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Converting Online News Visitors to Subscribers: Exploring the Effectiveness of Paywall Strategies Using Behavioural Data

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ABSTRACT

Our study investigates how newspapers' paywall strategies are associated with whether visitors (1) begin and (2) finish the process of taking out an online news subscription. Firstly, we investigate correlations between showing various "teaser" elements on paywalled articles and whether visitors start the subscription process by clicking a "subscribe now"-type button. Visitors clicking that button are usually shown specific subscription offers. We also investigate the associations between these offers and whether visitors finally subscribe. We find that showing a standfirst/deck or introductory paragraph/sentences on a paywalled article significantly reduces the odds of visitors clicking the "subscribe now" button. Some visitors may believe they have gathered enough information from these teaser elements and decide not to subscribe to read further. Regarding finishing the subscription process, our results show that offering a discount significantly increases the odds of people paying for subscription. The other subscription offers—offering an ePaper, base subscription price, length and cost of trials, and offering smart devices or small gifts—were mostly not associated with the decision to subscribe. This study has practical implications for paywall design. Reducing the information density of teaser elements on paywalled articles and offering discounts may help newspapers increase their online subscriber numbers.

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Introduction

The print circulations and advertising revenues of newspapers have been declining globally for many years (WAN-IFRA 2024). In this context, many news publishers have been trying to establish sustainable digital revenue models (Olsen and Solvoll 2018). A common strategy involves implementing a paywall to generate revenue directly from readers (Newman and Robertson 2023). Accordingly, how to attract online subscribers has become a common concern. Despite growth in the number of online news

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subscribers in many developed countries in recent years, including as a result of a “coronavirus bump” in paying for news, on average fewer than one in seven people subscribe and that growth has been levelling off (Newman et al. 2024, 23). Understanding the factors that influence online news subscription is relevant not only for the prosperity of news publishers, but also for society. Restarting the growth in online news subscribers may, for example, help slow the spread of “news deserts”, a phenomenon that has been tied to a variety of negative outcomes (Miller 2018).

However, previous studies have primarily investigated news subscription from the user and product perspectives (O’Brien, Wellbrock, and Kleer 2020) and used paying intention or willingness to pay as indicators of whether people would subscribe (Chyi 2012; Olsen and Solvoll 2018; O’Brien, Wellbrock, and Kleer 2020), rather than users’ actual subscription behaviours.

The present study helps fill these gaps by utilising behavioural data from visitors at 21 regional and local news websites to investigate an under-researched aspect of news subscription. We focus on news websites’ paywall strategies, by which we mean the teaser elements shown on the paywall locked article pages and the offer/price information declared on the subscription pages. We investigate correlations between these paywall strategies and visitors’ decisions to (1) enter the subscription funnel by clicking on a “subscribe now”-type button after hitting the paywall and (2) actually take out a subscription.

Because there appeared to be no prior research on the effectiveness of news websites’ (1) teaser strategies; and (2) some of their specific subscription offers, we decided to adopt an exploratory approach as befits new areas of enquiry (Swedberg 2020). Our exploratory approach was a quasi-experimental “field experiment”, which has the advantage of a real-life setting (Gross 2017). As Burian (2013) writes, such “exploratory experimentation” can reveal “the importance of potentially relevant variables” and facilitate “the discovery of unrecognized patterns and regularities”. Our approach is in line with the “new experimentalism” philosophy that advocates for experiments that serve exploratory and inductive purposes (Arabatzis 2008).

Research Background

For a long period after early attempts at news digitalisation at the beginning of the 1990s, many news publishers tried to replicate the advertising-based revenue model of free print newspapers with their online news products, i.e., attracting visitors through free online news content and selling those audiences to advertisers (Arrese 2016). However, as a large amount of online advertising and its revenue has been captured by very large online platforms (VLOPs) and search engines (VLOSEs), such as Facebook and Google (American Press Institute 2017; O’Brien, Wellbrock, and Kleer 2020), most news publishers have not been able to generate enough online advertising revenue to make up for the losses in print advertising revenue (Kammer et al. 2015; Pew Research Center 2012, 2015).

Against this background, starting in the late 2000s, many news publishers including regional and local ones decided to shift away from providing free online news, and there was a wide implementation of paywalls (Arrese 2016; Borchgrevink-Brækhus and Moe 2023; Kammer et al. 2015; Olsen, Kammer, and Solvoll 2020), an online content

subscription model that restricts access to all or part of the online content if the user does not pay.

However, questions have been asked about the effectiveness of paywalls in the years since their rapid rollout. Concerns include declining traffic after the implementation of paywalls (Olsen, Kammer, and Solvoll 2020; O'Brien, Wellbrock, and Kleer 2020) and the fact that, even with paywalls, digital revenues may still not make up for the decline in print revenues (WAN-IFRA 2024). Central to these issues is a lack of online subscribers, some of the reasons for which have been quite well explored. Most of the studies before the mid-2010s showed that readers generally rejected paid subscriptions in many countries (Chyi 2005, 2012; Fletcher and Nielsen 2017; Kammer et al. 2015). In more recent years, although a growth of online subscribers has been observed in many markets, the average proportions of online news consumers who subscribe is still at a low level, and the growth has started to level off, with studies indicating that the proportion of people paying for online news across 20 countries remained flat—at around 17%—between 2022 and 2024 (Newman et al. 2024, 23). Furthermore, and of concern to regional and local news publishers, is evidence that, for a long time, a large proportion of digital news subscriptions have been concentrated on a handful of upmarket national brands (Newman et al. 2023).

