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Time Well Spent? Exploring Emotional Engagement with News Through Native Experience Sampling

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ABSTRACT

Audience analytics have become ubiquitous in contemporary newsrooms, yet metrics alone may offer a limited understanding of engagement. In response to calls to complement metrics with alternative methods, this study develops an innovative native experience sampling method (NESM) that simultaneously assesses the behavioral, emotional, and evaluative dimensions of engagement. Using pop-up questionnaires on the websites of Dutch and Belgian news brands NRC, Noordhollands Dagblad, and De Standaard ($N=1,241$), we measured readers' emotional responses and perceptions of worthwhileness as they read an article. Our findings argue that for an article to be considered "Time Well Spent," it must not only be consumed but also felt and valued: it should move readers (provoke an emotional response, whether positive or negative) and be purposeful and rewarding, addressing a distinct user need.

KEYWORDS

Audience engagement; metrics; analytics; worthwhileness; emotion; experience sampling

Introduction

In recent years, the news media have been preoccupied with how to *engage* their audiences. The underlying hope is that improving their relationship with audiences could be the solution to ongoing crises in journalism, such as financial instability, audience distrust, and news avoidance (Cherubini and Nielsen 2016; Nelson 2021). Within journalism studies and practice, the discourse on audience engagement has predominantly centered on audience analytics, software that monitors and collects audience behavior and translates it into quantifiable metrics such as clicks or attention time. Newsroom practices are shaped by the analysis of these metrics (Tandoc 2019; Lamot 2021; Petre 2021), under the presumption that this enables journalists to tailor news content more effectively to audience interests and thereby increase engagement.

However, interpreting audience behavior and inferring motivations is a notoriously fraught process due to the many limitations of audience metrics (Napoli 2011). Audience researchers (Steensen, Ferrer-Conill, and Peters 2020; Costera Meijer and

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Groot Kormelink 2021; Gajardo and Costera Meijer 2023) have critiqued the tendency to equate audience engagement with news to audience metrics, emphasizing the potential oversimplification it entails. Analytics, these scholars argue, narrow engagement down to a primarily behavioral dimension (clicking, spending time), even though affective ('emotional/emodied dimension') and normative dispositions (appreciation) news users have towards news content are equally relevant to news consumption. Therefore, Steensen, Ferrer-Conill, and Peters (2020) have spurred other scholars to acknowledge the limitations posed by audience metrics and augment such data with data obtained through complementary methods:

"It is our hope that the model of audience engagement we have presented in this article can serve as a methodological guideline concerning which relations and dimensions of audience engagement one should consider, and consequently which methods to potentially use, when designing a research project on audience engagement" (p. 1675)

Answering that plea, the first aim of our study is to empirically capture dimensions of engagement beyond behavior. Proposed as an alternative to time spent (i.e., quantity of news consumption), we develop the notion of "time well spent", focused on the quality of the news experience (see also, Lamot and Paulussen, 2024). This phrase was popularized by technology ethicist Tristan Harris to advocate for technology design that respects users' attention (Center for Humane Technology, n.d.). Combining measures of normative (appreciation) and affective (emotions) dispositions, we show when users experience news as worth their time and how this relates to their emotional engagement.

The second aim of our paper is to pilot an innovative 'native experience sampling' method that addresses the limitations of previous methodologies for measuring audience engagement by concurrently assessing the discrepancy between behavior (as operationalized through metrics) and value. Concretely, it does so by presenting users with a brief pop-up questionnaire about their emotional state and sense of worthwhileness immediately after they click on a news article and reach a certain scroll depth. Unique to our approach is that it takes place *via* the infrastructure of the news websites of Dutch newspapers NRC and Noordhollands Dagblad, and the Belgian newspaper De Standaard—hence the term native experience sampling. The data are recorded in the context of users' news consumption immediately after reading the article, thereby increasing ecological validity and reducing bias from retrospective reporting.

Literature Review

In recent years, the audience has come to the fore in discussions within contemporary newsrooms. Profit-driven news media hope that by securing close relationships with audiences, they can increase subscriptions and sales of products and services, helping offset losses in advertising revenue caused by the dominance of large platform companies such as Meta and Google. As a result, growing numbers of news organizations have begun to systematically track who their audiences are and what news particularly interests them—a process described as "the rationalization of audience understanding" (Napoli 2011: 11). These audience data have grown increasingly granular, culminating in audience analytics systems that harvest a range of user actions (e.g., what pages

they click on, how much time they spend on a page, how far they scroll down) and quantify them into metrics (Zamith, 2018). Throughout, these metrics have been mythologized as “unbiased” and “scientific” (Nguyen 2014) and therefore a reliable proxy for engagement (Broersma 2019). News professionals now routinely draw on them to inform their editorial choices and policies (Tandoc 2019; Christin 2020; Petre 2021). For example, studies have shown how metrics are used to determine the prominence of an article on the homepage (Lee, Lewis, and Powers 2014; Zamith, 2018; Lamot and Van Aelst 2020), to pursue ‘better’ headlines (Hagar and Diakopoulos 2019), to expand or follow up on highly popular stories (Tandoc 2014; Welbers et al. 2016), and to advertise articles more across platforms (Lamot 2022; Lamot and Paulussen 2025).

The key problem with audience analytics is that it is highly questionable whether they can grasp a complex concept like engagement in a robust, trustworthy manner. Metrics mostly capture ‘*manifest categories of engagement*’ like behavioral data and quantities, yet are unable to digitally trace more ‘*latent aspects*’ such as the reasoning behind audience behavior (Zamith, 2018; Broersma 2019, p. 2; Ferrucci, Nelson, and Davis 2020). Groot Kormelink and Costera Meijer (2018, 2020) cast further doubt on metrics’ ability to accurately reflect interest, engagement or attention. First, they point to the various cognitive, affective and pragmatic considerations involved in (not) clicking on news, inferred from observing people and asking what clicking and not clicking means to them (Groot Kormelink and Costera Meijer 2018). For example, headlines could be informational enough and therefore not warrant a click or users could click for reasons unrelated to interest such as amusement or annoyance. Second, they argue that the metric time spent does not necessarily reflect the quality of attention paid to news content (Groot Kormelink and Costera Meijer 2020). Ultimately, they conclude that clicking and time spending behavior is susceptible to both a ‘*frequency and a duration fallacy*’, or the misunderstanding that what people use or spend time on the most equals what they appreciate the most or find most important, and vice versa, that what people spend less time on signals its lesser value or importance (Costera Meijer and Groot Kormelink 2021).

