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DIGITAL NEWS AUDIENCE ENGAGEMENT AND WEB METRICS: EXPLORING MAJOR RESEARCH TRENDS

In today's digital era, new audience tracking tools have become available for use by journalists and editors. These digital tools bring both innovations and challenges. The goal of this exploratory literature review is to define the rough contours of the recent trends in research focusing on j-audience engagement metrics.

While journalists have access to dynamic and diverse analytics data, it is not clear what the best way to interpret these data is and how journalists should benefit from using these tools. In this review, using exploratory content analysis, I will map the key research directions and emerging themes in the digital audience engagement studies published within 2013-2018. By no means has this review represented an exhaustive analysis. Instead, it attempts to define some key themes emerging in the research studies that focus on the digital news engagement through the prism of audience metrics.

The findings suggest that when studying audience engagement and web metrics the scholars were particularly interested in four major research topics: a) the impact of metrics on journalism; b) how metrics are produced, interpreted, and used; c) what metrics fail to measure; d) changing power dynamics between news consumers and news producers. The findings of this study will be useful for journalists, news editors and media scholars in understanding the nuanced interplay between web metrics and newsroom decisions.

Key words: audience engagement, news engagement, digital news, web metrics, web analytics.

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Ақпараттық БАҚ-тағы аудиторияны тарту және сандық веб-талдау: негізгі зерттеу трендтерін талдау

Сандық дәуірде аудиторияны бақылау және өлшеу құралдары көптеген редакциялардың жұмысының ажырамас бөлігіне айналды. Журналистер мен редакторлар веб-талдау құралдарын көбірек қолдана бастады. Бір жағынан, бұл құралдар бұқаралық ақпарат құралдарының редакцияларындағы аудиториямен жұмыс істеудің инновациялық тәсілдерін ұсынды. Алайда, аудиторияның белсенділігін өлшеуге арналған бұл цифрлық құралдар көптеген проблемалық мәселелерді де тудырды және редакция бөлмелері үшін жаңа дилеммаларды тудырды, олар қазір көбінесе талапты және белсенді қоғамның сұраныстарымен санасуға мәжбүр болды. Мақаланың мақсаты – бұқаралық ақпарат құралдарының аудиториясының тақырыбын зерттейтін және оның белсенділігі мен қатысуын сандық көрсеткіштер арқылы өлшейтін ғылыми мақалалардағы зерттелетін тақырыптардың контурын айқындау. Тәжірибе көрсетіп отырғандай, көптеген редакциялар өз аудиториясының белсенділігін өлшеу, «лайк басу», көзқарастарды, «лайктарды» санау бойынша белсенді есеп жүргізеді. Алайда, редакторлар бұл статистиканы қалай қолданатынын немесе бұл статистика журналистерге өз жұмысында қалай көмектесетінін білу әрқашан мүмкін емес. Сондықтан, осы мақаланың мақсаты – 2013-2018 жылдар аралығында жарияланған медиа зерттеушілердің еңбектерінде қандай негізгі зерттеу сұрақтары мен тақырыптары зерттелгенін анықтау. Бұл мақала ешбір жағдайда аудиторияны зерттеуге және оның қызметін өлшеуге арналған құралдармен байланысты барлық жұмыстар мен нюанстарды ғаламдық және мұқият зерттеу деп мәлімдемейді. Керісінше, мақаланың мақсаты – аудиторияның белсенділігі мен сандық көрсеткіштердің жаңалықтар медиасының жұмысына әсерін зерттеген зерттеулерде пайда болатын маңызды тақырыптарды ғана анықтау болып табылады. Талдау көрсеткендей, келесі тақырыптар ерекше танымал болды: а) веб-метрикалардың журналист жұмысына ықпалы; б) веб-метрика нені өлшейді және бұл деректер бұқаралық ақпарат құралдарында қалай қолданылады; в) веб-метрикалардың кемшіліктері мен әлсіз тұстары; г) БАҚ пен аудитория арасындағы динамикалық өзара қарым-қатынас. Осы зерттеудің нәтижелері

журналистерге, редакторларға және медиа зерттеушілерге веб-метрикалардың ақпараттық БАҚ редакцияларында шешім қабылдауға ықпал ету ерекшеліктерін түсінуге көмектеседі.