It is important, therefore, for news publishers, especially at the regional and local level, to understand the factors that potentially influence people's decision to subscribe. Published research has mainly focused on the potential influence of user and news product factors (O'Brien, Wellbrock, and Kleer 2020). User characteristics that have been shown to be influential in people's decision to pay—or continue to pay—for online news include age (Chyi 2005, 2012; Chyi and Lee 2013; Goyanes 2014, 2015; Kammer et al. 2015), gender (Chyi 2012; Chyi and Lee 2013; Goyanes 2015), educational background (Punj 2015), income level (Beier, Mladenow, and Strauss 2018; Fletcher and Nielsen 2017; Goyanes 2014), news consumption level (Chen and Thorson 2021; Chyi 2005; Kim et al. 2021), interest in news (Chyi 2012; Chyi and Lee 2013; Fletcher and Nielsen 2017), media use level (Goyanes 2015), and digital media use level (Goyanes 2014). From the news product perspective, studies have shown the potential influence of: (perceived) news quality (Chen and Thorson 2021; Goyanes, Artero, and Zapata 2021; Groot Kormelink 2023; Herbert and Thurman 2007; Kammer et al. 2015), the exclusivity of news content (Borchgrevink-Brækhus and Moe 2023; Goyanes, Artero, and Zapata 2021; Kammer et al. 2015; Kim et al. 2021), the volume of in-house content (Yang, Sahoo, and Simcoe 2020), news topics (Carson 2015; Yang, Sahoo, and Simcoe 2020), the reputation of the news publisher or journalist (Goyanes, Artero, and Zapata 2021), and the ability to acquire personalised information (Kammer et al. 2015).

However, little research has explored the correlations between paywall strategies and people's subscription decisions, a research gap the present study aims to help fill. To help explain the paywall strategies this study considers, in Figure 1, we show a typical subscription journey. When non-subscribing visitors browse online news websites with a paywall, some or all articles are locked in an unreadable state, with only some teaser elements shown. These elements can include a headline, picture, intro, stand-first ("deck" in US-English), and a blurred preview of the full-length of the article. Different news websites

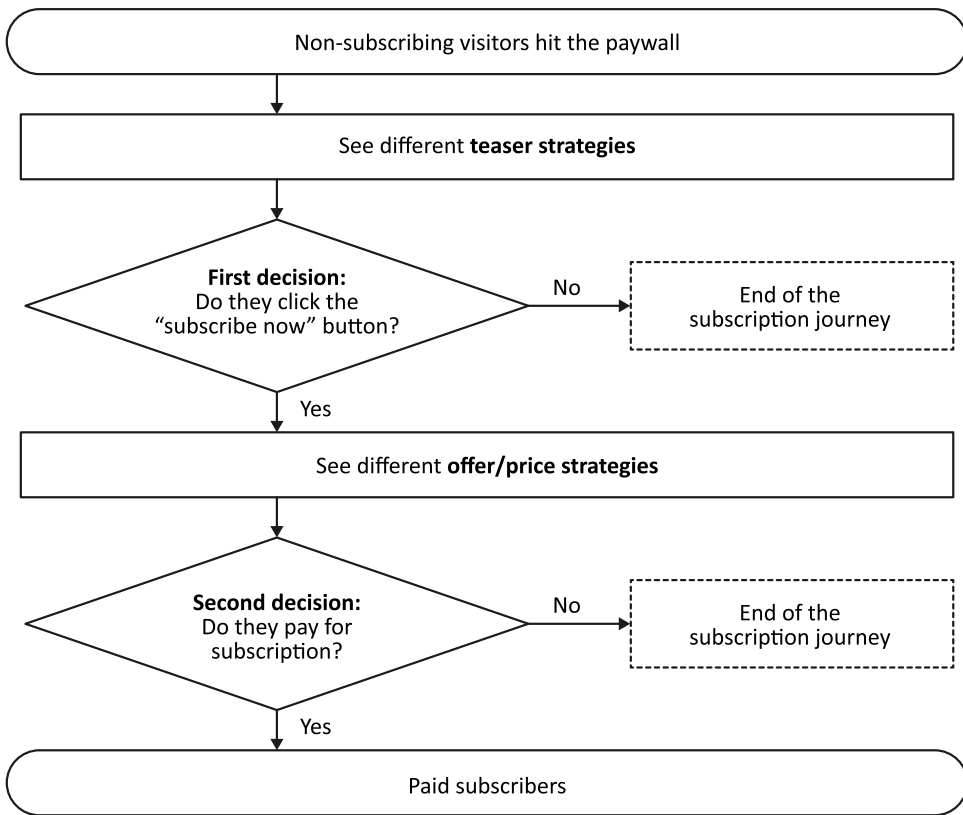


Figure 1. A typical subscription journey.

choose to display different elements, which we consider to be their teaser strategies. In addition, a dialogue box with a “subscribe now”-type button is usually displayed to inform visitors that they must subscribe to be able to access the paywalled content (see Figure 2). The first question addressed by the present study is how these teaser strategies correlate with visitors’ decisions to click that button. If visitors do decide to click that button, they are usually redirected to another page that shows specific offer/price strategies, including detailed information on the offer, price, trials, and promotions. This prompts the study’s second question: how the offer/price strategies correlate with visitors’ decisions to finally pay for a subscription. The overall question this study aims to answer is, therefore:

How do the paywall strategies (i.e., teaser strategies and offer/price strategies) of regional and local news websites in Germany and Austria correlate with visitors’ subscription behaviours (i.e., clicking the “subscribe now” button and finally paying for a subscription)?

The composition of our sample (see Methods section) means that we believe our findings have relevance to newspaper brands in general, including at the national as well as the regional and local levels.