Measuring Engagement Beyond Behavior

Multiple studies have sought to transcend the conceptualization of engagement as a predominantly behavioral phenomenon, instead seeking to more comprehensively capture its inherent complexity. Collectively, these studies advocate for a more *audience-centric* understanding of engagement that aligns more closely with the perceived value and *worthwhileness* of news for both individuals and society at large (cf. Schröder 2015). Nelson (2021), for instance, draws the distinction between *reception-* and *production-oriented engagement*. The former measures the effectiveness of journalism by how much time users are willing to devote to content, whereas the latter considers journalism effective when audiences feel included or empowered by the reporting. Furthermore, Steensen, Ferrer-Conill, and Peters (2020) and Gajardo and Costera Meijer (2023) have each introduced heuristic models that reflect the multidimensionality of the phenomenon. Their examinations have identified similar dimensions of audience engagement, going beyond the reductionist conceptualization

of clicking (i.e., the behavioral dimension) to include emotional/embodied, normative, and spatiotemporal dimensions.

However, both studies have remained conceptual, likely because measuring these additional dimensions is inherently difficult. While we recognize it may be impossible to capture all facets of engagement within a single design (Steensen, Ferrer-Conill, and Peters 2020), the present study deliberately operationalizes the emotional dimension of audience engagement and distinguishes between behavioral and felt engagement. Despite growing academic recognition of users' emotional experience in relation to journalism (Peters 2011; Lecheler 2020; Wahl-Jorgensen 2020; Swart et al. 2022), news media have yet to systematically account for the emotional dimensions of user engagement. This may be due to the perception that emotion is irrevocably tied to sensationalism and tabloidization (Wahl-Jorgensen 2020). A second explanation is that qualitative analytics systems have proven difficult to integrate into journalistic routines (Blanchett 2021). The native experience sampling developed for this study, detailed in the methods section, may help overcome this challenge.

Time Well Spent

As an alternative to the behavior-focused metric of time spent, we propose *Time Well Spent* (TWS) to capture users' subjective experience of news. We conceptualize TWS as comprising three dimensions: a quantitative rating (a scale-based judgment of whether the article was worth the user's time), a substantive rationale (the reason it was or was not worth the user's time), and an emotional response (the affective state associated with consuming the article). Accordingly, by incorporating both quantitative and qualitative measures, TWS enables comparisons within and across users and articles and supports a deeper understanding of users' emotional engagement with news.

The quantitative judgment of TWS draws on Schrøder and Steeg Larsen (2010) notion of "perceived worthwhileness," defined as "individuals' subjective, implicit or explicit assessment of whether the medium in question is worth their while" (2010: 526). The substantive rationale draws on research into the types of value users derive from journalism, including the notion of "valuable journalism," condensed into key experiences "learning something new," "getting recognition," and "increasing mutual understanding" (Costera Meijer 2022: 241). It is also inspired by the "User Needs" model, originally introduced by the BBC based on extensive audience research and now implemented in newsrooms across the world to help tackle challenges like news avoidance and low engagement (Fletcher 2024). Its latest adaptation, the User Needs 2.0, consists of eight distinct needs that users seek to have addressed in news (e.g., update me, give me perspective, inspire me, help me, etc.), organized along two axes: know-feel and action-context (Shishkin et al. 2023). Finally, the emotional response component is informed by experience sampling research, which captures participants' real-time affective states in the context of media consumption (e.g., Verbeij et al. 2022).

Seeking to capture these components, we pursue the following research question:

RQ: Which factors shape news users' perceptions of online news as 'Time Well Spent'?

Methodology

To answer this research question and obtain a better understanding of the emotional dimension of engagement, which purely behavioral metrics cannot measure, we adopt a new and innovative method, which we coin “*native experience sampling method*” (NESM). We define our approach as a technological update of the mobile experience sampling method (MESM) commonly used in psychology, which collects data through in-situ self-reports by questioning news consumers at different points throughout the day (Van Berkel, Ferreira, and Kostakos 2018). While MESM typically uses mobile notifications to prompt users, NESM is designed to be natively embedded within the interface of a news platform, triggering feedback requests in direct response to natural user behavior—in this case, an article click followed by a minimum scroll depth. By collecting data *in the moment within the news media ecosystem*, NESM captures real-time thoughts, emotions, and appreciation, making it a more authentic reflection of the user experience than results obtained through traditional survey research.

Over a one-week period in November 2024, participants were prompted daily to complete short surveys that appeared in-stream on selected articles, blending into the surrounding news content of the news apps or browsers of our news media partners, *Noordhollands Dagblad* (NHD), *NRC*, and *De Standaard* (DS). All three news organizations operate under the umbrella of publisher *Mediahuis*, an international media organization operating across Belgium, the Netherlands, Germany, and Ireland, and a dominant player in both countries' markets. As *Mediahuis* develops editorial strategies and technologies across its portfolio, insights from these newsrooms are relevant beyond individual outlets and can inform organization-wide practices regarding its approach to audience metrics.

In addition, the selected outlets represent different segments of the news market. *De Standaard* and *NRC* are leading national newspapers in their countries. *De Standaard* is widely recognized as ‘*the largest quality newspaper in Flanders*’, reaching approximately 600,000 daily readers¹. *NRC* is the second-largest upmarket newspaper in the Netherlands, with a daily readership of approximately 427,000. *Noordhollands Dagblad* is one of the largest regional news outlets in the Netherlands, with an average daily reach of around 257,000 readers². Together, these outlets enable meaningful comparison across national and regional news while operating in a similar technological and organizational context.

Procedure and Participants

The survey was conducted on a selection of articles ($N=40$), rather than on all possible articles within a given time slot. These articles were handpicked and monitored by our newsroom partners based on specific criteria, such as the time and effort journalists invested. Because this workflow required editorial coordination and manual tracking, the number of eligible articles was necessarily limited. The article corpus consisted of 18 articles from *DS*, 12 from *NHD*, and 10 from *NRC*. This selection allowed the project partners at the participating newspapers to gain more targeted insights

into how audiences perceive specific types of articles and to optimize the value of audience feedback.

