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Consumer Preferences and Willingness to Pay for Digital Journalism in Intermedia Competition: A Conjoint Analysis of Online News Users in the Austrian Market

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ABSTRACT

In the online news landscape, discerning consumer preferences and willingness to pay (WTP) is paramount. Unlike preceding studies, which often simplified these aspects (free vs. paid) or focused on a single provider (e.g., newspapers), our research addresses the realistic case of intermedia news competition. It considers diverse media forms such as TV, newspapers, and online news, along with different access models like full/limited free access, and paywall approaches. We utilize choice-based conjoint analysis (CBCA) on data collected from 1,100 Austrian news consumers to examine the importance of five attributes: access models, provider type, additional content features, scope of news coverage, and price.

Our findings indicate that price is paramount, driving 59.8% of online news consumption decisions. It is followed by the content access model (16.6%) and additional content (10.6%). Two main differentiators of print publishers – the geographical scope of news (8.9%), and the provider type (5.9%) – do not seem to matter much. A latent class analysis (LCA) unveils distinct consumer segments. Only a small part of the audience, dispersed across customer segments exhibits a significant WTP, which appears to be exhausted. This study provides insights into the dynamics of intermedia competition, the role of staggered access models, and consumer preferences.

KEYWORDS

Digital journalism; online news; paywall; free mentality; willingness to pay; paid content

1. Introduction

As the digital news ecosystem continues to evolve, one burning question remains at the forefront of scholarly and industry debates: How do consumers value and pay for digital journalism in an era where free content is ubiquitous (Goyanes, Demeter, and de Grado 2022; Myllylahti 2020)? The digital revolution has widened access to news from a multitude of information sources, spanning from newspapers, and private and public broadcasters to digital-only content providers. It has also unveiled new

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dimensions of content delivery (Berger et al. 2015; Gundlach and Hofmann 2017). This *freemium* culture, coupled with the proliferation of staggered access models – full/limited free access, bundled access, and paywall approaches – has spawned varied business models and challenged traditional ones (Kim et al. 2024).

This study focuses on the product and price preferences of consumers for online news in an intermedia competition between TV, radio, newspapers, magazines, and purely digital publishers (Lischka and Siegert 2022; Myllylahti 2020) – complementing previous studies that focused on single media or provider types. We examine the preferences of online news consumers, particularly their inclination toward different staggered access models, the role of additional content options, and price points (Fletcher and Nielsen 2017; O'Brien 2022).

Our research takes a two-pronged approach to better understand these complexities. First, we employ choice-based conjoint analysis (CBCA), which provides a significant advantage over other stated preference methods (e.g., Ben-Akiva, McFadden, and Train 2019; Hainmueller, Hangartner, and Yamamoto 2015; Völckner 2006) by requiring respondents to make trade-offs between attributes, thus more closely resembling real-world decision-making processes. While conjoint designs face challenges of presenting the information in simplified formats (e.g., in tables), they offer efficiency and cost advantages over full-fledged incentive-aligned experiments, while still capturing relative attribute evaluations and predefined variants. This allows us to derive insights into population preferences and estimate the relative willingness to pay (WTP) for different attributes of online news offerings. Second, we leverage latent class analysis to identify customer segments with similar preferences, offering critical insights into the complex relationship between freely available offerings (e.g., public service media [PSM]) and private sector strategies for monetizing digital content within Austria's digital news market.

We posit that our research will significantly enrich the literature on WTP by studying a more realistic setting where consumers can choose between different types of news providers. This extends previous studies which mostly focused on the intra-provider-type competition (e.g., between newspapers). In addition, we introduce content-based attributes of news differentiation and demonstrate their relative relevance. Further, we extend literature by analyzing the role staggered access models can have on a usage decision. We demonstrate the paramount importance of the price attribute in a multi-media competition setting with several paid and free alternative offerings. Similarly, we show that there is no coherent (large) customer segment that shows high WTP for general news, deepening our understanding of the role of different pricing strategies. Our study finally highlights the impact of a perceived crowding-out of paid content by advertising-financed or public service media (Goyanes, Demeter, and de Grado 2022; Sehl 2023).