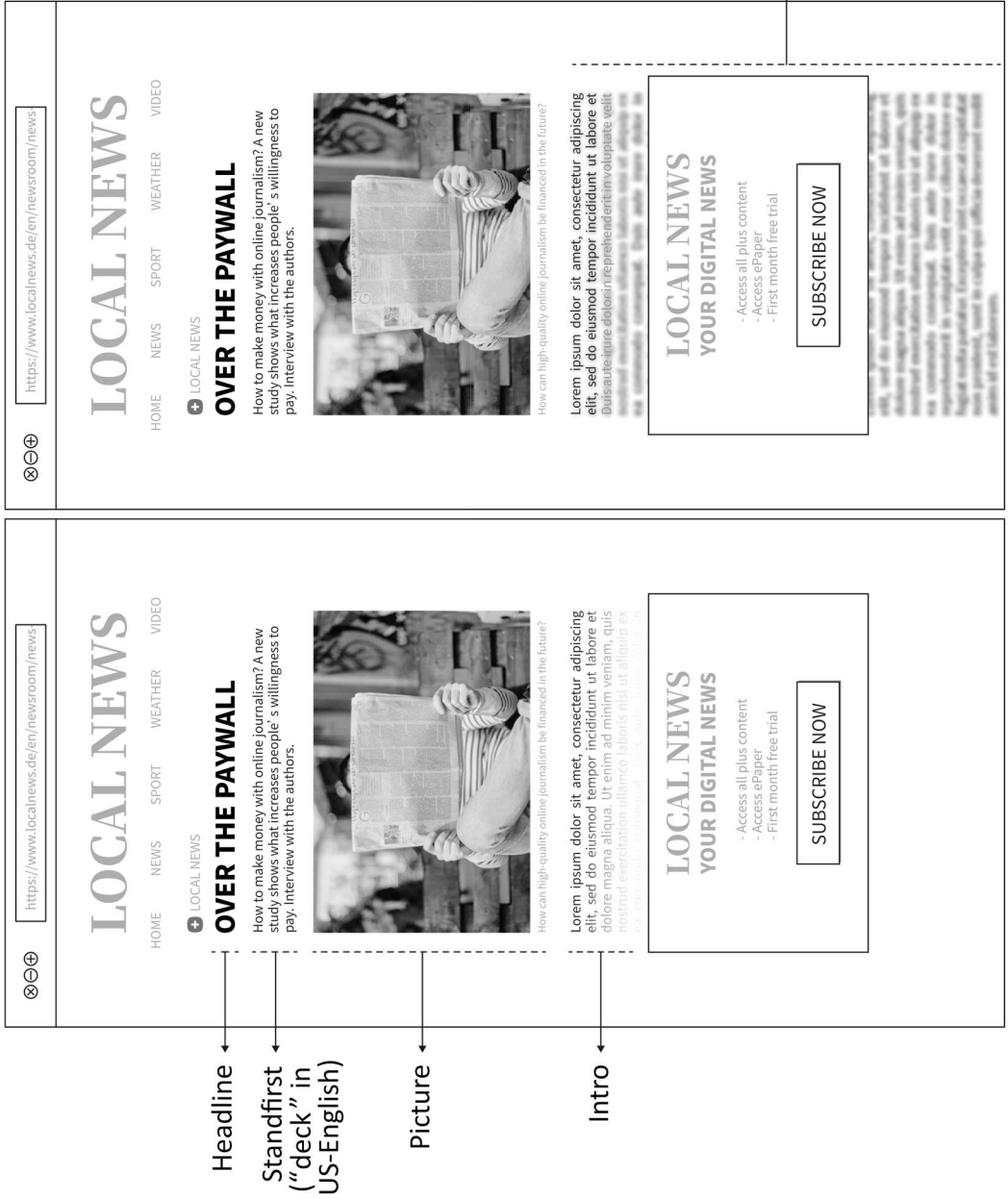


Figure 2. Illustration of the teaser elements shown on paywalled articles investigated by this study.

Research Questions

Teaser Strategies

As mentioned above, news websites will often display one or more of the following teaser elements on their paywall locked article pages (in addition to the headline): picture, stand-first, intro, and a blurred preview of the full length of the article (see [Figure 2](#)). It is important to note that the headline of a paywalled article is usually displayed, so its potential influence was not investigated. Few previous studies have specifically explored the correlations between these other teaser elements and people's decisions to click the "subscribe now" button.

Pictures

Research has indicated that pictures are a powerful lure for readers to read text (Gibson 1991), and that texts with pictures are selected more frequently and read for longer than articles without (Knobloch et al. 2003; Zillmann, Knobloch, and Yu 2001). However, it is important to note that these studies were conducted when both the full text and the picture were visible. Whether pictures can induce readers to start an online news subscription journey has not, to our knowledge, been studied. Therefore, we ask:

RQ1.1: Does the visibility of a picture in paywall locked articles of news websites correlate with whether visitors click on the "subscribe now" buttons?

Stand-first

In this study a "stand-first" ("deck" in US-English) is "a short piece of text in a[n online] newspaper article below the headline (= title) that gives the most important facts and ideas that are contained in the article that follows" (Cambridge University Press n.d.). Few if any studies have explored the potential influence of stand-firsts on subscription decisions. It is possible that if people can obtain the most important information in a paywalled article from a visible stand-first, then they may feel no need to pay to read it in full. Whilst we are unaware of any direct evidence to support this hypothesis, studies of people's online news consumption habits, especially those of younger generations, may provide some guidance. For example, the prevalence of smart devices, which make news readily available, has led people to news "snacking" (Costera Meijer and Groot Kormelink 2015): a shorter, more dispersed pattern of consumption aimed at acquiring a basic overview of current events by quickly checking daily headlines, rather than obtaining in-depth knowledge or opinions. On the other hand, previous studies have indicated that a book's blurb or synopsis (similar in function to a news article's stand-first) is an important factor in influencing whether people read or buy the book (Leitão et al. 2018). Given paucity of previous research and these divergent hypotheses, the following research question is posed:

RQ1.2: Does the visibility of a stand-first ("deck" in US-English) in the paywall locked articles of news websites correlate with whether visitors click on the "subscribe now" buttons?

Intro

In the present study, the "intro" refers to the opening sentence, the first few sentences, or the first paragraph of the article. Due to how factual news articles are often written

following the “inverted pyramid” structure—in which the most newsworthy information is placed at the start—intros have similarities to stand-firs. However, they are likely to reveal less information, especially for article types—like opinions columns or features—that don’t follow the inverted pyramid structure. We could find no relevant research on intros’ potential influence on subscription behaviour, therefore the following research question is posed:

RQ1.3: Does the visibility of an intro in the paywall locked articles of news websites correlate with whether visitors click on the “subscribe now” buttons?