For this reason, articles were selected based on three parameters: news genre, tone, and expected user needs. A full list of articles and their inclusion criteria is available in the Appendix. To curate the article sample, the experiment ran over several days, during which, in collaboration with the editorial staff, approximately two newly published articles were selected each day for inclusion in the survey. In addition, the project partners at the participating newspapers indicated which emotion they expected each article to evoke in readers, allowing us to assess whether their expectations aligned with the audience's actual emotional responses. All article characteristics were manually tagged by our newsroom partners and served as independent variables in our analysis. This enabled us to examine associations between article characteristics and our dependent variables:

News genre. The pop-up survey was triggered only in articles that required significant journalistic effort, rather than in breaking-news pieces repurposed from press agencies. Newsroom partners selected and tagged each article as either (1) *a feature story*, (2) *an interview*, or (3) *a background article*.

News tone. Newsroom partners rated the tone of each article on the following scale: (0) *light or lighthearted*, (1) *serious or heavy*.

News intent captures the article's primary intention, as coded by the newsroom partners. Articles with the intent to *move* (0) aim to evoke emotion, inspire, amuse, or foster connection with the reader. In contrast, articles with the intent to *inform* (1) aim to provide context, perspective, or educate the reader. These binary categories link up with the two axes of the User Needs model 2.0, developed by Shishkin and SmartOcto.

Expected emotion. For each included article, newsroom partners indicated the emotional response they expected the article to elicit. They selected from the following emoji-labeled responses: 😊 Hopeful, 😊 Inspired, 😊 Happy, 😊 Neutral, 😞 Disturbed/Upset, Angry, 😞 Sad, 😞 Disappointed, 😲 Surprised.

The survey was conducted using Hotjar (<https://www.hotjar.com/>), a common tool for online surveys. It appeared after a reader scrolled halfway down the article page and included information about why it was run. All selected articles were behind a paywall, so most readers who encountered the survey were paying subscribers. Because most article visits occur within the first 24 h after publication, the newsroom partners made the questionnaire available only during this initial period. As a result, response counts varied across articles. Across the full sample, the minimum number of responses was $n=1$, and the maximum was $n=165$. In total, 1,541 respondents participated in the NESM. After cleaning the data to remove responses with missing values on key measures, we retained a dataset of 1,241 valid responses: $n=66$ for NHD, $n=637$ for DS, and $n=538$ for NRC. We did not collect detailed personal data, although participants could optionally provide their email address and age to be contacted for a follow-up interview in a spin-off project ($n=656$). Among those who provided their age, the average was 60.64 years ($SD = 14.45$), ranging from 16 to 96 years.

Questionnaire and Measurements

The native experience sampling questionnaire was designed to measure the following constructs:

Perceived worthwhileness. Participants were asked to indicate whether they found the article 'worth their time', using a 5-point Likert scale ranging from "Not worthwhile" (1), "Hardly worthwhile" (2), "Neutral" (3), "Somewhat worthwhile" (4) to "Worthwhile" (5).

Reported emotion. Designed to identify the types of emotions news users felt while engaging with the article, the second question asked participants to select from the same set of emoji-labeled options as the industry partners: 😊 Hopeful, 🌟 Inspired, 😄 Happy, 😐 Neutral, 😞 Disturbed/Upset, 😡 Angry, 😢 Sad, 😞 Disappointed, 😲 Surprised. This design loosely echoes the "Emo-Barometer" in the concept news app Norwegian students Kaya Maraz and Yahang Cheng developed for their diploma project at NRK (Baekdal 2021).

Third, the questionnaire asked participants to provide *open-ended responses* explaining what made the article worth their time and what triggered their affective response. These open-ended responses ($n = 1252$) underwent thematic analysis (Braun and Clarke, 2006). In the first round of analysis, the first author inductively coded all responses related to articles rated *worthwhile*, and the second author coded those related to articles rated *not worthwhile*. Next, both researchers compared their codes and jointly identified three recurring themes in the data: *user needs*, *journalistic approach*, and *form/content*. After re-checking the datasets, these three themes were confirmed to cover all open-ended responses.

To analyze the quantitative responses, we conducted multilevel regression analyses with random intercepts in R. *Perceived Worthwhileness* was modeled as the dependent variable, whereas the article-level characteristics tagged by the newsroom partners served as independent variables. This approach is most suitable because multiple users evaluated the same news items, resulting in users' responses being nested within articles. The inclusion of random intercepts at the article level accounts for this clustering of responses and allows baseline evaluations of worthwhileness to vary systematically across articles. We sequentially estimated three multilevel models: Model I included article-level characteristics to examine whether differences in perceived worthwhileness could be attributed to properties of the articles themselves. Model II added respondents' emotional experience to assess whether it accounted for additional variance beyond article characteristics. Model III finally included respondent-level characteristics (e.g., age, device) as control variables.

Ethical Considerations

Ethical approval was obtained from the Research Ethics Committee of the Vrije Universiteit Amsterdam (reference: ETCO0088). The researchers and media partners also signed a joint controller's agreement that outlined their data-processing responsibilities and permitted the use of aggregated, anonymized data for scientific

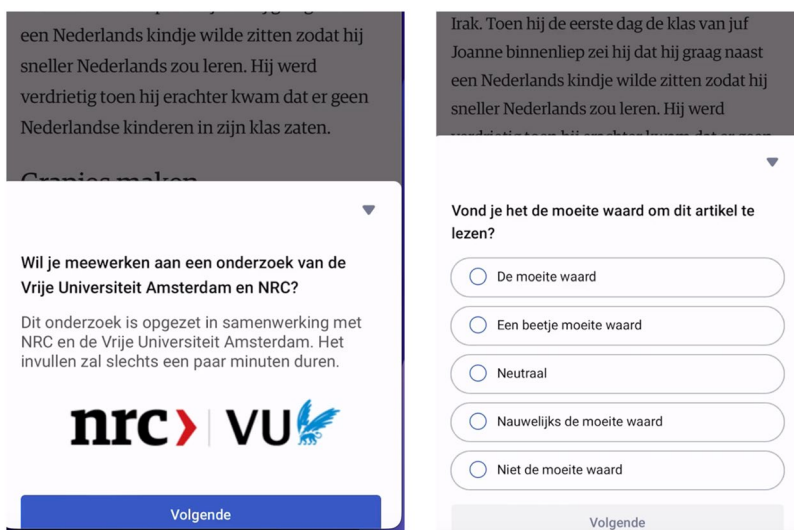
publication. Media partners were involved only in facilitating data collection and not in data analysis or interpretation, which were conducted independently by the researchers. Researchers held occasional meetings with *Mediahuis* staff to discuss the project's design and progress. Following publication, findings will be presented to participating editors-in-chief and other stakeholders.