Түйін сөздер: аудиторияның қатысуы, жаңалыққа қатысу, диджитал жаңалық, веб-метрика, веб-аналитика.

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Вовлеченность аудитории и цифровая веб-аналитика в новостных СМИ: анализ ключевых исследовательских трендов

В цифровой век инструменты отслеживания и замера активности аудитории стали неотъемлемой частью работы многих редакций. Журналисты и редакторы активнее и чаще стали пользоваться инструментами веб-аналитики. С одной стороны, эти инструменты привнесли инновационные подходы в работе с аудиторией в редакциях СМИ. С другой – цифровые инструменты замера активности аудитории также породили немало проблематичных моментов и новые дилеммы для новостных редакций, которые сегодня вынуждены считаться с запросами требовательной и активной публики. Цель данной статьи – очертить контуры исследуемых тем в научных статьях, которые изучают тему медиааудитории и замеров ее активности или вовлеченности с помощью цифровых метрик.

Как показывает практика, многие редакции ведут активный учет замера активности своей аудитории, подсчитывая «клики», просмотры, «лайки». Однако не всегда удается узнать, как именно данная статистика используется редакцией или как именно данная статистика помогает журналистам в их работе. Поэтому цель данной статьи – выяснить, какие ключевые исследовательские вопросы и темы были изучены в работах медиаисследователей, опубликованных в период с 2013 по 2018 годы. Данная статья не претендует на глобальное и скрупулезное изучение всех работ и нюансов, связанных с изучением аудитории и инструментов замера ее активности. Напротив, автором ставится задача определить лишь новые ключевые темы в исследованиях, которые изучали вовлеченность аудитории и влияние цифровых метрик на работу новостных СМИ. Результаты анализа показали, что следующие темы были особенно популярными: а) влияние веб-метрик на работу журналистов; б) что замеряет веб-метрика, как эти данные используются в СМИ; в) минусы и пробелы веб-метрики; г) динамичное взаимодействие СМИ и аудитории. Результаты данного исследования помогут журналистам, редакторам и медиаисследователям понять нюансы влияния веб-метрик на принятие решений в редакциях новостных СМИ.

Ключевые слова: вовлеченность/активность аудитории, новостные СМИ и работа с аудиторией, цифровые медиа, веб-метрика, веб-аналитика.

Introduction

Digital environments offer countless choices to newsreaders making it almost impossible for editors to predict audience behavior. Web analytics tools offer editors highly detailed audience tracking data. For example, they can monitor the stories with highest and lowest number of views per story on an hourly basis; they can observe how many news visitors transferred from the Social Networks or Google to their news website; they can track what the minimum and maximum engagement time per story is, etc. All these data are dynamic, overwhelming and breath taking. However, the public does not know what «bigger» stories these recorded clicks, scrolls, minutes can tell to: а) editors and journalists; б) audience tracking companies and в) audiences. Therefore, the topic of audience engagement measured via digital metrics becomes one of the trendy concerns of journalism scholars

today. Audience metrics and web analytics opened a new itinerary for doing the research in this field.

The following key observations became evident when searching for the relevant studies that focus on audience engagement in the digital journalism field:

- Audience engagement scholars seem to fail to have a consensus when defining what news engagement is;
- There are different audience tracking companies that offer services to news outlets; each such company uses different methods and tools to track the audiences and therefore offers different packages of data;
- Different tools capture different dimensions of digital engagement and web analytics experts sometimes do not explicitly specify what exactly is being measured;
- Journalism scholars have not yet found one universal way to retrieve meaningful implications from the dynamic data the web analytics software is

producing.

Nevertheless, audience metrics are attracting journalism scholars with diverse research interests, thus are becoming an integral part of quite a few recent news research studies.