Blurred Preview of the Full Length of the Article

While some news sites hide the larger part of a paywalled article and just display the first sentences or paragraph, others show the whole article with only the very top part visible and the rest blurred. In the present study, this characteristic will be referred to as the blurred preview of the full length of the article. We could find no research directly investigating the potential influence of this teaser element on people’s subscription decisions. However, studies on visual factors in e-commerce have suggested that people tend to reduce cognitive load through heuristics during online shopping, i.e., they make purchase decisions based on product text and photographs on websites (Kim and Lennon 2008); with photographs more likely to capture consumers’ attention (Rayner, Miller, and Rotello 2008) and increase purchase intention (Hassanein and Head 2007). Showing a blurred preview of the full length of an online news article may act in a similar way, increasing purchase intention. However, as this is speculation, we formulated the following research question:

RQ1.4: Does showing a blurred preview of the full length of paywall locked articles on news websites correlate with whether visitors click on the “subscribe now” buttons?

Offer and Price Strategies

Offering an ePaper

Studies have indicated that many people are more willing to pay for print newspapers than for online news because they perceive print news to be of higher quality (Chyi 2005, 2012; Kammer et al. 2015). Being a digital copy of a print newspaper, an ePaper may be perceived as having both the high quality of a print newspaper and the convenience of online news, which may in turn create a motivation to pay. Therefore, we ask the following research question:

RQ2: Does offering an ePaper correlate with whether visitors pay for subscription on news websites?

Price

Many previous studies have shown the potential influence of price on purchase intention and behaviour (Lee et al. 2018). Regarding digital journalism, studies have shown that many respondents perceive online news subscriptions as being expensive, with the “high” prices negatively influencing the likelihood of subscription (Groot Kormelink 2023, 2219), and lower prices being more attractive (Newman et al. 2023). However,

studies have also shown that people generally expect online content—including news—to be free (Fletcher and Nielsen 2017; Goyanes, Demeter, and de Grado 2022; Kammer et al. 2015). This means that people may not pay for any charged-for online news, regardless of the price. Indeed research has shown that people may care more about whether online news is charged for at all than how much is being charged (Chyi 2012). For those who accept the concept of paying for an online news subscription, research has shown that price may not play a significant role (Kammer et al. 2015). Given the uncertain influence of price, the following research question is posed:

RQ3: Does the price of a subscription to a newspaper’s website correlate with whether visitors pay for a subscription?

Trials

Previous research has shown that offering trials can have a positive influence on people’s perceptions and expectations of consumer products, which in turn influences their continued use and purchase after the trial (Wang et al. 2013). On this basis, we investigated two related factors that may potentially influence people’s subscription decisions: (1) whether a trial is charged for, and (2) how long a trial is.

Trial Fee. As mentioned earlier, there is a general belief among consumers that online content in general and news in particular should be free. This attitude may carry over to attitudes towards trials. If a trial is charged for, people may not be willing to try it, which in turn may influence their eventual subscription decision. However, research has also suggested that free trials may be a means for price-sensitive visitors to bypass paying. For example, some respondents have talked about constantly switching between free trials rather than paying for a real subscription (Newman et al. 2023). The following research question is thus posed:

RQ4.1: Does the availability of free trials on news websites correlate with whether visitors pay for a subscription?

Trial Period. Trials can disrupt consumption patterns and create positive attitudes towards a product and the development of new habits (Thøgersen 2009). From this perspective, a longer trial period gives consumers more time to learn about the product, which may increase loyalty and willingness to pay (Yoganarasimhan, Barzegary, and Pani 2023). However, longer trials may also better serve the needs of those who want to avoid subscribing. So, although shorter trial periods may be less effective in terms of developing consumer loyalty, they may reduce the number of serial “free-riders”; and the urgency associated with the shorter trial period may drive visitors to actually pay for a subscription (Yoganarasimhan, Barzegary, and Pani 2023). It is therefore uncertain how the length of trial periods may correlate with subscription decisions. Thus, the following research question is posed:

RQ4.2: Does the length of the trial period for news websites correlate with whether visitors pay for a subscription?

Promotions

Previous research has shown that discounts or promotions may influence people's subscription decisions regarding both print newspapers and online news (American Press Institute 2017). In the present study, three categories of promotion will be investigated: (1) the provision of a discount, including a direct price reduction or several months of free or low-priced use achieved by the signing of a long-term contract; (2) the provision of a high-value smart device (e.g., a tablet or a smartphone); and (3) the provision of a small gift (e.g., gifts, vouchers, participation in lotteries, experiential activities, or other giveaways/activities of less economic value).

Discounts. Direct price discounts have always been an important means of attracting consumers, and many studies have shown that price discounts have a facilitating effect on consumer purchases of products or services (Al Hafizi and Ali 2021). A survey of 50 online newspapers showed that 33 offered discounts on digital subscriptions, with significant discounts being the norm (Chyi and Ng 2020), which may imply discounts have a positive influence on converting visitors to subscribers. However, little research has specifically focused on the correlation between discounts and online news subscription. Therefore, the following research question is posed:

RQ5.1: Do discounts correlate with whether visitors pay for a news website subscription?

Smart Devices. Few studies have explored the potential influence of giving away smart devices on online news subscriptions. If doing so has the same positive influence as giving away a "free" mobile phone alongside a mobile phone contract (Alshurideh 2016), then it could be an effective way of getting people to subscribe. However, a strong link exists between mobile phones and mobile phone operator contracts, while online news does not necessarily need to be read on a mobile device, which may mean that offering a smart device does not play a significant role in subscription decisions. The following research question is therefore posed:

RQ5.2: Does giving away smart devices correlate with whether visitors pay for a news website subscription?

