. Content in the Populist weeklies resembled content in the Democratic weeklies because of shared values. In other words, Democratic and Populist weeklies were not as differentiated as Populist and Republican weeklies, indicating Populist and Democratic weeklies were competing for similar audiences.

**Competition Between Citizen Journalism Sites and Traditional Media**

At least four studies have examined the relationship between citizen journalism, including blogs and citizen news sites and traditional media. However, their results are inconclusive.

Applegren interviewed 86 Swedish students about use of the Internet for news. He concluded that Internet news services were not a threat to traditional newspapers, suggesting that citizen journalism might not be a substitute for print media. However, the data were from a small convenience sample and dealt with Internet news and not specifically with citizen journalism.

Analysis of a Federal Communication Commission survey and a qualitative analysis of 18 citizen journalism web sites yielded a similar conclusion: only a small percentage of people substituted online news for traditional media. In addition, alternative news sources were more likely to be complements than substitutes.

A content analysis of citizen journalism sites suggested that they were not suitable substitutes for daily newspapers. Citizen journalism site content differed significantly from that on daily newspaper sites, and 38 percent of 167 citizen journalism sites had not published new content during the previous eight days or longer—these differences argue against substitutability.

A 2007 survey of 104 city government beat reporters found that their city governments were covered by an average of .53 non-traditional news sites and 2.3 blogs. Several reporters called the sites useful to citizens but said their impact on reporting was limited.

Dimmick reported that the Internet has displaced traditional media for some people. His survey of 211 people in the Columbus, Ohio, area asked if they used television, cable, radio and newspapers less after they began using the Internet for news. About a third said they looked at TV news less, 28 percent read newspapers less and about 22 percent used both radio and cable less. About 10 percent reported using the four media more. However, the survey did not specify the origins of the Internet news, in terms of whether displacement was by citizen journalism sites or whether the Internet sources were Web sites of traditional media. If one reads a newspaper's content online versus in print, it
is unclear whether the newspaper has been "displaced." In fact, research has suggested that online versions of newspapers were not replacing print versions.\textsuperscript{29}

**Research Questions**

Weekly newspapers have always had lower barriers to entry than have dailies because a weekly company does not need to own a printing press and can hire a printing company. Personal computers have lowered cost and barriers even further,\textsuperscript{30} and the Internet allows for fast and low cost distribution of information.\textsuperscript{31} All these technological changes have increased the media environment's capacity to respond to the demand for information and news that originates in smaller segments of a community.

What remains undetermined in the changing news media environment is how various types of media outlets relate to each other. Are new forms of news media substitutes for traditional forms? Are they instead complements to traditional media? Some studies have tried to answer these questions, but they have not included non-mainstream media outlets. Given the nature of citizen news sites and blogs, their content may resemble other alternative news content more than traditional media content.

**RQ1:** Are traditional news media outlets associated with the presence of an alternative weekly in a city? Little research has examined correlations between presence of traditional news media, such as daily newspapers, mainstream weeklies, radio and televi-
sion stations, and presence of alternative weeklies, such as African American, Hispanic, ethnic and gay and lesbian weeklies. A negative correlation would suggest that alternative and traditional news media may be substitutes for a large number of people in the community. If the correlation is positive, the two types of media outlets are likely complements. The absence of correlation may indicate that the two serve different segments of the community.

**RQ2:**
Are traditional media outlets associated with the presence of a public affairs place blog in a city?

Existing research is inconclusive as to this research question. Results directly addressing the relationship between citizen journalism and traditional media suggest that, as a rule, there is little relationship, and citizen blogs are more likely complements than substitutes. However, the evidence came mostly from survey data and qualitative content analysis. This study uses market-level data to address the question.

**RQ3:**
Is the presence of an alternative weekly associated with the presence of a public affairs place blog in a city?

Academic research has yet to examine the direct relationship of two types of non-mainstream media. However, some direction comes from an historical examination of Populist newspapers suggesting that non-mainstream weeklies that are similar in content might be substitutes for each other.

**Methods**

**Public Affairs-Oriented Blogs**

The study includes 233 U.S. mid-sized cities, a number later dropped to 216 because of statistical issues with 17. These cities contained populations from 100,000 to 400,000, a range chosen to control partially for the effect of population on the number of public affairs blogs. The list was compiled using the U.S. Census' Annual Estimate of Population. An individual researcher conducted a census of all the public affairs blogs for each of these cities.

Public affairs blogs were blogs primarily about the public affairs of the city being studied and written by an author, or authors, within that city. The blog's "about" page or other self-identifying cues on the site enabled the coder to determine a blog's geographic focus. To be included, a substantial portion of content had to focus on news or opinion about public affairs issues specific to that city (e.g., development, education, politics, public safety) and not state, national or global issues. Local events, arts, entertainment, food and other non-public-affairs blogs were excluded.