Purpose of the Paper

I explored recent research studies that focus on audience engagement from the perspective of web metrics. My goal is to map key emerging research directions and themes within audience engagement scholarly discourse; describe the ways of how scholars used web metrics in their studies and identify the key recommendations that scholars provide for conducting future studies in audience engagement.

The following research questions guided my literature review:

RQ1: What key themes and contexts related to audience engagement and web metrics did digital journalism scholars investigate within 2013-2018?

RQ2: How do digital journalism scholars' approach «web metrics» to answer their research questions?

RQ3: What key recommendations do digital journalism scholars suggest using when exploring the relationship between web metrics and audience engagement in scholarly discourse?

Method

First, I explored the Google Scholar website and the advanced search option resources offered by the website of the Library of the University of Maryland to find articles that contained the following key words: «audience engagement», «web metrics», «engagement measurement», «digital news», «audience metrics», «digital journalism», «online audience», «clicks», «web analytics». After initial exploration of several articles, I came up with additional search items that: a) combined my initial key words and additional common journalistic terms like «news values», «news preferences», «reading news», «news work», «journalists», «online newspaper», and b) combined the synonyms of my initial key words – «big data», «news use» and «digital news user». I read the abstracts, selected the studies applicable to news engagement for closer investigation and developed a collection of at least 30 most relevant studies. Then I selected the articles that: a) were explicitly relevant to measuring audience engagement; b) were published within 2013-2018; c) were published in a peer-reviewed journal. Two highly relevant articles were added to the pool of my selected articles list (See Table 1) despite the fact that they were not published in a peer-reviewed journal. These were:

- Petre, C. (2015). The traffic factories: metrics at Chartbeat, Gawker media, and The New York Times. Tow Center for Digital Journalism.

Table 1 – Studies on news audience engagement and digital

metrics listed in the order of publication date.

№	Authors	Title of the article	Title of journal/ research center	Year of publication
1	Usher			
	Al Jazeera English online: Understanding web metrics and news production when a quantified audience is not a commodified audience.	Digital Journalism	2013	
2	Lee, Lewis, & Powers			
	Audience clicks and news placement: A study of time-lagged influence in online journalism.	Communication Research	2014	
3	Petre			
	The traffic factories: Metrics at Chartbeat, Gawker media, and The New York Times.	Tow Center for Digital Journalism.	2015	
4	Tandoc Jr.			
	Why web analytics click: Factors affecting the ways journalists use audience metrics.	Journalism Studies	2015	
5	Nelson & Webster			
	Audience currencies in the age of big data.	International Journal on Media Management	2016	

6	Dessart, Veloutsou, & Morgan-Thomas	Capturing consumer engagement: Duality, dimensionality and measurement.	Journal of Marketing Management	2016
7	Welbers, Van Atteveldt, Kleinnijenhuis, Ruigrok, & Schaper	News selection criteria in the digital age: Professional norms versus online audience metrics.	Journalism	2016
8	Hanusch			
	Web analytics and the functional differentiation of journalism cultures: individual, organizational and platform-specific influences on news work.	Information, Communication & Society	2017	
9	Kuiken, Schuth, Spitters, & Marx	Effective headlines of newspaper articles in a digital environment.	Digital Journalism	2017
10	Thomson & Greenwood			
	I «like» that: Exploring the characteristics that promote social media engagement with news photographs.	Visual Communication Quarterly	2017	
11	Incollingo			
	«I'm a news junkie... I like being informed»: Mobile news use by a newspaper's digital subscribers.	Newspaper Research Journal	2018	
12	Kormelink & Meijer			
	What clicks actually mean: Exploring digital news user practices.	Journalism	2018	
13	Nelson	The elusive engagement metric.	Digital Journalism	2018
14	Wang			
	Dimensional Field Theory: The adoption of audience metrics in the journalistic field and cross-field influences.	Digital Journalism	2018	
15	Whipple & Shermak	Quality, quantity and policy: How newspaper journalists use digital metrics to evaluate their performance and their papers' strategies.	International Symposium on Online Journalism (ISOJ) conference paper	2018

Whipple, K. N., & Shermak, J. L. (2018). Quality, quantity and policy: How newspaper journalists use digital metrics to evaluate their performance and their papers' strategies. Paper presented at the International Symposium on Online Journalism Conference 2018.