Small Gifts. Typically, small gifts are offered to attract attention and encourage the purchase of a linked product. However, research has indicated that people respond more positively to higher value gifts (Beltramin 2000), especially when the linked product is also of higher value (Ding and Zhang 2020). This brings into question whether offering low-value gifts can induce readers to subscribe. Hence, the following research question is posed:

RQ5.3: Does giving away small gifts correlate with whether visitors pay for news website subscriptions?

Method

Our sample of websites was determined by the source of the data we used for our dependent variables. Using this source, which is described more fully below, enabled us to

access user data from a relatively large number of news websites—21. This is a significantly higher number than has been used in some other, related studies that have also analysed actual user data. For example, Kim et al. (2021) used data from three websites.

The German ($n = 20$) and Austrian ($n = 1$) websites in our sample differ considerably in size, but all are regional or local titles, as are many of the over 300 newspapers in Germany (Wolleschensky and Sehl 2024, 59). Ten are large, regional news brands that all have print circulations larger than the UK national newspaper the *Sunday Post*, as well as the US regionals *The San Diego Union-Tribune* and *The Denver Post*. Some of these ten have multiple local editions and editorial offices and employ hundreds of journalists, including scores covering national news. The largest three news brands in our sample have higher print circulations than the *New York Post*, *The Washington Post*, and *USA Today* as well as the British *Financial Times* and *Daily Star*. Seven have a larger print circulation than the national German newspaper, *Die Welt*. Eleven titles in our sample are smaller, with print circulations of under a thousand, through a few thousand, to a few tens of thousands.

The composition of our sample means that we believe our findings have relevance to newspaper brands in general, including at the national as well as the regional and local levels. Indeed, in Germany, national, commercial news brands such as *Bild*, *Der Spiegel*, *Die Welt*, *Die Zeit*, and *Frankfurter Allgemeine* all use teaser strategies on paywalled articles and have pricing and subscription offers similar to those used by the regional and local sites in our sample.

However, the fact that the websites in our sample—and, presumably, most of their users—come mainly from Germany (one was Austrian), necessitates some contextualisation. Online users in Germany and Austria were slightly less likely to have paid for online news in the last year than the average online user across 40 of the countries surveyed in the 2024 Reuters Digital News Report (Newman et al. 2024). In Germany and Austria 13% and 14% had, respectively, whilst the average across the 40 countries was 16% ($SD = 6$). The Report also found that 46% of German online news subscribers and 48% of Austrian were paying less than the full monthly price for their online news subscription, i.e., receiving a discount, more than the average across 20 countries, which was 41% ($SD = 12.87$). Finally, the Report revealed that 68% of online users in Germany (and 60% in Austria) who did *not* have an online news subscription would *not* be prepared to pay *anything* for online news. These were higher proportions than the average for the 20 markets studied ($M = 57\%$, $SD = 7.68$). In the Results and Discussion sections we address how the geographical origin of our sample may have some implications for the interpretation of our results.

Data and Measures

The data for the present study was collected during two time periods: 5–11 May and 5–11 August 2022. We collected the data for our independent, dependent, and control variables from two separate sources.

Independent Variables

Our independent variables are news websites' (1) teaser strategies, and (2) offer/price strategies including offering an ePaper, base price, trials, and promotions. We visited

the websites in each of the data collection periods and manually recorded their teaser and offer/price strategies. While each website's strategies within the individual time periods were stable, some websites changed their strategies between the two periods. Therefore, for each website, the data collected during the two time periods has been treated as two individual cases. That means that we have, in total, 42 website-level cases.

The independent variables were operationalised as follows. *Teaser strategies* consist of four elements: picture, stand-first, intro, and blurred preview of the full length of the article, which are all operationalised as binary variables that represent whether each element is displayed on the paywall locked article page (0 = no, 1 = yes). *Offer/price strategies* include seven aspects: *Offering an ePaper* is operationalised as a binary variable to indicate if an ePaper was available (0 = no, 1 = yes). *Subscription price* measures the standard base subscription price of each news website. This reflects the minimum price for access to services (excluding any lower price obtained by signing a long-term contract). The variable is numeric. *Trial fee* is operationalised as a binary variable (0 = free, 1 = not free). In the data collected, two types of trial period were identified: less than or equal to one month, and three months. *Trial period* is therefore operationalised as a binary variable (0 = no more than 1 month, 1 = 3 months). With regard to promotions, the provision of a *discount*, the giving away of a free or subsidised *smart device*, and the giving away of a *small gift* are all operationalised as binary variables (0 = no, 1 = yes).

Dependent Variables

Unlike prior studies that used self-reported paying intention or willingness to pay (Chyi 2012; O'Brien, Wellbrock, and Kleer 2020) as dependent variables, we used visitors' actual behaviour as the dependent variables in the present study, specifically (1) whether non-subscribing visitors' clicked the "subscribe now" button on a paywalled article page, and (2) whether visitors paid for a subscription.

This data was provided by the Digital Revenue Initiative (DRIVE) project. DRIVE was launched in 2020 by Deutsche Presse Agentur (DPA) and the management consultancy Highberg (formerly Schickler) (Highberg n.d.). Partnering with more than 25 news publishers, the project tracks and analyses publishers' online news content and user behaviour in order to help publishers take actions to increase digital revenues (Fleischmann 2021). As of May 2022, the project had recorded 4 million pieces of article information and 10 billion user events. The use of this behavioural data helps to avoid the discrepancies between self-reported data and actual user behaviour that have been identified in previous studies (Ohme et al. 2021). The website visitor data that support the findings of this study are available from DRIVE. Restrictions apply to the availability of these data, which were used under license for this study.

Although the sites in this study's sample can accurately identify individual subscribing users when they are logged in, the present study concerns non-subscribing visitors. Cookies are used to try to establish the identity of non-subscribing visitors. Cookies are text files placed on visitors' computing devices when they visit a website and can be used to track their behaviour during a session and recognise when the same device returns. However, because users can browse from multiple devices, our unit of analysis cannot be said to be unique individual users but rather individual browsing devices. Using individual browsing devices as our unit of analysis may mean some unique users have been counted more than once (an issue potentially exacerbated by cookie deletion),

however the amount of “noise” in the data is likely to be small due to the relatively short data collection periods. Our aggregated data is based on the behaviour of individual browsing devices, specifically whether a device clicked the “subscribe now” button on a paywall locked article page (“1”, otherwise “0”) and if a device finally decided to pay for the subscription on the offer page (“1”, otherwise “0”). Regarding whether the “subscribe now” button was clicked, 3,518,822 individual-level cases were included, and regarding whether a subscription was taken out the number was 28,506.