Blogs were counted only if the majority of posts provided some original commentary; e.g., the blogs featured more than links to or content copied from
other sources, thus excluding sites such as blog aggregators. Blogs also had to be non-commercial and independent. Those written by professional journalists, or sponsored by traditional news organizations, political candidates and/or office holders, or chambers of commerce were excluded. Data were collected from Aug. 25 to Sept. 16, 2009. To be included, sites had to have at least one “new” post in the previous 30 days.

Identification of local public affairs blogs was primarily through the Knight Citizen News Network’s database of blogs and citizen journalism websites, placeblogger.com and Cyberjournalist.net’s Citizen Media Wiki. Then, links to other blogs from each (database-identified) site’s blogroll were used to identify other blogs in the city. Three Google searches were also conducted (City Name AND blog; City Name AND “citizen journalism;” and City Name AND “citizen news”), and the first five pages of results consulted to identify additional place blogs in each city.

Ninety-six of the 233 cities had one or more public affairs place blogs (range = 1-21), 36 had one blog, 16 had two blogs and 14 had three blogs (M=1.46, SD=2.85). The distribution was positively skewed (skewness = 3.16). Because of this non-normal distribution, the measure was recoded for analysis as a dummy variable (0 = no blogs, 1 = one or more blogs in the city).

Alternative Weeklies

Alternative weekly newspapers included geographically based weeklies (such as the San Francisco Bay Guardian), black newspapers, Hispanic newspapers, other ethnic newspapers (including Jewish newspapers) and gay and lesbian newspapers, identified from the 2009 Editor and Publisher Yearbook. Eighty-nine cities had at least one alternative weekly newspaper (41 had one, 27 had two and 20 had three or more; M=.93, SD=2.11, and skewness = 5.08). Because of this non-normal distribution, the measure was recoded as a dummy variable (0 = no alternative weeklies, 1 = one or more in the city).

Broadcast Television and Radio

Broadcast data were drawn from the Federal Communication Commission’s TV Database Query. The number of radio and television stations serving a city was used because ratings data were not available. The correlation between numbers of television stations and radio stations was r=.843. In addition, a separate content analysis of more than 6,800 stories from eight types of news media has shown that the distribution of television news content among types of topics is similar to topic distribution for radio news. As a result, the numbers of radio and television stations were summed for this study (M=8.78, SD=8.10, skewness = .788).

Newspapers

The number of mainstream weekly newspapers in a given city or county was not available, so the number of weekly companies in a county was gathered
from the 2009 Editor and Publisher Yearbook. Seventy-nine counties had one or more weekly newspaper companies producing mainstream weekly newspapers (range = 1-4, M=.64, SD=1.14, skewness = 1.98). Because of its non-normal distribution, the measure was recoded as a dummy variable (0 = no mainstream weeklies, 1 = one or more in the city).

The measure for daily newspapers was penetration of all daily newspapers in a county reported in Standard Rate and Data Service’s Newspaper Circulation 2009. County penetration was used because it has been found to be a better measure of competition than number of dailies and has been used previously. The county was used as the geographic market because it is closer to the natural market for newspapers than the city and is a closer fit to a radio and television station’s market than the city (M=38.98 percent, SD=9.48 percent, skewness = -.308).

Control Variables

Two control variables were included: percentage of population that completed high school (M=83.8 percent, SD=7.67 percent, skewness= -.791) and median household income (M=$52,247, SD=$15,770, skewness = .921). Both are related to reading. Median income was used rather than mean income because the latter was not available for all the cities. One typical control variable, population, was not used for two reasons. First, the studied cities all fell within the 100,000 to 400,000 range, which increased the homogeneity of the data set. Second, the population had a skewness statistic of 1.45.

Analysis

Because the dependent variables were the absence or presence of one or more public affairs place blogs and one or more alternative weekly, logistic regression was used. The data were collected at the city or county level, and the relationships were examined at the market level.

The logistic regression for predicting presence of one or more alternative weeklies in the city included the following independent variables: percentage of city population with a high school degree, city median income, the presence of a public affairs place blog, the county penetration of all daily newspapers, the presence of one or more community weekly companies in the county and summed number of radio and TV stations covering the city and county.

The logistic regression for predicting presence of one or more public affairs place blogs in a city included the following independent variables: percentage of city population with a high school degree, city median income, the presence of an alternative weekly, the county penetration of all daily newspapers, the presence of one or more community weekly companies in the county and summed number of radio and TV stations covering the city and county.

(Note that the two models alternate in their use of blog and alternative weekly presence as dependent and independent variables.)