Results

This study used NESM to clarify the experience of *Time Well Spent*. Although behavioral engagement is implicit (i.e., all respondents have clicked and scrolled through the article), we focus on how emotions shape news users' contemporaneous appreciation of news, accounting for the emotional dimension of audience engagement. The results section combines quantitative and qualitative insights to explore when and why news users perceive their engagement as time well spent - or not.

Before we estimate the models, we present descriptive patterns in the data. Overall, respondents considered their experience with news worthwhile, as it is notably skewed toward more positive evaluations. More news users appreciated their engagement with articles in national, upmarket newspapers NRC ($M=4.57$, $SD=0.78$) and DS ($M=4.71$; $SD=0.81$) than with the regional, mid-market newspaper NHD ($M=3.89$, $SD=1.39$). Emotions also varied widely across respondents, with "Neutrality" the most commonly reported emotion (28%), followed by Upset/Disturbed (18%), Inspired (13%), Hopeful (11%), Surprise (8%), Disappointed (7%), Other (6%), Sad (4%), Happy (3%), and Angry (3%).

When emotions are examined in relation to worthwhileness, a rather counterintuitive image of emotional engagement emerges in [Figure 1](#). Generally, the more negatively valenced emotion, "Disturbed/Upset," was most often accompanied by the highest worthwhileness, whereas one would intuitively expect that articles eliciting



een Nederlands kindje wilde zitten zodat hij sneller Nederlands zou leren. Hij werd verdrietig toen hij erachter kwam dat er geen Nederlandse kinderen in zijn klas zaten.

Crucia maken

Wil je meewerken aan een onderzoek van de Vrije Universiteit Amsterdam en NRC?

Dit onderzoek is opgezet in samenwerking met NRC en de Vrije Universiteit Amsterdam. Het invullen zal slechts een paar minuten duren.

nrc | **VU**

Volgende

Irak. Toen hij de eerste dag de klas van juf Joanne binnenliep zei hij dat hij graag naast een Nederlands kindje wilde zitten zodat hij sneller Nederlands zou leren. Hij werd verdrietig toen hij erachter kwam dat er geen Nederlandse kinderen in zijn klas zaten.

Vond je het de moeite waard om dit artikel te lezen?

☐ De moeite waard

☐ Een beetje moeite waard

☐ Neutraal

☐ Nauwelijks de moeite waard

☐ Niet de moeite waard

Volgende

Figure 1. Screenshots from the native experience sampling.

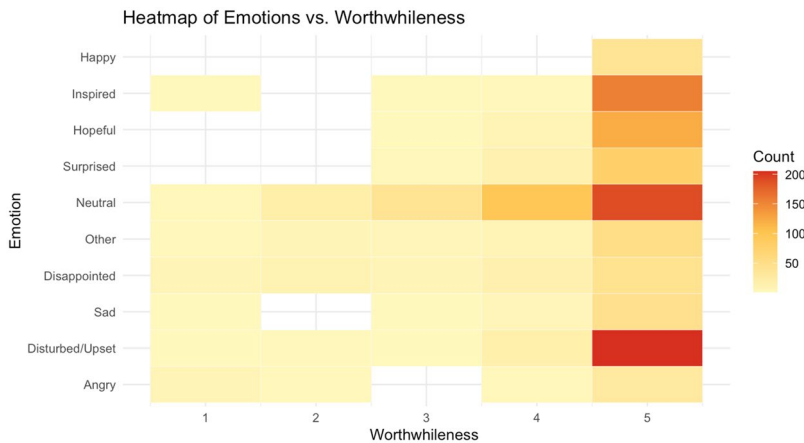


Figure 2. Heatmap visualizing relations between user emotions and time well spent. Warmer tones indicate higher absolute counts.

more positively valenced emotions would be perceived as more worthwhile. This was, for instance, the case with emotions such as inspiration or hope.

Newsroom partners also anticipated which emotions each article would elicit. A dummy variable was created to assess the mismatch between the reported emotion (by the news user) and the expected emotion (by the newsroom), where 0 indicates a correctly anticipated emotional response and 1 indicates an incorrect assessment. Interestingly, 'Inspired' ($M=0.99$) and basal emotions such as Sad ($M=0.98$) and Angry ($M=0.95$) were often misjudged, whereas emotions like Surprise ($M=0.56$), Disappointed ($M=0.61$), and Upset/Disturbed ($M=0.67$) were more often correctly predicted.

Next, we created a heatmap showing average worthwhileness scores across combinations of reported and expected emotions. Figure 2 allows us to explore which emotions are more frequently confused with one another (indicated by the size of the squares) and to identify patterns in which (mis)alignment between reported and expected emotion corresponds to higher or lower worthwhileness (indicated by color, with shades of green = worthwhileness and shades of red = lower worthwhileness). As shown in the figure, the cells in the upper triangle above the diagonal, which indicate alignment between reported and expected emotion, are larger and darker green than those in the lower triangle. This shows that user responses often trend toward more positive emotions than originally expected by the newsroom partners. Additionally, these instances are associated with relatively high worthwhileness, whereas cases in which a negative emotion is reported while a positive emotion was expected tend to correspond with lower worthwhileness. For example, combinations in which users reported feeling angry while newsroom partners expected them to feel surprised, or in which users reported feeling sad while a happy response was anticipated, had the lowest worthwhileness (Figure 3).

The next section turns to the explanatory analyses, which aim to test how emotions, article-level characteristics and individual-level differences (age, device) predict news users' *perceived worthwhileness* (see Table 1). The findings are then organized around two central themes: *Time Well Spent* and *Time Not Well Spent*. We begin each

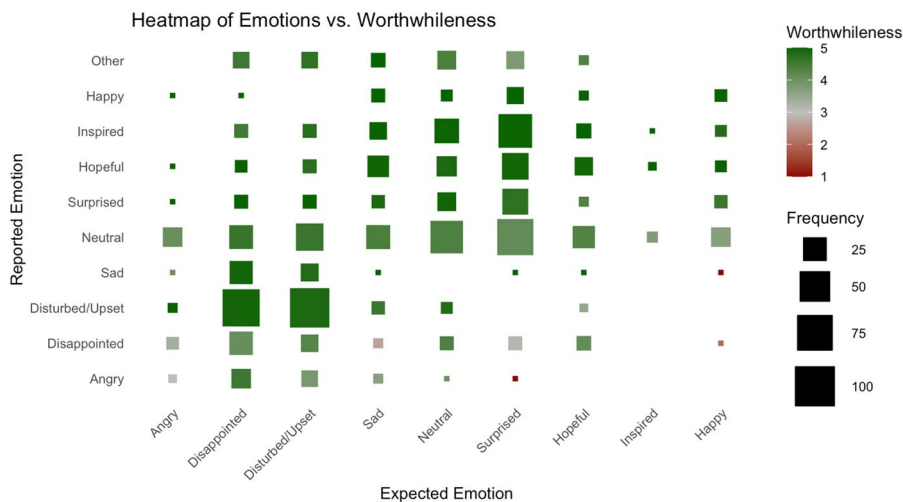


Figure 3. Heatmap of Time Well spent by expected versus reported emotion

section with the results of the multi-level regression. We subsequently draw from participants' open-ended responses to contextualize these quantitative patterns, providing better insight into the *lived* experiences that underpin both positive and negative assessments of time spent with an article.