2. Background

2.1. Theoretical Background

Ever since the news industry had to recognize that the advertising model of journalistic media offerings has been widely destroyed (Háló, Campos Rueda, and Goyanes

2023) by the superior model of big tech platforms, many news media companies have followed a strategic "pivot to paid content" (Newman and Robertson 2023, 9), geared to increase digital subscription revenues (Newman et al. 2023). From the perspective of Porter's Porter (1985) theory of competitive advantage, these companies are forced to pursue differentiation strategies that allow them to achieve a sustainable price premium. The other strategy offered by Porter (1985) – cost leadership – would result in a ruinous price competition towards a prize of zero (Shapiro and Varian 1999), with presumably dire effects on journalistic quality. That is because according to standard microeconomic theory, the prices of goods that are substitutable for consumers – such as interchangeable news offerings – are inexorably driven down to the level of marginal cost by price competition (e.g., Cleaver 2024).

Whereas, on a company level, media firms may be able to pursue organizational differentiation strategies such as vertical integration, on a product level, online journalistic media offerings can differentiate themselves mainly through intangible features. Newspaper research early identified the provider type (e.g., Thompson 1988), content scope (e.g., McQuail 1977), and, of course, price as major differentiation options. These dimensions are also considered as the most relevant dimensions in surveys on digital news consumption (e.g., for Germany, the US and the UK, Newman et al. 2023).

First and foremost, the content offering itself has been identified as a source of differentiation. This may include the political leaning of publications (Kind, Schjelderup, and Stähler 2013), but also its thematic (Berger et al. 2015; Thompson 1988) or geographical focus (Örnebring, Kingsepp, and Möller 2020). General news offerings might also differentiate through bundling with other content – e.g., sports and weather information (Cleary and Bloom 2011), or multimedia elements (Gundlach and Hofmann 2017) – in line with the economic theory of bundling (cf. esp. Bakos and Brynjolfsson 1999; Erbrich et al. 2024).

Due to the "journalism paradox" (Lobigs 2015, 379) journalism is one of the so-called "credence goods" that exhibit a "quality dilemma" on the market, which, according to game-theoretical analysis, can at best be overcome by reputation mechanisms (Rasmusen 2006). Therefore, academic research considers the brand image as a major differentiator (Arrese and Pérez-Latre 2017). More broadly, different categories of providers (as product-market combinations) may incorporate such a quality distinction, based on production settings and journalistic style, e.g., tabloid vs. broadsheet or Sunday newspapers (Berger et al. 2015; Thompson 1988). Regarding intermedia competition, substitutability research compared different classes of media types (Jang and Park 2016). The relevance of provider type classes for product differentiation is also underscored by user research which consistently ranks newspapers among the most credible and qualitative news sources (Wellbrock and Wolfram 2021).

Finally, media products can differentiate themselves through price. In addition (O'Brien, Wellbrock, and Kleer 2020) to the identification of specific price points (Berger et al. 2015), modal aspects of price have been studied. These include the length of a subscription (Berger et al. 2015), but also the access model, i.e., the scope and size of the offering that is available at a given price point. This may include advertising-free online offerings for those who dislike online ads very much (Anderson and Gabszewicz

2006), but also additional access modes such as e-paper offerings for newspapers (Berger et al. 2015). We therefore formulate the following research question:

RQ1. How do users value different aspects of online news offerings (publisher type, access models, additional content, price points) relative to one another?

In light of the paramount importance of being able to establish a price for (differentiated) news products, scholars from a diverse range of fields, including media management, journalism, and communication studies have been deeply engaged with the issue of willingness to pay (WTP) for news media, and the critical challenge of its absence (Myllylahti 2020). Whereas potential WTP can be considered high and relatively constant, the actual skimming potential – those users that publishers can convert – is significantly smaller, varies over time, and can be affected by publisher strategies. Thus, studies show wide-ranging percentages of respondents willing to pay for digital journalism, with values as low as 7% in Estonia (Himma-Kadakas and Kõuts 2015) and as high as 47% in Germany (Reichmann and Klimmt 2012), while at the same time, the actual proportion of people who paid for digital journalism in a given year is significantly lower (e.g., 11% for Germany, down 3% year-on-year, Newman et al. 2022, 2023). Meanwhile, the rise of digital subscriptions has stalled internationally since 2021 despite all costly marketing efforts and often drastic discounts (Newman et al. 2023; Newman and Robertson 2023). Theoretically, several factors negatively affect the WTP for online news:

- Since original researched factual journalistic information cannot be subjected to copyright protection (e.g., Besen 2002), "parasitic" editorial "curation models" offer themselves as cost-effective substitution competition against news media that try to use relevant original reporting as a brand differentiator. This problem will continue to grow in online competition based on the economic theory of intellectual property rights (Lobigs 2015). This development may be supercharged by the development of generative AI.
- News media are to a considerable extent to be regarded as public goods with strong positive externalities for democratic societies but with weak individual payment incentives (Pickard 2019). The economic conclusion to be drawn from this is that WTP in today's "high choice environment" of the internet will continue to decline – from an already low level today. Some consumers also feel they have already paid for news through internet service providers, through the license fees for public service (Fletcher and Nielsen 2017; Háló, Campos Rueda, and Goyanes 2023), or through attention sold to advertisers, leading to a preference for free news alternatives (O'Brien 2022). This *free mentality* views online news as a public good, freely accessible to all (Dou 2004; Goyanes, Demeter, and de Grado 2022; Niemand, Mai, and Kraus 2019), which can be traced back to historical advertising-based business models where news was largely free to the recipient, setting a reference price of zero.
- As the digital transformation of traditional news providers continues to significantly reduce their overall revenue potential (e.g., Flew and Stepnik 2023), the game-theoretical economic conditions for the differentiation of news offerings

through brand reputation on the Internet are also increasingly dissolving (Lobigs 2015). This is because the necessary editorial fixed and sunk cost investments in journalistic quality reputations on the internet will increasingly no longer pay off for many if not for most traditional news publishers. However, without sufficiently differentiated premium offers, it will hardly be possible to maintain premium prices that exceed marginal costs.

Given the previous theoretical findings and empirical state of research, we thus propose the following research question:

RQ2. How does the willingness to pay (WTP) vary with different dimensional attributes of online news offerings?

Finally, the literature on media competition demonstrates that news offerings may not only be differentiated by product characteristics, but that the latter's relevance may also vary by consumer (groups), affecting individual or group willingness to pay. Several socio-demographic aspects have been studied, aiming at identifying customer segments with a consistently high(er) WTP for digital news. Thus, previous studies found that age may negatively affect paying for general content, whereas its impact on WTP is ambiguous (Beier, Mladenow, and Strauss 2018; Goyanes 2014). The same can be said for gender (O'Brien, Wellbrock, and Kleer 2020). Education has not been addressed with regards to WTP but was shown to affect past payment for digital journalism products (Punj 2015; Goyanes and Vara-Miguel 2017). Higher Income was found to correlate with higher paying intent (Beier, Mladenow, and Strauss 2018; Fletcher and Nielsen 2017). Previous research demonstrated that media usage – particularly print usage (Chyi 2005) and subscriptions (Fletcher and Nielsen 2017), but also TV usage (Chyi 2012) – can positively increase the acceptance of paid digital journalism. On the contrary, online media use only has a small effect on paying intent, whereas purchase behaviour of (other) digital goods exerts a stronger influence (Goyanes 2014). Additionally, news interest clearly significantly increases paying intent for digital news (Chyi 2012; Chyi and Lee 2013; Fletcher and Nielsen 2017; Sindermann, Kannen, and Montag 2024). Regarding these attitudinal aspects, the already discussed free mentality was shown to negatively affect paying intent (O'Brien 2022). The importance of trust was demonstrated for WTP for e-commerce products (Buturoiu, Corbu, and Boțan 2023; Kim, Ferrin, and Rao 2008). Empirical evidence indicating that trust in and WTP for digital news is significantly lower than for print offerings may indeed indicate a positive relationship (O'Brien, Wellbrock, and Kleer 2020). Given that local digital journalism was found to attract higher paying intent (Goyanes 2015), but not necessarily higher WTP (Berger et al. 2015), the interest in local news – which in turn may be influenced by the local sense of belonging – could also be of interest. From an intermedia competition perspective, the question arises if these attributes can be synthesized into market segments that online news providers may be able to target. We therefore formulate the following research question:

RQ3. What preference clusters for digital journalism can be identified in this intermedia competition landscape?