The data were evaluated for violation of logistic regression assumptions.
Outlier markets, those placed at plus or minus three standard deviations from the mean, were found for percentage of the population completing high school (n=3), median household income (n=3), number of newspaper companies in a county (n=7) and number of television and radio stations (n=1). To retain the cases, outliers were reassigned the value of three standard deviations from the mean. The correlation matrix was examined; no correlations among independent variables exceeded .627. When the logistic regressions were run, 17 cases had standardized residuals greater than plus or minus three standard errors and were dropped, so the final N was 216.

### Findings

**RQ1 asked how the presence of traditional news media outlets was associated with the presence of an alternative weekly in a city.**

Table 1 data show a slight negative relationship between county penetration of daily newspapers and a strong negative relationship with the presence of one or more mainstream weeklies in the county. The Exp(B) measures the increase (if more than 1) or decrease (if less than 1) in probability of the presence of the dependent variable for each one unit increase in the dependent variables.

The Exp(B) for the penetration of dailies in the county equals .923, which indicates that for every one percent increase in penetration, the probability of an alternative weekly presence decreases by 7.7 percent. For example, a city in a county with 5 percentage points higher penetration than the mean would have a 38.5 percent (5 X 7.7 percent) higher probability of being home to an alternative weekly than would a city with the mean level of penetration. The Exp(B) for the presence of one or more mainstream weeklies in the county equals .586; a city in a county with one or more mainstream weeklies is 41.4 percent less likely to have one or more alternative weeklies.

<table>
<thead>
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<th>Independent Variable</th>
<th>Regression Weight</th>
<th>Standard Error</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of high school graduates</td>
<td>-.103</td>
<td>.033</td>
<td>.902</td>
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<tr>
<td>Median income</td>
<td>.000</td>
<td>.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Presence of citizen blog</td>
<td>-.662</td>
<td>.408</td>
<td>.526</td>
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<tr>
<td>Penetration of dailies in the county</td>
<td>-.080</td>
<td>.024</td>
<td>.923</td>
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<tr>
<td>Presence of mainstream weekly in county</td>
<td>-.534</td>
<td>.415</td>
<td>.586</td>
</tr>
<tr>
<td>Number of radio and television stations</td>
<td>.254</td>
<td>.045</td>
<td>1.297</td>
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</table>

N = 216, Cox & Snell R Square = .408, Nagelkerke R Square = .563
The equation correctly classified 83.1 percent of the cases.
A strong positive relationship existed between the number of radio and television stations and the presence of one or more alternative weeklies in the city (Exp(B) = 1.297). For every increase in one radio or TV station, the probability of the city having one or more alternative weeklies increases by 29.7 percent. A city with two more stations than the mean would have a 59.4 percent higher probability of being home to one or more alternative weeklies.

Only one of the two control variables was related to the presence of alternative weeklies in a city: percentage of population finishing high school. The Exp(B) equaled .902; for each percentage point increase in the proportion of people finishing high school, there was an almost 10 percent decrease in the probability of an alternative weekly being in the city.

The overall equation in Table 1 correctly classified 83.1 percent of cases, which is a fairly strong relationship.

RQ2 asked if the presence of traditional news media outlets was associated with the presence of a public affairs place blog.

Table 2 data show only one notable relationship between a traditional media outlet’s the presence and presence of an alternative weekly. The Exp(B) for the number of radio and television stations equaled 1.105, so for every increase in one radio or television station, the probability of a city having a public affairs place blog increased by 10.5 percent. A city covered by 10 more stations than the mean would be more than 100 percent more likely to have one or more public affairs place blogs than would a city with the mean number of stations. Neither control variable was particularly important in explaining the presence of public affairs place blogs.

The overall regression in Table 2 correctly classified only 70.1 percent of the cases. This slight relationship indicates that the most important independent

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**Table 2**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Regression Weight</th>
<th>Standard Error</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of high school graduates</td>
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<td>.024</td>
<td>.985</td>
</tr>
<tr>
<td>Median income</td>
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<td>1.000</td>
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<tr>
<td>Presence of alternative weeklies</td>
<td>-.584</td>
<td>.367</td>
<td>.558</td>
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<tr>
<td>Penetration of dailies in the county</td>
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<td>1.008</td>
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<tr>
<td>Presence of mainstream weekly in the county</td>
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<td>.322</td>
<td>1.032</td>
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<tr>
<td>Number of radio and television stations</td>
<td>.100</td>
<td>.030</td>
<td>1.105</td>
</tr>
</tbody>
</table>

N = 216, Cox & Snell R Square = .155, Nagelkerke R Square = .208
Equation correctly classified 70.2 percent of the cases.
variables for predicting the presence of public affairs place blogs are not these control variables or presence of traditional news media outlets.

**RQ3 asked if the presence of one or more alternative weeklies in a city was associated with presence of one or more public affairs place blogs.**

In other words, was the presence of both types of non-mainstream media outlets related? This question is addressed by comparing Tables 1 and 2. Table 1 treats presence of an alternative weekly as the dependent variable and the presence of public affair place blogs as an independent variable. Table 2 reverses the two measures.