Because visitors to each news website within each data collection period see the same strategies, we aggregated the individual-level cases to the website-level, using the proportions of visitors who made positive decisions (value = 1) among all the visitors who encountered the two decision points. Specifically, for each website-level case, we aggregate two proportions: (1) the proportion of non-subscribing devices whose users clicked the “subscribe now” button on a paywall locked article page among all non-subscribing devices that hit the paywall and had never clicked the “subscribe now” button and seen the specific offers and pricing strategies before the data collection period; and (2) the proportion of non-subscribing devices that finally paid for a subscription among all non-subscribing devices that hit the paywall and clicked the “subscribe now” button. These two proportions are the dependent variables used for analysis in the present study.

Control Variables

Paywall porosity represented how frequently visitors hit the paywall. For each website-level case, this was calculated as the proportion of non-subscribing devices that hit the paywall among all the non-subscribing devices browsing the website. The implementation of different types of paywalls can lead to differences in the frequency with which visitors hit a paywall. Clearly, a hard paywall may result in more paywall hits than a freemium or metered paywall. A previous study pointed out that frequently hitting a paywall may induce people to give up on news altogether, especially those who are not highly engaged with news (Newman et al. 2019). *Average length of news articles* represents the average length of all articles published on the news websites during each of the data collection periods. It has been suggested that the length of a news story may be associated with the reader’s perception of quality (Choi, Shin, and Kang 2021), and people may be more likely to pay for news that they perceive as having higher quality (Chen and Thorson 2021; Goyanes, Artero, and Zapata 2021; Kammer et al. 2015). *Proportion of local news* was the proportion of local news out of all the articles published on each of the news websites. Previous studies have shown that highly specialised content, such as local news, may have a better chance of being paid for than general news (Goyanes 2015) and that “reading local content contributed to subscriber retention” at local news sites in the United States (Kim et al. 2021). Based on such arguments, we controlled for these variables, the values for which were obtained directly from DRIVE.

Comparison between Local and Remote Visitors

To obtain a fuller picture of people’s subscription decisions, we also investigated differences in the effectiveness of the paywall strategies for local and remote visitors. Local visitors are those within the circulation area of the newspaper, while remote visitors are those

outside of that area. Local news has been found to be the “strongest driver” for visiting a local news website (Lindner 2013, 208) and “local news and information” a “key reason ... why participants accessed local news online” (Gulyas, O’Hara, and Eilenberg 2018). However, little research has explored differences between visitors in terms of their online subscription journeys according to whether they visit from within or without the parent newspapers’ circulation areas.

The present study calculated three pairs of dependent variables. The first pair involved all devices, as described previously. The second and third pair only included access devices from the local and remote areas respectively. We used these three pairs to investigate the potential influence of paywall teaser and offer/price strategies on (1) all visitors, (2) local visitors, and (3) remote visitors.

Analysis Techniques

We employed two generalised additive logistic regression models.¹ The first one is used to model the relationship between the teaser strategies and visitors clicking on the “subscribe now” button. The second is used to model the relationship between the offer/price strategies and visitors paying for a subscription. In the first model, the dependent variable takes the value 1 if the visitor clicked the “subscribe now” button, 0 otherwise. In the second model, the outcome is 1 if the visitor paid for a subscription, 0 otherwise. These original binary outcomes on the individual-level follow a quasi-binomial distribution. As described, because we use aggregated proportions on the website-level as the dependent variables in the analysis, we added weights to reflect the original number of individual-level cases that make up each website-level case. The Supplementary Material contains the R script used in our analyses.

This study was approved by the Institutional Review Board of the Department of Media and Communication at LMU Munich.

Results

Regarding associations between the teaser strategies and decisions to click the “subscribe now” button by all visitors, the results are shown in Table 1. With all other independent variables being constant, displaying a stand-first (“deck” in US-English) on the paywall locked article page significantly decreases the odds of visitors clicking the “subscribe now” button, by 86.3%. This answers RQ1.2. Similarly, regarding RQ1.3, displaying an

Table 1. Associations between news websites’ teaser strategies and the odds of non-subscribing devices clicking the “subscribe now” button (0 = not clicked, 1 = clicked). (All visitors).

	<i>B</i>	<i>SE</i>	<i>z</i> value	<i>P</i>	OR	95% CI
(Intercept)	0.266	1.029	0.259	0.798	1.305	[0.174, 9.809]
Picture (yes)	−0.426	0.511	−0.834	0.410	0.653	[0.240, 1.777]
Stand-first (yes)	−1.985	0.654	−3.037	0.005**	0.137	[0.038, 0.495]
Intro (yes)	−1.281	0.353	−3.632	<0.001***	0.278	[0.139, 0.555]
Blurred preview (yes)	−0.306	0.372	−0.821	0.417	0.737	[0.355, 1.528]
Paywall porosity	−1.328	0.918	−1.447	0.157	0.265	[0.044, 1.601]
Average article length	−0.0003	0.0002	−1.359	0.183	0.9997	[0.9992, 1.0001]
Local news proportion	−1.048	1.056	−0.993	0.328	0.351	[0.044, 2.777]

Notes: **p* < .05, ***p* < .01, ****p* < .001. Number of the individual cases reflected by weights: 3,518,822.

Table 2. Associations between news websites' offer/price strategies and the odds of non-subscribing devices finally paying for subscription (0 = not paid, 1 = paid) (All visitors).

