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Relationship Between the Readership of Online Newspapers and Print Newspapers: A Public Good Perspective [Slides]

Louisa Ha  
*Bowling Green State University*, louisah@bgsu.edu

Xiaoqun Zhang

Gi Woong Yun  
*Bowling Green State University*, gyun@bgsu.edu

Kisung Yoon

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The Relationship between the Readership of Online Newspapers and Print Newspapers: A Public Good Perspective

Louisa Ha, Xiaoqun Zhang, Gi Woong Yun, and Kisung Yoon
Bowling Green State University
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Introduction

- Rapid development of digital technology + the decrease of digital device prices = high penetration level of digital media
- Online the 3rd most popular news medium (Pew Internet & American Life, 2010)
- 200 million Internet users in the U.S. (2009)
- Online news’ challenge to newspaper industry
  - 58.6% adults read newspaper weekly (1998).
  - 48.4% in 2007 (NAA, 2007)
Public good is a better explanation of the nature of online newspapers and that online and print newspapers are both complementary and substituting each other. Newspaper industry may create a successful business model for its online newspapers based on the public good perspective.
Substitution and Complementarity between Online and Print Newspapers

Some research support the substitution relationship:
- Lin et al. (2005): replacement of online news for print news.
- Cao and Li (2006): growth of online newspaper readership was negatively related to the circulation of print newspaper.

Others support the complementary relationship:
- Stempel et al. (2000): Internet users were more likely to read print newspaper than offline public.
- Chyi and Lusorsa (2002): readership overlap between the two formats of newspapers.
- Chyi and Yang (2010): large proportion (66.2%) of the online readers in US local markets also read the same newspaper in print.
Inferior Goods Theory

- Chyi and Yang (2009): online newspaper was an inferior good whereas the print newspaper was a normal good.
- The inferior good is “a good for which demand decreases as the income of the consumer increases and the relative prices remain constant.” (Schotter, 2009, p. 71)
- The inferior good has a price even though mostly its price is relatively lower than normal goods. Yet most online newspapers are free.
- Untested assumptions:
  - Lower income people change the reading preference after they become richer.
  - Shorter time spent on online news = lower perceived quality
The public goods theory is another possible explanation of the economic nature of information on the Internet (Hoskins, McFadyen and Finn, 2004, p. 298).

Public good has two distinct properties:

1) **Nonexcludability** : “if one person consumes such a good, others cannot be excluded from consuming it.” (Schotter, 2009, p. 635)
2) **Non-rival consumption**: “consumption of such a good by one person does not diminish the amount available for consumption by anyone else.” (Schotter, 2009, p. 635)

Media have characteristics of both public good and private good, hence they are mixed goods (Hoskins, McFadyen and Finn, 2004, p. 296-298; Owen, 1975, p.18).

The public good concept is more suitable for online newspapers because they have the two properties of public good.
RQ1: What are the demographic characteristics of online newspaper readers?

RQ2: Does the online newspaper readers have the same demographic characteristics as the print readers?

RQ3: What’s the relationship between the print newspaper and the online newspaper especially among those who use both print and online newspapers?

RQ4: Is online newspaper an inferior good or a public good?
Mail/self-administered survey in Northwest Ohio area from September 8 to December 20, 2010 (web version available).

Two sampling frames for this study:

1) Northwest Ohio resident database supplied by a local newspaper;
2) college students in a Northwest Ohio state university.

Northwest Ohio residents: a simple random sample selected from Northwest Ohio residents database (n=1499)
College students: 12 general education classes and large introductory lecture classes with a variety of majors and class standings

A total 688 responses were received (329 NW Ohio residents, 369 college students).
Profile of respondents

- Males 50.2% (n=334), Females 49.8% (n=332).
- The household incomes of most respondents were lower than $150,000 annually.
- Age of the respondents ranged from 18 to 92 and the median age of the sample was 24.
- People aged between 20 and 79 constitute 80.7% of the sample population.
- Most respondents were well educated. 67% of Northwest Ohio resident respondents had college education or above.
Male respondents (n=334) significantly spend more time (mean=1.09 hours/week, s.d.=2.523) reading online newspapers than female respondents (n=332, mean= 0.55 hours/week, s.d.=1.469). (F=11.032, p < .01)
Income Group Comparison

- a. Under US$30,000
- b. $30,001-$60,000
- c. $60,001-$90,000
- d. $90,001-$150,000
- e. Over $150,000

- Online newspaper
- Print newspaper
Cohort Group Comparison

![Bar Chart]

- Hours per week:
  - <20: 0.77 (Online), 1.09 (Print)
  - 20-29: 1.02 (Online), 1.05 (Print)
  - 30-39: 0.97 (Online), 1.26 (Print)
  - 40-49: 0.86 (Online), 1.65 (Print)
  - 50-59: 0.59 (Online), 2.64 (Print)
  - >60: 0.23 (Online), 3.95 (Print)

Legend:
- Blue: Online newspaper
- Red: Print newspaper
Education Group Difference

- b. Grades 9-11
- c. High School or equivalent
- d. 1 to 3 years of college or technical school
- e. College graduation (4 years)
- f. Attended or completed graduate school.