2.2. Choice-Based Conjoint Analysis of Online News Preferences

Different methodologies are employed to measure product characteristics, WTP and the elements affecting it, resulting in the observation of *revealed* and *stated* preferences (Breidert, Hahsler, and Reutterer 2006; Völckner 2006). Revealed preference methods capitalize on tangible or simulated price-response data from real-world companies or (quasi) experiments (Breidert, Hahsler, and Reutterer 2006). For example, Chyi and Ng (2020) demonstrated a low WTP in the US market by analyzing real-world market data in relation to price, thus stating that only 3% of revenues stem from online news, even though publishers set the price for the online product substantially lower. Stated preference measurements are often ascertained through either direct or indirect surveys (O'Brien, Wellbrock, and Kleer 2020). Direct surveys (e.g., Fletcher and Nielsen 2017; Goyanes, Artero, and Zapata 2021; O'Brien 2022) simply ask the respondents whether and/or how much they pay for online news, or if they are inclined to do so in the future, establishing that only a single-digit or a low double-digit percentage of the population pay or would pay. Indirect survey techniques, such as ranking and CBCA, adopt an alternative strategy. CBCA, as one of the most widely used methods for pricing research, examines the appropriate market price of a product, particularly in relation to specific product attributes (Dobney, Ochoa, and Revilla 2017).

Within the framework of CBCA, respondents indirectly disclose their WTP by revealing their underlying preference structures corresponding to the given price. They are presented with products, each constituting a combination of pre-determined attributes (such as quality, size, and functions), and they are then asked to rank or choose between these offerings.

In the context of media and online news research, several studies have employed CBCA to determine various factors affecting consumer preferences. For instance, Chyi (2012) conducted a conjoint study incorporating format as an attribute and found that print is preferred much more than digital, with the most desired product format being a bundle of print and online, reversing earlier findings based on a direct study (Chyi 2005). This finding was supported by Berger et al. (2015) in another conjoint study of newspaper offerings, where the format was identified as the second most crucial factor (after price). They concluded that there was a considerably higher WTP for print products compared to digital ones.

In examining the digital product's media features of tablet news apps – such as the integration of text, pictures, audio, video, and multimedia – Gundlach and Hofmann (2017) found no considerable impact of these product characteristics on the WTP. The breadth of content, including offerings from both print and online mediums, held relatively high importance for the purchase decision (17%). Reichmann and Klimmt (2012) reported that the mode of technological access via different media (e.g., smartphone, desktop, tablet) positively impacts WTP, and is particularly strong if various access modes are available. This research was concerned with only one provider type and did not account for different geographical scopes of news (national, local…), instead considering local news a separate part of the media offering. Further research by Oechslein (2014) examined a personalized news aggregator, again with no consideration of the type or scope of news, but with a focus on offline access/

archive access preferences – suggesting that it contributes minimally to the overall consumer decision. Concerning news on social networking sites, another conjoint study examined attributes contributing to preferences for reading and sharing, which depend, e.g., on the political affiliation of the source (Johannesson and Knudsen 2021). CBCA has also been used to explore the role of customization/personalization of news, referring to any factors that adapt a product to the respective consumer's personality and needs, such as personal archive options and integration of a social media interface. Some studies found no significant overall impact (Gundlach and Hofmann 2017; Oechslein 2014). Intriguingly, these studies focused on the interaction effects of different offerings by a single publisher type, neglecting the realistic competition landscape where users choose between online news provided by different media types and with different access models.

2.3. News Market in Austria

The Austrian news market is characterized by a significant reliance on traditional media. Television remains the primary source for news consumption, with 61.6% of Austrians using TV news programs weekly in 2022 (Gadringer et al. 2022). Radio follows at 50.8%, significantly surpassing global averages. Print media also holds a notable position, with 42.3% weekly consumption – far above European and global averages. Newspapers also enjoy a high level of subscriptions (1.522 million for a population on 9.0 million, ÖAK, 2022) – despite a wide distribution of free newspapers financed by advertising (with a total circulation of 5.087 million in 2022, ÖAK, 2022). Digital news sources are increasingly important, especially among younger demographics. In total, 47.4% get their news via social media; and 40.9% via digital offerings from newspapers. Overall news interest is high, with 83% of consumers accessing news content at least daily (Gadringer et al. 2022). Regarding digital news, the most relevant publishers include public service media ORF.at, the largest newspapers (krone.at, standard.at, kurier.at), but also free newspapers (heute.at, oe24.at). Additionally, mail provider gmx.at features among the top providers – as well as private electronic media (RMA Austria, puls24.at, kronehit.at news), despite their patchy online news offerings.