	<i>B</i>	<i>SE</i>	<i>z</i> value	<i>p</i>	OR	95% CI
(Intercept)	-0.411	2.155	-0.191	0.850	0.663	[0.010, 45.222]
Offer ePaper (yes)	0.690	1.070	0.645	0.524	1.994	[0.245, 16.224]
Price	-0.047	0.056	-0.833	0.412	0.955	[0.856, 1.065]
Charged trial (yes)	-0.439	0.611	-0.719	0.478	0.644	[0.194, 2.136]
Trial period (3 months)	0.257	0.986	0.260	0.797	1.293	[0.187, 8.934]
Discount (yes)	1.208	0.541	2.232	0.034*	3.345	[1.159, 9.658]
Smart devices (yes)	1.227	0.666	1.843	0.076	3.412	[0.925, 12.585]
Small gifts (yes)	-0.151	0.711	-0.212	0.834	0.860	[0.213, 3.466]
Paywall porosity	-2.202	1.504	-1.464	0.154	0.111	[0.006, 2.106]
Average article length	-0.0012	0.0005	-2.444	0.021*	0.9988	[0.9978, 0.9998]
Local news proportion	2.838	1.569	1.808	0.081	17.079	[0.788, 369.990]

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$. Number of the individual cases reflected by weights: 28,506.

intro also significantly decreases the odds of clicking the button: by 72.2%. With regard to *RQ1.1* and *RQ1.4*, showing an image decreases the odds by 34.7%, while showing a blurred preview of the full length of the article decreases the odds by 26.3%. However, both of these last two results lack statistical significance at conventional 5% levels.

Table 2 shows the correlations between offer/price strategies and whether all visitors finally paid for a subscription. Regarding *RQ5.1*, the results show a significant positive correlation between the provision of a discount and visitors finally subscribing. Discounts increase the odds of paying for a subscription 3.35 times. With regards to another promotion of relatively high economic value, as investigated in *RQ5.2* (i.e., the giving away of free or subsidised smart devices), here too there is a strong positive correlation, with the odds 3.41 times higher. However, the correlation lacks statistical significance, although the p -value is close to the significance level.

Similarly, offering an ePaper, as described in *RQ2*, and the provision of a longer trial period, as described in *RQ4.2*, increase the odds by 1.99 and 1.29 times respectively, though the correlations are statistically insignificant. In contrast, a higher price, as described in *RQ3*, charging for a trial, as described in *RQ4.1*, and giving away small gifts, as described in *RQ5.3* all decrease the odds of visitors paying for a subscription, with the reductions being 4.5%, 35.6%, and 14.0% respectively. However, here again the correlations between these three factors and subscribing are not statistically significant. It should be noted that our finding of no statistically significant correlation between price and subscribing may not generalise to markets (e.g., Finland or Norway) where higher proportions of those who do not pay for online news say they would be willing to pay something for online news than is the case in Germany and Austria (Newman et al. 2024).

The comparisons between local and remote visitors are shown in Table A and Table B in the supplemental material. The results indicate that showing a stand-first or intro significantly decreases the odds of clicking the "subscribe now" button in both the local and remote visitor groups. While the intensities of the correlations differ between the two groups, the differences are not significant. Regarding finally converting to a subscriber, the results show that for local visitors, none of the offer/price strategies are significantly correlated. However, for remote visitors, both a discount and the giving away of free or subsidised smart devices significantly increase the odds of visitors finally deciding to subscribe.

Discussion

The present study investigated correlations between paywall strategies at regional and local news websites in Germany and Austria and visitors' decisions in the typical subscription journey. Specifically, we focused on correlations between teaser strategies and decisions to click the "subscribe now" buttons on paywall locked pages, and correlations between offer/price strategies and decisions to finally convert to a subscriber. As mentioned previously, online users in Germany and Austria are slightly less likely to pay for online news than the average user across 40 countries (Newman et al. 2024). This may mean that it would be easier in some other countries to nudge users to start and finish the subscription journey than our results, based on German and Austrian users, indicate.

Regarding the decision to click the "subscribe now" button, we found that displaying a stand-first ("deck" in US-English) or an intro significantly decreased the odds of a visitor clicking the button when they hit the paywall. This finding was true for both local and remote visitors. A possible explanation is that a stand-first and/or an intro can provide considerable information about the article not contained within the headline. Stand-firsts typically contain "the most important facts and ideas" in the article (Cambridge University Press n.d.) and the intro, as the beginning of the article, will often also contain important information as articles often follow the "inverted pyramid" structure. As a result, visitors may obtain enough information from a well-formulated stand-first and/or intro to feel that they have been sufficiently informed, and therefore feel no need to read further, let alone pay to do so. This is especially the case given online news consumers' tendency to quickly browse news to form an impression of current events, rather than seeking in-depth knowledge or opinions (Costera Meijer and Groot Kormelink 2015).

Although showing a picture also negatively correlates with visitors' clicking on the "subscribe now"-type button, the correlation is statistically insignificant, which may be explained by the fact that, compared to text-based elements such as a stand-first or an intro, an image is often just a partial snapshot of the story and may not provide enough information for visitors to feel that further reading is unnecessary. Showing a blurred preview of the full length of the article also had no significant associations with whether visitors clicked the subscribe-now button. The reason here may be related to the way in which visitors browse online news, as well as the interface design of news websites. It is possible that when visitors hit the paywall and decide whether to click the subscribe-now button or leave (e.g., by clicking the back button or closing the browser window), they may often not scroll down the page and, as a result, do not see the blurred preview of the full length of the article. As a result, its presence or otherwise may be irrelevant to them.