Time Well Spent

The first model in Table 1 established the baseline effects of article characteristics on worthwhileness. Surprisingly, none of the article-level features showed a significant association with the dependent variable, suggesting that worthwhileness appears to be unaffected by an article's genre, intent, or tone. However, both quality newspapers showed a positive and significant association with worthwhileness. News users were thus more likely to consider articles from NRC ($\beta=0.79$, $p < .01$) and DS ($\beta=0.64$, $p < .01$) worthwhile than those from NHD.

Next, Model II introduced users' reported emotions. The lower AIC indicated that emotional engagement added explanatory power for users' experience. Moreover, the drop in between-article variance from Model I to Model II suggested that emotions are a major driver of perceived value and explain why some articles differ in their worthwhileness scores. Feeling 'happy' ($\beta=0.72$, $p < .001$), 'inspired' ($\beta=0.66$, $p < .001$), 'hopeful' ($\beta=0.54$, $p < .001$), and 'surprised' ($\beta=0.44$, $p < .001$) were all associated with higher worthwhileness ratings than the reference category ('Neutral'). The most striking finding was that even more negatively valenced emotions, such as 'sad' ($\beta=0.27$, $p < .05$) and 'disturbed/upset' ($\beta=0.27$, $p < .001$), were significantly associated with higher perceived worthwhileness. Importantly, news brands continued to exert robust effects on perceived worthwhileness, which could signal that perceptions or loyalties toward news outlets contribute uniquely to whether news users consider their time well spent, beyond the emotional impact of news. Article characteristics like news intent and tone, on the other hand, only became significant after accounting for users' emotional responses, whereas this effect was previously obscured. Serious

Table 1. Multilevel regression with random intercept of worthwhileness.

	Model I		Model II		Model III	
Fixed effects	Coefficient	SE	Coefficient	SE	Coefficient	SE
Intercept	3.74***	0.24	3.55***	0.19	3.45***	0.31
Article characteristics						
News intent (informing)	0.16	0.15	0.26*	0.12	0.23	0.16
News tone (serious)	0.22	0.15	0.27*	0.12	0.23	0.15
NRC (vs. NHD)	0.79**	0.21	0.62**	0.17	0.66*	0.28
De Standaard (vs. NHD)	0.64**	0.19	0.50**	0.15	0.64*	0.25
Feature (vs. background)	−0.16	0.19	−0.11	0.15	0.07	0.20
Interview (vs. background)	−0.13	0.20	−0.12	0.15	−0.02	0.20
Emotional engagement						
Happy			0.72***	0.13	0.69***	0.15
Inspired			0.66***	0.07	0.56***	0.09
Hopeful			0.54***	0.08	0.49***	0.10
Angry			−0.38**	0.13	−0.03	0.15
Disturbed/Upset			0.27***	0.08	0.40***	0.10
Sad			0.27*	0.12	0.43**	0.14
Disappointed			−0.49***	0.10	−0.25	0.13
Surprised			0.44***	0.09	0.50***	0.11
Other			0.01	0.10	0.29	0.12
News user characteristics						
Desktop (vs. phone)					0.03	0.13
Tablet (vs. phone)					−0.02	0.16
Age					0.00	0.00
Random effects						
Source URL	0.1257		0.06641		0.1069	
(between-article variance explained)						
Residual (within article-variance explained)	0.6462		0.56429		0.4282	
Akaike Information Criterion (AIC)	3064.11		2921.67		1426.09	
N	1241		1241		656	
Number of articles	40		40		35	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

articles ($\beta = 0.27$, $p < .05$) and articles meant to 'inform' were associated with higher worthwhileness than light-hearted articles and those meant to 'move'. Emotional engagement might thus carry the effects of these article characteristics onto worthwhileness.

Lastly, Model III further included news user characteristics, such as device type and age, to control for individual differences and context. Although the AIC indicates that this model provides the best fit for our data, this is likely due to the reduced N caused by missing demographic data, since users were only optionally asked to provide personal data. However, neither variable was significant. News brands and emotional engagement remained strong and consistent predictors of worthwhileness.

Purely quantitative results, much like behavioral analytics, lack the capacity to capture how and why news users experience certain articles as time well spent. Turning to the open-ended responses of users who indicated that an article was worth their while, we observe several patterns that illuminate the nuances of emotional engagement. These nuances can be broadly grouped into three thematic categories: *user needs*, *journalistic approach*, and *form/content*.

User Needs

First, users cited specific needs being met as the main reason they considered their news experience worthwhile. Through an abductive analysis of these responses, we linked their expressed reasons to several established categories in the User Needs Model 2.0 and to the three key experiences of Valuable Journalism (Costera Meijer 2022; Shishkin et al. 2023). However, additional needs also surfaced empirically that were not yet fully captured by those existing frameworks. In the first place, many participants reported that their basic urge for 'knowledge' and 'understanding' was met (Fletcher 2024). Concretely, we distinguish the following user needs: '*update me*', '*give me a new perspective*', '*teach me something new*', and '*help me*'.