The Exp(B) with alternative weeklies as the dependent variable equals .526, and the Exp(B) with place blogs as the dependent variable equals .558. These values indicate that the existence of one or more alternative weeklies in a city decreases the probability of having a place blog by more than 50 percent and vice versa.

In other words, a strong negative relationship exists between the presence of these two types of non-mainstream media outlets.

**Discussion**

This exploratory study examined relationships among mainstream and non-mainstream news media at a market level. Negative associations suggest possible substitutability, and positive associations indicate the possibility of media outlets being complements. Both types of relationships were found. The presence of alternative weeklies was related to three types of mainstream media. There was a strong negative association with mainstream weeklies' presence and a slight negative association of alternative weeklies' presence with dailies' penetration. The latter finding is similar to one found between penetration of county dailies and mainstream weeklies. These results are evidence that alternative weeklies are possible substitutes for weekly and daily mainstream newspapers. The results also indicate the important role of publication cycle in substitutability: alternative weeklies are more likely to substitute for mainstream weeklies, although not exclusively.

On the other hand, presence of alternative weeklies was positively related to the number of radio and television stations. This is consistent with the news model that suggests two or more elements in a person's media mix can act as a substitute for other media types. However, this study's market-level data cannot provide information on individual decision making.

The associations among the presence of public affairs blogs and mainstream news media were not as strong as were found with alternative weeklies. The only notable relationship was a positive one between the number of radio and television stations and the presence of one or more public affairs blogs. This suggests the two types of media might be complements, in the same way that TV and radio stations might be complements for alternative weeklies. All other
relationships between mainstream media and public affairs blogs were too small to be important.

Perhaps the most striking finding was the negative association between the presence of one or more public affairs blogs and one or more alternative weeklies. The existence of either of these types of news media decreased the probability of the other existing in the city by about 50 percent.

The most obvious interpretation is that the two types of media possibly serve as substitutes for a large portion of the community. An alternative interpretation concerns the supply side rather than demand side of the relationship. Because public affair blogs are relatively non-commercial, the existence of an alternative weekly might reduce the available journalistic talent pool in a community. If people who have journalistic skills work for alternative weeklies, where they might even be paid as freelance journalists, they would not be available to work on public affairs blogs.

Overall, the data suggest complex relationships among various types of news media outlets in a community. Future studies of markets should examine all forms of news media in the markets. The strongest relationships are among non-daily news media. The presence of alternative weeklies was negatively related to presence of mainstream weeklies and public affairs blogs. If a community had the latter two forms of news media, there was close to a 100 percent chance that it would not have an alternative weekly. Whether this reflects substitution among citizens or a limited labor pool cannot be determined from these data.

Equally interesting is the positive relationship between number of radio and TV stations and presence of non-mainstream media outlets (alternative weeklies and public affair blogs). This indicates that non-mainstream media and radio and television news content might not be as comprehensive as daily newspaper coverage but together they might provide adequate community coverage.

As with all studies, this one has limitations. It uses market-level aggregate data that cannot address individual decisions about using news products as substitutes or complements. However, strong associations at the aggregate level may reflect relationships at the individual level. Second, the data came from a limited range of city populations—between 100,000 and 400,000. Third, the non-normal distribution of the measures for presence of alternative weeklies and public affairs blogs required use of logistic regression, which does not provide predictions as precisely as do other multiple regression techniques.

Additional research should extend the analysis to a wider range of city population sizes and evaluate substitution and complementary processes at the individual level. This would allow an examination of whether two or more media outlets can act in concert as substitutes for daily newspapers. Finally, research should examine whether the negative relationship between alternative weeklies and public affairs blogs reflects demand or limited labor supply in a community.
Notes


18. Lacy, "Commitment of Financial Resources as a Measure of Quality."


22. Lacy, Duffy, Riffe, Thorson and Fleming, "Citizen Journalism Web Sites Complement Newspapers."


25. Adam Lynn, S. Derek Turner and Mark N. Cooper, "Traditional Content Is Still King as The Source of Local News and Information" (paper presented at the annual meeting of the International Communication Association, Montreal, Quebec, May 21, 2008).


32. Lynn, Turner and Cooper, "Traditional Content Is Still King as The Source of Local News and Information."


40. Tom Baldwin, Dan Bergan, Fred Fico, Stephen Lacy, Steven Wildman, Paul Zube and Alice Eden, "News Media Coverage of Local Governments" (paper presented AEJMC Denver, Colo., August 2010).

41. Editor & Publisher, *Editor and Publisher Yearbook Online (2009).*
42. Standard Rate and Data Service, *Newspaper Circulation 2009* (Willamette, Ill.: Standard Rate and Data Service, 2009).