Regarding the decision to finally convert to a subscriber, the results showed that whilst, across the whole sample, price or the offering of smart devices was not significantly associated with visitors finally paying for a subscription, offering discounts was. Some studies have suggested that people care only about whether online news is charged for rather than how much is charged (Chyi 2012; Kammer et al. 2015), and as most news websites have quite similar prices, which are also fairly affordable, people may not think the level of price an important factor in the subscription decision. However, offering a direct discount may provide visitors with the feeling that they are receiving a tangible benefit and encourage them to subscribe. This aligns with previous studies that show price discounts

have a facilitating effect on consumer purchases of products and services, including newspaper subscriptions (Al Hafizi and Ali 2021; American Press Institute 2017). However, this finding may not generalise to markets (e.g., Poland and France) where significantly higher or lower proportions of online news subscribers receive discounts than they do in Germany and Austria (Newman et al. 2024). Although free or subsidised smart devices have a high value, across the whole sample, they were not significantly associated with people's subscription decisions. This may be because such devices were not seen as sufficiently attractive by some visitors given that they may already own smart devices.

The other offer/price-related factors, including the offering of an ePaper, a trial fee, the length of the trial period, and the giving away of small gifts, showed no significant associations with subscribing. Although previous studies (Chyi 2005, 2012; Kammer et al. 2015) indicated readers had a preference for print over online newspapers, which might suggest that offering an ePaper—a digital replica of the print newspaper—would be associated with the decision to subscribe, in the time since those studies were conducted people's perceptions of online news quality may have changed in a way that means they care less about the difference between online and print news. When it comes to online news subscription trials, our results suggest that these may not prompt positive subscription decisions. By now the online news product may be well understood by consumers and hence trials may not prompt the purchase of a subscription. Similarly, the giving away of small gifts does not seem to be a particularly attractive proposition, possibly due to the relatively low values involved.

In terms of the potential influence of offer/price strategies, the comparison between local and remote visitors showed that for local visitors, none of the factors were significant, while for remote visitors, the provision of discounts and smart devices were both significantly correlated with visitors' finally paying for a subscription. Given that local news is a key driver of access to local news websites (Gulyas, O'Hara, and Eilenberg 2018; Lindner 2013, 208), local visitors may care only about the news itself and grant little weight to external factors. Unlike local visitors, remote visitors may lack the same geographical connection with some of the news content on the regional and local news sites in our sample, and so may need more external factors, such as discounts and tangible benefits, to find subscription attractive.

Conclusion and Implications

For news sites, the results of the present study on the potential influence of teaser elements could be of high relevance, not least because few if any previous studies have focused on this aspect. Our findings do, though, present news websites with a dilemma, as the presence of any of the teaser elements negatively correlates with visitors starting the subscription journey. In practice, it would be unlikely that a news website would choose to display only the headline of a paywall locked article. Although showing a picture was negatively correlated with clicking the subscribe-now button, that correlation was not statistically significant, which may make it a good choice as a teaser element alongside the headline as it gives the reader a taste of the news article without significantly reducing the odds that they click on the "subscribe now" button. As discussed, the strong, significant negative correlation between showing a stand-first ("deck" in US-English) or an intro and visitors starting the subscription journey may be

related to the high volume of information that they contain. Therefore, reducing the information volume of these teaser elements could also make sense for news websites. As many of the news websites that we studied showed both a stand-first and an intro on their paywall locked article pages, another possible strategy would be for the publisher to remove one of them, or even both.

With people who had already started their subscription journeys, our findings showed a significant positive correlation between offering a discount and their finally paying for a subscription. It could, therefore, make sense for news publishers to save the budgets that they might devote to small gifts and use it to offer such discounts. It is worth mentioning that, although giving away free or subsidised smart devices was, when all visitors were considered, not significantly correlated with subscribing, the correlation was positive, fairly strong, and close to the significance level (and over the significance level for remote visitors). It is, therefore, a strategy that news publishers should consider. Lastly, in light of the insignificant correlation between trials and people subscribing, a shortening of the trial period might generate more income for news publishers without having negative effects on the propensity to subscribe.

Further insights were provided by the comparison between local and remote visitors. With regard to the decision to finally pay for a subscription, our results showed significant associations between offering smart devices and remote (but not local) visitors subscribing, which suggests that news publishers should consider tailoring promotions to users' geographic locations.

The proportions of the online populations paying for digital news in Germany and Austria have not changed significantly since our fieldwork in 2022 (Newman et al. 2022, 2024). This is one reason why we might expect similar results if the study were to be repeated at the time of writing in November 2024.

Limitations and Further Research

Although we obtained behavioural data for a large number of users, these users came from only 21 regional and local news sites. Furthermore, some of the news websites belonged to the same news groups and shared the same or quite similar paywall strategies. The variability of the independent variables in the present study was thereby reduced, which may limit the generalisability of the results. It would be meaningful for future studies to include more websites with a greater variety of paywall strategies and to consider some of those newsbrands' non-paywall characteristics such as their market orientation (e.g., broadsheet vs tabloid).

This study considered subscription offers only in terms of the availability of an ePaper. In practice, subscription offers and services are more varied, including, for example, subscription packages shared with other family members, access to archives, combined online and print subscriptions, and so on. Whether such offers have a potential influence on people's subscription decisions requires further study. In addition, this study considered only the base price of a subscription. However, as some news websites only offer one subscription package, in some cases the base price reflected the price of ePaper and Plus content, whereas in others it reflected the price of Plus content alone. The comparison of base prices may therefore be problematic from the perspective of the amount of news content available per unit price. This too could be further explored in future research.

Moreover, in addition to the three control variables used in the present study, the size of a news publisher may also have a potential influence. Although, due to data limitations, we were not able to include this control variable, future studies could consider doing so. In addition to whether various teaser elements should or should not be included, further research could examine how characteristics of teaser elements are associated with subscribing behaviour. Indeed, members of the DRIVE project are already working on ways to optimise teaser elements (Moritz Goldschmidt, email, Feb 2024). Finally, we used aggregated data on the news website-level in our analysis. Our models did not include variables on visitors' individual characteristics or behaviour, such as news consumption volume, topic or author preferences, browsing device(s) used (see, e.g., Peña, Malthouse, and Mersey 2023), day/time of visit etc. Further studies could consider working with individual-level data to be able to include such potentially influential variables.

Note

1. Because we were not working with individual-level data, we are not able to conduct multi-level regression analysis.

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