Finally, I added one more article by marketing scholars (Dessart, Veloutsou & Morgan-Thomas, 2016) from the Journal of Marketing Management that offers a constructive framework that journalism scholars can apply when developing the strategies in investigating the user engagement in digital journalism.

Procedure

I reviewed the selected studies to examine the key themes and contexts the researchers used to address the audience engagement using web metrics. Second, I examined which aspect of audience engagement

vs. metrics discourse each study focused on. Finally, I explored how researchers applied «web metrics» in their studies and what recommendations they gave for future studies. After reviewing the papers, I summarized the findings and defined the areas for future research.

Results

After reviewing all the articles, I discovered the following key research themes (RQ1) within audience engagement and web metrics discourse: a) the impact of metrics on journalism; b) how metrics are produced, interpreted and used; c) what metrics fail to measure; d) changing power dynamics between news consumers and news producers. Each key theme includes variation of more specific research questions.

The first theme, «the impact of metrics on journalism,» addresses the following specific sub-topics:

- Impact of metrics on newsroom decision-making (Usher, 2013; Welbers, Van Atteveldt, Kleinnijenhuis, Ruigrok & Schaper, 2016; Nelson & Webster, 2016).
- Impact of metrics on audience decision-making (Kuiken, Schuth, Spitters & Marx, 2017; Lee, Lewis & Powers, 2014; Incollingo, 2018).
- Impact of metrics on data tracking companies (Petre, 2015; Nelson & Webster, 2016; Nelson, 2018).

The second theme, «how metrics are produced, interpreted and used,» develops the following specific sub-topics:

- How metrics are used by editors, journalists, users and data tracking companies (Petre, 2015; Tandoc, 2015; Welbers et al, 2016; Hanusch, 2017).
- Patterns of metrics use by journalists (Tandoc, 2015; Petre, 2015; Hanusch, 2017)
- Factors that affect which patterns the journalists adopt (Usher, 2013, Tandoc, 2015; Petre, 2015).

The third theme, «what metrics should measure» captures the following sub-topics:

- What metrics can and should measure (Petre, 2015; Nelson and Webster, 2016).
- What metrics fail to measure (Kormelink & Meijer, 2018; Nelson, 2018).
- Benefits of metrics to newsrooms (Usher, 2013; Petre, 2015).
- Developing the measures (Nelson & Webster, 2016; Hanusch, 2017; Nelson 2018).

Finally, the fourth theme, «changing power dynamics between news consumers and news producers,» includes the following sub-topics:

- Gaps in news preferences of editors and audiences (Usher, 2013; Welbers et al, 2016; Lee et al. 2014).
- Gaps in professional values of journalists and data tracking companies (Petre, 2015; Nelson, 2018).
- Increased role of audience engagement in news gate-keeping process (Lee et al, 2014; Nelson & Webster, 2016; Dessart, Veloutsou & Morgan-Thomas, 2016; Hanusch, 2017).
- Why journalists use metrics (Petre, 2015; Tandoc, 2015; Whipple & Shermak, 2018).
- Theoretical models to explain journalists and metrics relationship (Usher, 2013; Tandoc, 2015; Nelson & Webster, 2016; Dessart et al, 2016; Hanusch, 2017, Wang, 2018).
- Models to define user engagement (Kormelink & Meijer, 2018; Dessart et al, 2016; Hanusch, 2017; Nelson, 2018).

Although each study explicitly focused on two or three key research questions, most of the studied

implicitly touch upon at least two or three questions within the key sub-topics with some nuanced variation.

The scholars in these studies used the following key theoretical frameworks in their examination of the web metrics vs. user engagement dynamic: a) Uses and Gratifications Theory; b) Gate-keeping Theory; c) Social Construction of Technology, and d) Field Theory.