Participants indicated that they value news that informs them about what has happened, whether in the world, on a specific topic, or in their own region, and that they like to stay up to date. For instance, these participants commented:

"I find it interesting to read reviews of concerts, events, and films that I'll probably never attend anyway. It helps me stay somewhat in the loop" (DS)

One of the most valued aspects of news was gaining a new perspective. They appreciated news that approached *familiar* issues from a *fresh or unexpected* angle, which forced them to rethink their own ideas and perspectives. News users spoke in terms of "*a different view*," "*a new light*," or "*the two sides of the story*" that broadened their horizons and enlightened them:

"Because it offers some new perspectives (hypotheses, research findings, and/or opinions) on a topic I find interesting (namely digitalization/robotization). This allows me to sharpen my own insights and opinions." (NRC)

This aligns with another distinct need: to learn something from the news (Costera Meijer 2022). Unlike '*give me perspective*', which involves reframing what a user already knows (*how* something is understood), '*teach me something new*' focuses on gaining entirely new knowledge about an unknown subject (*what* is known). As users put it:

"This article made me aware of things I hadn't considered before, and because of that, I'll definitely watch this program differently next time. Interesting!" (DS)

Next, news users considered it worthwhile when an article provided them with information they could use to navigate their day-to-day life or personal struggles, a value rooted in the tradition of service journalism ('*Help me*', Shishkin et al. 2023):

"I'm in a period where I'm changing jobs, and possibly even switching sectors. So that's why it was definitely worthwhile to read about the relationship between work and happiness (inner peace)." (NRC)

"To pay close attention to how that [scam] happened, so it doesn't happen to me." (NHD)

Two additional knowledge-based user needs emerged inductively from our qualitative analysis: "*Prove me wrong*" and "*Prove me right*". *Prove me wrong* involves instances in which news users appreciated having their existing assumptions challenged by the article. They were willing to engage with some '*inconvenient truths*', sometimes to their own discomfort, causing emotional friction, and accept that their own assumptions were incorrect or incomplete. Whereas the previously identified

need 'give me perspective' tends to add nuance, 'prove me wrong' generates dissonance. One example is the article *"In the Alps, the skis leave behind a landscape full of scars"* (DS, November 23, 2024), which readers described as an 'eye-opener' because it forced them to confront how their personal enjoyment comes with environmental cost:

"The relativity of experiencing nature, relaxation, and presenting oneself as sporty/healthy is thrown in our face here in a painful yet eye-opening way. (...) The green environmental mindset also hit hard for many 'unknowing' people. That's why this is a fascinating article that sheds light on things we're not really aware of, asks questions, and is confrontational without being preachy" (DS)

In contrast, users also appreciated when articles 'proved them right', confirming their existing views or opinions. This led to feelings of validation: it felt as though the article finally provided them with an argument to support what they had intuitively felt was true, evoking a subtle *"I told you so"* satisfaction. Three participants described how an article affirmed their beliefs or strengthened their conviction:

"What I've more or less known for a long time is now thoroughly confirmed! Really happy with this article!" (DS)

"It describes a view on life that I share." (NRC)

"It once again confirms my opinion about the pro-Palestinian activists. It's truly a bunch of riffraff." (NHD)

Beyond knowledge-based needs, equally important feeling-based needs also surfaced (Shishkin et al. 2023; Fletcher 2024). Some reiterated user needs like 'divert me' or two key experiences of Valuable Journalism (c.f. 'increasing mutual understanding' and 'getting recognition'), whereas others ('move me') were inferred from and deepened by our own analysis. Regarding the user need of 'divert me', participants described articles as worthwhile because they offered *"Delightful relaxation"* (DS). This contrasts with users' other desire to be *moved* or emotionally touched by the news, in which the emotional impact itself makes the article feel meaningful. Surprisingly, and corroborating the results of our quantitative analysis, participants frequently described articles as worthwhile even when they elicited strong negative emotions such as concern, anxiety, or sadness:

"Heart-wrenching story." (NHD)

"Because the interviewee speaks very personally about issues that concern her. Because the issues she talks about also move me." (NRC)

'Acknowledge me' captures the satisfaction of being acknowledged in a news article or of recognizing others' experiences as similar to one's own ('getting recognition', Costera Meijer 2022). In contrast with *"prove me right,"* which offers cognitive confirmation to the news user about an article's substance ("Finally, someone said what I've been thinking"), *"acknowledge me"* fosters affirmation of one's identity or self ("I'm not the only one who feels this way"). When discussing this need, participants tended to begin their comments with phrases like *"I am/I know someone"* or *"I myself have"*:

"Absolutely interesting! I also found it personally a very painful experience (which I had severely underestimated). Glad to hear that I'm not alone and that this 'problem' is getting attention." (DS)

"For someone who knows a person with ADHD, the article gives a good impression of what it's like to have ADHD. I recognize things in it that I can relate to." (NRC)

The last user need served by worthwhile articles is labeled 'Make me see it through someone else's eyes'. Participants valued articles that helped them grasp another person's lived reality ('Let me feel what it is like to be you'), even when this conflicted with the reader's own experiences or opinions. This need is fueled by curiosity and surprise at those who are unlike oneself and can foster empathy for perspectives that are hostile or unfamiliar. Participants reflected:

"Interesting to get a glimpse into the thoughts and experiences of someone who is completely unlike yourself." (NRC)

"I had an IUD inserted myself years ago, because I couldn't tolerate the pill. The insertion was completely painless; I barely felt it. Same for the removal: painless. So I was very surprised and curious as to why it's so painful for so many other women." (DS)

Journalistic Approach

While user needs were most prominent in the substantive rationale, participants also highlighted several aspects of the journalistic approach that made the article feel worthwhile. These align with widely held journalistic norms, such as (1) *accuracy/factualness*, (2) *objectivity/neutrality*, and (3) a *critical stance*. Regarding accuracy, users cited *"the facts and numbers given"* (NRC) or the *"correct depiction of the situation"* (DS) as reasons. Objectivity/neutrality, on the other hand, was more about users' perception that a newspaper could keep personal (political) opinions from seeping into the article. What is striking here is that praise for objectivity/neutrality tended to come from more critical readers, while simultaneously containing implicit accusations of bias:

"A neutral portrayal of BDW [Bart De Wever, Prime Minister]... you don't often come across that in DS."

"The tone is different from what we've seen in NRC in recent years. Even the news sections of the paper are purely activist nowadays."