3. Method

3.1. Survey Methodology

The core of this research is the survey of product and price preferences of Austrian media users in the field of online news offers. This allows us to evaluate the attractiveness of specific offerings or individual elements of these offerings (i.e., relating to access model, additional content, provider type, and price in particular).

To strengthen validity and reliability, a (at least in the context of communication studies addressing the Austrian market) relatively large sample of $n = 1{,}100$ participants was taken. Furthermore, the respondents were chosen with the aim to represent the Austrian adult population between 14 and 75 years of age regarding age group, gender, education, and regional distribution. The field phase was conducted by

MarketAgent, a reputable, ISO norm 20252 certified online access panel provider in February 2023.

In the CBCA, respondents were confronted with sets of hypothetical online news offerings, algorithmically generated based on predefined, pertinent content categories (see below), also having the "none" option of selecting neither of the alternatives (Berger et al. 2015; Eggers et al. 2021). These offerings simulate the complexity of real-world decision-making scenarios, compelling respondents to weigh the relative importance of various factors in their selections (Eggers et al. 2021). The choices made by the respondents then allow for the calculation of part-worth utilities, or the relative weights that the different content characteristics carry in the usage decision. To reduce respondent fatigue (when answering the entire questionnaire) and the risk of cognitive overload, the number of selection decisions for each respondent was limited to four.

To describe the product alternatives from the user's perspective, the characteristics and their manifestations presented in Table A1 were used. Our CBCA centers around five attributes: provider type, scope of news, additional content (i.e., sports, weather, entertainment, news videos), access model (i.e., full online access incl. digital versions, full online access, limited access to some free articles/freemium, and full ad-financed access), and price. The important price attribute was differentiated into eight price points ranging from €0 to €29. This design enables us to dissect how individual product characteristics influence preferences for specific price points, notably the zero-price point. The relevant criteria were derived based on the literature and empirical studies on news media differentiation (e.g., Berger et al. 2015; Gundlach and Hofmann 2017; Reichmann and Klimmt 2012) and a preliminary analysis of observable product and price attributes of the journalistic competition in Austria. Theoretically possible combinations of manifestations that do not make sense in practice (e.g., free access in combination with a price above zero) were not displayed. We implemented this via the Sawtooth Software's Hierarchical Bayes (HB) estimation method (see Technical Appendix TA1).

Provider type includes Radio/TV broadcaster, Print newspaper/magazine, and Digital pure play. The choice of provider type is influenced by the evolving landscape of digital journalism, as seen in studies by Chyi (2012) and Berger et al. (2015) which emphasized the varying consumer preferences for different media formats. The attribute scope of news mirrors findings from Johannesson and Knudsen (2021) and Reichmann and Klimmt (2012), who highlighted the importance of the geographical scope of news in shaping consumer preferences. The importance of additional content, encompassing offerings of different content types, was also studied by Gundlach and Hofmann (2017). We also considered different access models like ad-free full access, digital version with ad-free access, selective free content, and full access with advertising. This attribute acknowledges the diversity in access modes and their impact on WTP as highlighted by Reichmann and Klimmt (2012), and Gundlach and Hofmann (2017). Price as an attribute is central to WTP studies, as indicated in the work of Breidert, Hahsler, and Reutterer (2006) and Völckner (2006) on WTP measurements, and Berger et al. (2015) or Gundlach and Hofmann (2017) in practical terms, underscoring the importance of price sensitivity in consumer decision-making processes.

In addition to the CBCA, pre- and post-usage surveys regarding online news usage behavior, WTP, and current usage of both paid and free digital news offerings were administered. These additional direct user surveys clarified individual usage issues that cannot be addressed with conjoint analysis. While only product features and no brands were offered for selection in the CBCA itself (to avoid brand-based bias), brand names or the names of offers were used in some of the questions after the CBCA. The items used in these surveys were based on scientific literature and established surveys on the subject area, such as the Digital News Report Network Austria 2022 (Gadringer et al. 2022).