Each study addresses a specific gap (RQ2) in the bigger picture of relationship between news producers and news consumers in exploring the audience engagement recorded by web metrics. The scholars covered important range of research questions starting from how web metrics influences newsroom production and knowledge creation (Usher, 2013); impact of metrics on journalists' emotions and morale; effects of metrics data on journalists' self-validation (Petre, 2015). While some studies aimed to test if there is an impact of metrics on newsroom decision-making, Lee, Lewis and Powers looked specifically at how metrics affect news placement (Lee et al, 2014). Moreover, their findings suggested that audience clicks affected the journalists' decision-making more than journalists affected audience's decision-making in the «who influences whom» web metrics debate.

Tandoc developed this scholarly conversation to another level by exploring the factors that affect how journalists use metrics. He explored how perception of competition, thinking of audiences as a capital, and frequency of analytics use affected the decisions journalists made in using or rejecting web metrics (Tandoc, 2015). Alternatively, Usher explored a unique newsroom in the example of Al-Jazeera, to investigate the impact of news metric on journalists in newsrooms that did not have any economic constraints. She found that institutional culture plays a vital role in shaping how journalists use and understand metrics (Usher, 2013).

Nelson and Webster explored the impact of metrics from the viewpoint of Market Information Regimes, suggesting that certain political challenges control the dynamics of how metrics are operate in today's news market. They suggested that those challenges inevitably divide actors into «winners and losers» game. (Nelson & Webster, 2016). They paid much attention to the questions of what metrics measure or prefer to measure: size of the audience or time the audience spends with news content. The scholars noted that «news engaged time» is harder to measure because of various types of news content; therefore, they predicted that the measures of audience size and composition will dominate in the years to come (Nelson & Webster, 2016, p. 13).

Nelson also investigated how employees of the audience tracking companies understand, interpret and use metrics data to persuade news editors to subscribe to their services (Nelson, 2018). His finding suggest that finding the right pitch to address the journalistic values helps those companies to entice news producers to use more metrics in measuring audience engagement with news.

Finally, the scholars seem to agree with some variation that web metrics alone is a flawed instrument in measuring news engagement. A few studies explore audience engagement via investigating specific contexts and elements of news contents. Thomson and Greenwood looked at how news photographs promote the engagement in Social media environment (Thomson & Greenwood, 2017). Whereas Incollingo (2018) explored how mobile users engage with digital news. Her study introduced new layers of analysis to the overall picture of user engagement.

The third research question that guided my paper was to outline key recommendations that scholars have suggested using when exploring the relationship between web metrics and audience engagement in scholarly discourse.

Below, I outline these key recommendations:

- Pay attention to institutional culture, because it plays important role in shaping how journalists use and understand metrics (Usher, 2013);

- Pay attention to context, strategy and guidance given to journalists when measuring the impact of metrics on newsroom decision-making (Petre, 2015; Usher, 2013);

- Finding the balance between editorial credibility and audience appetites is the key (Usher, 2013);

- Keep in mind that editors and journalists appear to be more influenced by the audience demands than the other way round (Lee et al, 2014);

- Design and explore research studies linking qualitative and quantitative methods (Lee et al, 2014);

- Metrics are more likely to become an integral part of news judgment process (Nelson & Webster, 2016);

- Find ways to combine self-reports of journalists' perceptions and behavior with quantitative methods that reveal sharper and detailed longitudinal outcomes of the relationship between news user behaviors and journalistic decisions (Lee et al, 2014)

- Keep in mind that audience tracking companies have their own values, branding strategies and objectives; news companies should carefully choose analytics companies; sharing common professional values is a plus (Petre, 2015);

- Not everything in news engagement can or should be counted (Petre, 2015);

- News editors and reporters understand, interpret and use metrics differently;

- Using differentiation of levels of influence (individual, organizational and platform-based) is important when measuring the impact of web analytics on journalists (Hanusch, 2017);

- Taking into consideration different levels of audience engagement (emotional, cognitive, behavioral) is important (Dessart et al, 2016; Nelson & Webster, 2016));

- Capturing, identifying, and measuring features of news content (images, videos, headlines, etc.) that generate clicks is an important step in further understanding the user engagement process (Kuiken et al, 2017);