In the substantive rationale, we could also unpack several elements of constructive and solutions-oriented journalism (McIntyre 2015). For instance, one article was particularly well received by news users because it deviated positively from typical coverage of the European car industry, which normally focuses on economic hardships in the sector:

"Interesting reporting on the car brand Renault, which continued working in the shadow of other automakers for years. A surprising comeback (...) It's actually a hopeful piece of news." (DS)

Other users alluded to elements of *contextual depth* and *forward-looking, solutions-oriented perspectives* in reporting, either as aspects they appreciated or as ways the article could be made even more meaningful:

"I like it because it goes just deep enough in providing background and details. Nowadays, there's far too much 'news' that only delivers headlines without any context." (DS)

The article supports, with facts, what we've been seeing for years as (summer) tourists in the Alps. So it's interesting and familiar. Now, let's hope that in a few years there will be a follow-up article about nature recovering! (DS)

Form/Content

To a lesser extent, the form or content of the article itself was also cited as a criterion for judging the worthwhileness of their news experience. In terms of content, some articles were deemed worthwhile purely because the topics they addressed were of "utmost importance," serving the "public interest" (e.g., climate change, geopolitical tensions, ...). Two news values, or intrinsic characteristics news users ascribe to an event, came to the forefront as making an article worthwhile: (1) *originality/previous underexposure* and (2) *proximity*. With regard to the first, news users spoke about "news in the margins" (DS), or subjects that "rarely receive coverage in the press" or are "non-everyday topics" (both NRC). The latter is prompted by either geographical ("I'm interested in what's happening in the province north of Amsterdam" (NHD)) or cultural closeness ("The economy, and especially the Belgian economy, is important. It's nice to read about what our fellow Belgians are capable of. That deserves more attention" (DS)) to the subject of the article.

In terms of style, first and foremost, the importance of a carefully crafted headline stood out ("The article lived up to the expectations set by the headline", "More than just the headline. Sufficiently substantiated" (both DS)). Optimizing for click-through rates could therefore backfire if the content fails to deliver on the expectations set by the headline ("More 'fragrant' because of the title; the content is actually quite alright." (NRC)). Next, some news users pointed out that they particularly valued a *human-interest framing*, in which an article focuses on personal or private circumstances and individual exemplars (Otto, Glogger, and Boukes 2017):

"Because I'm interested in ADHD and ADD and similar conditions. The human story speaks to me more than scientific analyses." (NRC)

The experience of the lonesome person really comes through strongly in this article." (NHD)

Lastly, additional formal features discussed by news users included accessibility, which respondents associated with simpler language and shorter formats ("Short and concise analysis, understandable language." (DS)).

Time Not Well Spent

This section describes predictors that either do not significantly influence or negatively affect perceptions of TWS. As shown in Model II of Table 1, among emotional responses, only two emotions, disappointment ($\beta = -0.49$, $p < .001$) and anger ($\beta = -0.38$, $p < .01$), showed a strong negative association with perceived TWS. However, this negative association disappeared in Model III after we included user characteristics such as device and age. This suggests that the original effects of anger and disappointment are sensitive to subtle differences in users' contexts, even though those characteristics do not exert a strong effect on their own.

Regarding article characteristics, we can infer from the previous section that light-hearted articles intended to move users are indirectly associated with lower TWS than serious articles and articles intended to inform. Furthermore, no significant differences were found among news genres, such as interviews and feature pieces. Although interviews and feature pieces were somewhat more likely to reduce perceptions of TWS than background stories across all models, the results were not statistically significant. Lastly, *NHD* consistently received lower TWS scores than its quality counterparts.

We also examined the open-ended responses to explore why engagement with certain news articles was perceived as not worth users' time. The observed patterns mirror the thematic categories in the analysis of articles considered TWS, although additional sub-themes were identified.

User Needs

While user needs were not as dominant in users' reasons for considering articles *not* worth their while, they were nonetheless invoked directly at times. Most notably, one user explicitly referenced both knowledge-based and feeling-based needs:

"I read something that didn't teach me anything/didn't evoke any emotions/didn't make me experience self-insight or recognition." (NRC)

Journalistic Approach

By contrast, most of the explanations for not considering articles worthwhile centered on the journalistic approach. First, it is worth noting that "accuracy/factualness"—often cited as making an article worthwhile—was never mentioned in negative terms. Rather than the underlying facts being inaccurate, articles were criticized for bias, i.e., a lack of objectivity or neutrality. This was expressed in general terms ("very one-sided" (DS), "not very neutral" (DS)) and also in terms of (perceived) political bias:

"Not a single critical question, the energy island completely ignored, unaffordable energy prices, unprofitable heat pumps... nothing. Just a publicity interview. Then again, we didn't expect anything else from the party newspaper of @groen." (DS)

"Typically woke piece from NRC. These days, NRC almost feels like an activist Muslim newspaper." (NRC)

Next, mirroring contextuality/thoroughness (an element of constructive journalism) as a positive point, users were critical when articles were perceived as lacking substance:

"Strange to read an article about Syria–Lebanon relations without mentioning the deep entanglement between Assad, Iran, and Hezbollah. If Hezbollah hadn't withdrawn into the Bekaa Valley, there would have been no reason to flee to Syria." (DS)

"Superficial. Just collecting opinions without any real follow-up questions. (NRC)

Relatedly, articles were criticized for lacking a critical perspective:

"I think some more critical questions could have been asked. Because why would it be absurd to use anesthesia for something that many women experience as extremely painful (something

I can personally attest to)? [...] It's often dismissed as absurd, "hysterical," or similar. And yet again, the journalist lets it slide without any critical follow-up. Weak journalism." (DS)

Perceived sensationalism (*"It's actually only sensation" (NHD)*) and lack of journalistic independence (*"This is editorial advertising" (DS)*) were also cited as making articles not worthwhile. Finally, lack of credibility was mentioned, but only in relation to sources within the news, not the articles themselves: *"Belgium and by extension Ms. Van der Straeten [Minister of Energy] are neither particularly credible nor relevant in this matter" (DS).*

Content/Form

In terms of content and form, lack of news value was mentioned most often. While (lack) of context and depth relate to the *journalistic treatment* of the news, lack of news value refers to the topic itself.

"The article has little to no substantive news value" (DS)

Next, certain formal features were criticized, including length/reading time and genre:

"Too long as well. Start the article with a brief summary of the main points, I'd actually like to see that for all articles, that saves reading time." (NRC)

"Personal stories I'm not interested in. You know what you can expect." (NRC)

Some articles were criticized for being too elite: *"self-imporant, egocentric rambling", "ivory tower story" (both NRC).*

Finally, in the case of NHD, the paywall was mentioned a handful of times. To illustrate that an article being worth one's while is not the same as being worth paying for, one user noted: *"I think it's all too expensive. So maybe it's worth the while, but not the costs" (NHD).*

Discussion

To capture a broader spectrum of audience engagement and move beyond the predominantly behavioral paradigm, this article introduces a new "Native Experience Sampling Method." By including measures of emotion and perceived worthwhileness alongside behavioral metrics such as clicks and time spent, we can assess not only *whether* news users spend time with news but also *whether* that time is *meaningfully* spent. We argue that for news to qualify as *"Time Well Spent,"* several preconditions must be met.