3.2. Data Analysis

After data collection, the data set was checked for inconsistent response behavior. As a further quality assurance measure, the individual root likelihood (RLH) values of the respondents were checked to identify random or contradictory decisions. However, no abnormalities emerged here; even after checking for conceivable serial clicking behavior, no respondents had to be excluded.

The preferences were then determined using a CBCA. We specifically used the CBC Hierarchical Bayes (HB) software from Sawtooth to calculate individualized part-worths for each participant. This HB approach is a long-established international research method (Breidert, Hahsler, and Reutterer 2006; Eggers et al. 2021 Allenby and Rossi 2006; Lenk et al. 1996) which is used extensively by companies, for example, to estimate the relevance of individual product characteristics for the purchasing decision and WTP of customers. The part-worth utilities derived from this approach correspond to the attribute-level effects estimated via other established models, such as Average Marginal Component Effects (AMCE; Horiuchi, Smith, and Yamamoto 2018; Orne and Howell 2009). While both methods produce comparable results on aggregate, we opted for the HB framework since it allows for a more nuanced exploration of preference variability across subgroups (for a more in-depth discussion, see Technical Appendix TA2).

Beyond the CBCA, we implemented latent class analysis using Sawtooth Latent Class software to identify customer segments within our participant pool (DeSarbo, Ramaswamy, and Cohen 1995; Magidson, Eagle, and Vermunt 2003). This technique clusters respondents based on their preference structures, providing a more granular understanding of distinct consumer groups (for technical details, see Technical Appendix TA3). The latent classes resulting from this analysis serve as a basis for further examination of between-group differences in terms of variables like free mentality, use of PSM, anticipated behaviors if PSM disappears, and socio-demographics.

4. Results

Descriptive Results are represented in Table A2 in the Appendix A. In the following, preferences and part-worth utilities (4.1.), relative willingness to pay for the attribute Levels and customer segments that were identified via latent clusters methodology are reported.

4.1. Preferences and Part-Worth Utilities

The conjoint analysis reveals the ranking and relative importance of each queried feature. The most critical feature, accounting for 57.87% of the entire selection decision, is by far the price of the offering (Table A3).

Above all, the price of zero displays the highest partial utility value across all categories (+205.45, the value given in parenthesis indicates the importance relative to the average benefit, see Table A4). For example, the price of €29/month has a strong below-average utility of the "price" feature (−83.91). The huge partial utility value of +205.45 for the marginal cost price of zero shows that consumers are not very inclined to pay for news. For the point estimates including the confidence intervals, see Figure 1.

The content access model follows in second place, contributing 14.05% to the decision-making process. Full access to the digital version in combination with ad-free full access shows the highest partial utility value in the category (+20.96), while limited access to just a few news pieces is the least popular (−49.27). Ad-financed full access (9.59), meanwhile, has an above-average influence on the average utility of the "access model" feature.

The respondents perceived comprehensive additional content as the third most important content differentiator, accounting for 13.25% of the selection decision. Weather content (+14.78) was considered a particularly relevant differentiator, followed