- Clicks are a biased instrument in estimating people's news interests (Kormelink & Meijer, 2018);

- Employees of audience tracking companies are new players in news production process (Nelson, 2018);

Discussion

Overall, explicitly, or implicitly, the scholars in most of the studies, selected for this paper, have admitted that audience clicks influence the journalism field in multiple nuanced ways. Each study explores this influence using either qualitative or quantitative method or combination of both to confirm this subtle but inevitable impact. The scholars attempted to identify the patterns of this influence via looking at specific items like as dependent variables:

- News placement (Lee et al, 2014);

- News selection (Welbers, 2016);

- Frequency of use of web analytics (Tandoc, 2015);

Several scholars in the analyzed studies have emphasized that journalists are aware of values in using web metrics, however, as Welbers and his colleagues note (Welbers et al, 2016), the journalists are either not aware of the impact of the metrics on them or are reluctant to admit its subtle but powerful influence. Usher (2013) noted that journalists used web metrics because: a) they were curious what metrics numbers mean; b) they wanted to see numbers for «personal validation» (Usher, 2013, p.346).

Each study offers a unique alternative standpoint in understanding the politics behind the metrics. Interestingly, Lee et al. found that time-lagged effect of audience clicks on subsequent news placement by journalists was stronger than the inverse (Lee et al. 2014). This new finding means the influence

between the two camps, news producers and news users, is reciprocal, but journalists and editors do not know yet how to initiate, retain, maximize, or direct audience engagement.

Dessart et al. (2016) suggest a good solution by offering a simple conceptual outline. This conceptual framework will add clarity in defining news engagement in each unique news context or platform. Below are these three distinct dimensions of engagement:

- **emotional engagement** (enthusiasm, enjoyment)
- **cognitive** (attention, absorption)
- **behavioral** (sharing, learning, endorsing)

Dessart et al. (2016) emphasized that because «consumers engage and enter relationships with different foci simultaneously» and «concurrently,» the scholars need to consider multiplicity of engagement foci in a specific context.

Most digital audience metrics record only clicks, time spent on a page, number of views per story. These data do not tell much about how exactly the users were engaged: what is not known who is sitting in front of the computer, what exactly they are reading, how much they are interested in the story they are currently watching. All these questions dominate in the current informal scholarly debate. This fact means journalism scholars are actively and constantly searching for appropriate strategies in interpreting the metrics data to help the journalism community to find the solutions. The number of studies within one given year (at least 6 in 2018), scope (variety of diverse research themes) and the salience of this topic within research debates demonstrates high interest and necessity in solving conundrums created by digital audience metrics.

Limitations

This study represents a preliminary exploration of key themes in research trends related to news engagement and audience metrics. Several factors

affected the depth of this review: a) lack of agreement between the scholars on defining «audience engagement» made it challenging to compare the findings in more nuanced, precise, and logical way; b) time constraints limited the number of research questions that I could explore; and c) the scope of this review excluded some interesting and important questions for future investigation.

Conclusions

In this review, I reviewed 15 (fifteen) studies focusing on audience engagement and digital metrics. I identified key themes emerging from these selected studies, explored how each study contributed to the scholarly debate, and outlined the key recommendations that the authors suggested using when investigating this trendy research topic.

Based on my reviewing of the fifteen studies, I developed my recommendations for future research:

- Journalism scholars should develop a structured definition of audience engagement; they need to draw a clear line between the levels of engagement (emotional, cognitive, behavioral);
- Careful approach in measuring and defining the area of engagement is needed; research community must define what engagement they measure (engagement with news topics, engagement with story types, engagement with technology, engagement with news brand, etc.)
- Data analytics companies should develop user-friendly «language» to communicate the dimensions of their digital tools; scholars and journalists should be confident that these digital tools measure what they should measure to render accurate interpretations from these digital data.
- Scholars should experiment using sophisticated research designs to capture and measure today's multi-layered audience engagement; they should explore and find best ways to use metrics for sustaining high standards of journalism in the digital world.

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