- Online newspaper
- Print newspaper

Hours per week: 0.09, 0.82, 0.3, 0.91, 1.44, 1.13, 2.18, 2.18, 3.22, 0.78
### Income does not predict online newspaper readership

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household income</td>
<td>-0.008**</td>
<td>-0.05**</td>
</tr>
<tr>
<td></td>
<td>(-0.203)</td>
<td>(-0.120)</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.127***</td>
<td>-0.131***</td>
</tr>
<tr>
<td></td>
<td>(-3.481)</td>
<td>(-3.643)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.131***</td>
<td>-0.083**</td>
</tr>
<tr>
<td></td>
<td>(-3.521)</td>
<td>(-2.222)</td>
</tr>
<tr>
<td>Education</td>
<td>0.097*</td>
<td>0.80**</td>
</tr>
<tr>
<td></td>
<td>(2.510)</td>
<td>(2.093)</td>
</tr>
<tr>
<td>Total News</td>
<td>0.378***</td>
<td>0.688***</td>
</tr>
<tr>
<td></td>
<td>(10.361)</td>
<td>(9.206)</td>
</tr>
<tr>
<td>Broadcast network</td>
<td></td>
<td>-0.170***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-3.569)</td>
</tr>
<tr>
<td>Cable news</td>
<td></td>
<td>-0.148**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-2.992)</td>
</tr>
<tr>
<td>Radio news</td>
<td></td>
<td>-0.085*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-2.048)</td>
</tr>
<tr>
<td>None Newspaper website</td>
<td></td>
<td>-0.235***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-4.164)</td>
</tr>
<tr>
<td>N</td>
<td>621</td>
<td>621</td>
</tr>
<tr>
<td>R²</td>
<td>0.188</td>
<td>0.217</td>
</tr>
</tbody>
</table>

Note: the numbers in the parenthesis are the t-test estimates.

*p<0.05, **p<0.01, ***p<0.001
Income also does not predict print newspaper readership

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household income</td>
<td>-0.034***</td>
<td>-0.023***</td>
</tr>
<tr>
<td></td>
<td>(-0.898)</td>
<td>(-0.644)</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.040</td>
<td>-0.031</td>
</tr>
<tr>
<td></td>
<td>(-1.156)</td>
<td>(-0.926)</td>
</tr>
<tr>
<td>Age</td>
<td>0.385***</td>
<td>0.371***</td>
</tr>
<tr>
<td></td>
<td>(10.891)</td>
<td>(8.557)</td>
</tr>
<tr>
<td>Education</td>
<td>0.041</td>
<td>0.035</td>
</tr>
<tr>
<td></td>
<td>(1.110)</td>
<td>(0.978)</td>
</tr>
<tr>
<td>Total News</td>
<td>0.348***</td>
<td>0.670***</td>
</tr>
<tr>
<td></td>
<td>(10.025)</td>
<td>(9.682)</td>
</tr>
<tr>
<td>Broadcast network</td>
<td></td>
<td>-0.143***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-3.245)</td>
</tr>
<tr>
<td>Cable news</td>
<td></td>
<td>-0.030**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-0.853)</td>
</tr>
<tr>
<td>Radio news</td>
<td></td>
<td>-0.186***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-4.853)</td>
</tr>
<tr>
<td>None: Newspaper website</td>
<td></td>
<td>-0.330***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-6.315)</td>
</tr>
<tr>
<td>N</td>
<td>621</td>
<td>621</td>
</tr>
<tr>
<td>R2</td>
<td>0.265</td>
<td>0.329</td>
</tr>
</tbody>
</table>

Note: the numbers in the parenthesis are the t-test estimates

*p<0.05, **p<0.01, ***p<0.001
NEWS MEDIA ATTRIBUTE SCORE: Quality in Coverage on Favorite Topics

- TV: 0.5
- Newspapers: 0.3
- Online: 0.6
- Radio: 0.2
- Mobile Device: 0.1
The online newspaper as an inferior good perspective did not receive support from the data - income and quality attribute.

A public good model – or similar to the broadcast TV model supported by advertising or other innovative forms of indirect consumer payment

– news interest as strongest predictor of consumption and unwillingness to pay for content

• Low market entry barrier.
• Availability of many free news sources online
• Product differentiation (branding) becomes all the more important.
Online News vs. Print News Readership

- Men read more on online newspapers than women.
- No significant difference in the print newspaper reading time between males and females.
- Younger and higher educated read more online newspapers than older and lower educated people.
- The online newspaper readers and print newspaper readers have different demographic characteristics.
Complementary and Substituting Relationship between Online and Print Newspapers

- Online newspapers both complement and substitute print newspapers
- This study shows modest positive relationship between print and online news usage: complementary effect
- Hybrid users – online news as complement to print news
- 25% never-subscribers use online news as sources: substitution effect.
Implications for Newspaper Industry

Online newspapers are fledging public goods that need to:

- Increase readers’ time use to boost its advertising value.
- Unique content and foster reader relationship to fend off competition.
- Cross-subsidy of the print version to lend its established brand loyalty to its online version.
- Targeted database advertising - Effective online advertising strategies for its advertisers
- Offer bulk delivery such as institutional subscription to maximize its public good nature
Thank you very much