First, an emotional response to news may be a vital positive force in enabling TWS with news. Our analysis confirmed that worthwhileness is positively associated with several emotional responses relative to the reference category, in which no emotional response was elicited. Contrary to our expectations, these emotions did not have to be positively valenced, as especially strong negative emotions, such as disturbance or sadness, provided the most worthwhile experience. This is broadly inconsistent with the news avoidance literature (De Bruin et al. 2021; Toff and Nielsen 2022), which typically assumes that news users will eventually disengage from news when it

negatively affects their emotions. Our finding is reassuring in that it makes clear that journalists should not focus solely on appealing to their audiences with positive emotions in response to 'good news'. Neither should they exploit emotions such as outrage to drive up clicks (Shin, DeFelice, and Kim 2025), as our results show that anger and disappointment were the only emotions negatively linked to worthwhileness.

Our findings align with Baekdal's (2021) argument that newsrooms should never cater unilaterally to how people feel about news, because that alone does not capture its value (or *TWS*). Indeed, we demonstrate the difficulty news organizations face in accurately predicting '*the expected reception*' of their articles (Kristensen 2023), even for basic emotions like anger and sadness. These misjudgments—e.g., articles expected to evoke positive emotions but instead eliciting negative emotions—even reduced the worthwhileness of their news experience. Therefore, to develop an editorial strategy that accounts for emotional engagement, newsrooms should adopt a multidimensional measure of emotion. Combining emotions with worthwhileness could offer a more meaningful indicator of how news is both emotionally experienced and valued, and, over time, even help newsrooms better anticipate the emotions their audiences experience.

Capturing users' substantive rationale alongside two quantitative measures of worthwhileness and emotion could offer further insight into what these metrics signify. As Groot Kormelink and Costera Meijer (2018, 2020) have observed, behavioral metrics alone do not necessarily capture news users' interest, attention, or engagement. This was also apparent in our quantitative worthwhileness scores, which, while predominantly high, were not uniformly so. The substantive rationale subsequently helped clarify what made their click worthwhile or their time with news well spent. When users rated their experience as worthwhile, their justifications often referenced a range of satisfied 'needs', including knowledge-based needs like '*give me perspective*' and '*teach me something new*', as well as feeling-based needs such as '*acknowledge me*' or '*give me someone else's perspective*'. These generally align with those identified in the User Needs Model 2.0 (Fletcher 2024; Shishkin et al. 2023) and the three key experiences of Valuable Journalism (Costera Meijer 2022).

On the other hand, when articles were rated as not worthwhile, the primary reason was dissatisfaction with the journalistic approach. Soliciting regular, substantive rationales when users click or spend time with news represents a promising reform toward treating engagement as qualitative and more reciprocal, rather than purely metrics-driven. Yet Blanchett (2021) has noted that efforts to "quantify quality" and contextualize quantitative data at a Norwegian broadcaster ultimately failed, largely because "*no metric or system could determine the worth of a story*" (p. 1551). Similarly, Nelson (2019) argues that, despite growing enthusiasm for engaged journalism practices, the lack of industry consensus on what engagement entails hampers both empirical measurement and the development of any industry-wide metric. While we don't expect to solve these challenges, we believe our notion of Time Well Spent, with its combination of quantitative and qualitative measures, can help news media better understand and engage their audiences.

Conclusion

Recognizing the complexity of audience engagement highlighted by the conceptual models of Steensen, Ferrer-Conill, and Peters (2020) and Gajardo and Costera Meijer (2023), our study empirically tested these theoretical foundations. We introduced a new methodological approach, NESM, to examine what constitutes a good *news experience* (see Costera Meijer 2022; Maduneme and Lewis 2025), conceptualized here as *Time Well Spent*. Whereas behavioral metrics allow news organizations to measure the time users spend on news (Groot Kormelink and Costera Meijer 2020), NESM enables them to evaluate the *experiential quality* of news from a user perspective, capturing the 'well' in Time Well Spent, all within a unified research design. Overall, our NESM indicated the essential role of emotions and user needs in understanding a 'worthwhile' user experience.

Therefore, we argue that integrating NESM holds promise for journalistic practice. However, as Maduneme and Lewis (2025) note, there is no one-size-fits-all definition of a worthwhile news experience, because value is inherently subjective and experienced individually. Rather than prescribing a single notion of quality, the user needs and form- and style-related criteria derived from NESM can serve as evaluative benchmarks, enabling news organizations to assess how well specific journalistic formats, topics, and stylistic choices align with users' ideal news experiences. As individual facets, they may not be easily aggregated into a single, quantifiable metric, but repeated use of NESM may help news organizations systematically reflect on the multidimensional nature of news experiences, complementing existing behavioral metrics.

Our results are subject to several limitations. First, the survey was prompted on articles selected by the news outlets themselves, which may systematically differentiate these articles from those not included in the study. Newsrooms primarily selected articles they considered to require journalistic effort, which meant they were mostly behind paywalls. Consequently, the sampled articles may be more likely to represent in-depth or high-quality journalism, potentially biasing the sample toward content that readers are already more likely to perceive as "time well spent." Further research might explore how other genres, such as breaking news, which is often not placed behind a paywall, relate to perceptions of time well spent. Another consequence is that most of our respondents were paying subscribers. This group is likely to be more engaged with news and tends to be older, which likely skews their evaluations of worthwhileness. On top of that, participants self-selected into the survey, and it is known that certain groups (e.g., those with higher education or more time) are generally more likely to participate in survey research. Future research should therefore include non-paying news users and casual readers, as these groups might reveal lower evaluations of news as "TWS". For instance, the NESM could be repeated by prompting the survey whenever users bounce away from free content or initiate subscription cancellations, thereby including audiences who may be less positively predisposed toward news and enabling the identification of factors contributing to poor news experiences.

Lastly, we underscore the belief of Hearken co-founder Jennifer Brandel (in Nelson 2019) that strengthening the relationship between news organizations and their audiences

through more explicit forms of engagement is likely a step toward addressing crises in journalism, such as financial instability and news avoidance. However, to substantiate this thesis, longitudinal within-user research is needed to examine whether meaningful engagement increases users' willingness to pay, or, conversely, whether less meaningful engagement can alienate users and lead them to tune out of the news altogether.

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Author contributions

CRedit: **Kenza Lamot**: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Visualization, Writing – original draft, Writing – review & editing; **Tim Groot Kormelink**: Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Writing – original draft, Writing – review & editing; **Tessel Bogaard**: Conceptualization, Data curation, Funding acquisition, Methodology, Resources, Software, Writing – review & editing.

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