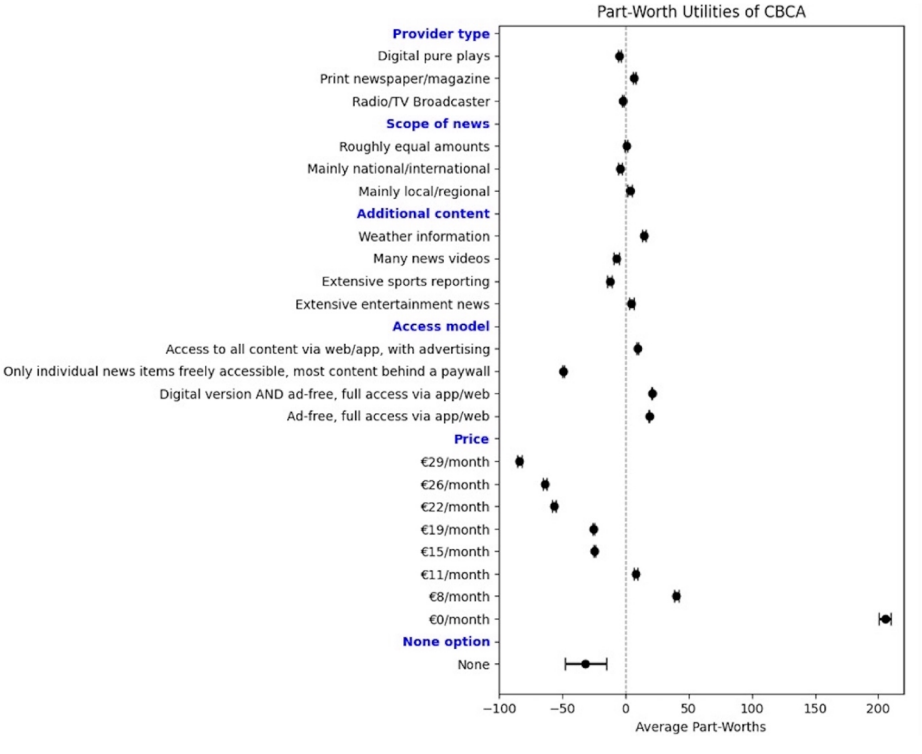

Figure 1. Part-worth utilities of CBCA with confidence interval. *Source*: Authors' own analysis and representation

by extensive entertainment news, and a comprehensive video offering. Finally, strong sports coverage displayed below-average importance (−12.52).

The geographical scope of the news provided, which determines the blend of regional/local and national/international news, shapes the selection decisions by 8.91%. Offers focusing more on local/regional news were assessed as slightly above average (+3.39), while those focused more on national/international news were considered slightly below average in attractiveness (−4.09), and a mixed option as roughly neutral (0.70).

The respondents assigned the least relevance to the provider type of the news offering (5.93%). Here, offers from print publishers with a partial utility value of +6.84 lead over those from TV/radio providers (−2.14) or pure online providers (−4.70). Of course, the very low relevance of the type of news source contrasts strikingly with the paramount importance of getting the news for free.

4.3. Relative Willingness to Pay for the Attribute Levels

The individual estimates for the preferences also allow the estimation of the WTP relative to a base level of the attributes. This analysis provides insights into how much respondents are prepared to pay for different attribute levels of online news providers in relation to one another. We determined the reference level manually so that the option with the highest relative WTP serves as a reference and all relative WTP differences are negative.

For the attribute "provider type", consumers showed a willingness to pay €1.00 less for online news from radio/TV broadcasters compared to print newspapers/magazines (the reference level). They were even less inclined to pay for offerings from *digital pure plays* (online publishers without a relationship to print or broadcasting), with a negative WTP of €2.2 compared to the reference level.

Regarding the geographical "scope of news," respondents were willing to pay €1.80 less for a product consisting mainly of local/regional news and covering only the most important national and international news, which is in line with results from recent experiments on the valuation of online news (Hopkins and Gorton 2023). When it came to sources offering mainly national/international news and only individual regional news, the relative difference of WTP decreased to €0.50.

In terms of "additional content," respondents were less inclined to pay for extensive entertainment news, sports reporting, and news videos. The negative WTP for these attributes was €1.30, €2.50, and €3.00, respectively. Weather information was the reference level in this case.

For the "access model" attribute, respondents were willing to pay €0.20 less for ad-free, full access than for full-fledged access which also includes the provision of a digital version (which was designated as the reference level). The most significant negative WTP was recorded for services that provided only selected news items freely, with most content behind a paywall, where respondents indicated a €7.00 decrease in the WTP. Access to all content via web/app, with advertising, was valued at €1.90 less than the reference level.

These results suggest that respondents value print newspapers/magazines as the provider type, a balanced scope of news, weather information as additional content,

and comprehensive ad-free access including a digital version the most. On the other hand, they are less willing to pay for services that offer fewer features, particularly if most of the content is behind a paywall. For a summary, see Appendix Table A5.

4.4. Customer Segments via Latent Clusters

The latent class analysis, using Sawtooth software, segmented the respondent population into four distinct groups (see Technical Appendix TA4). Each cluster represents a consumer group, with part-worths reflecting preferences for online news services. The clusters also exhibited unique characteristics (see Appendix Tables A7 and A8).

The first cluster, "Paid Journalism Potentials" (27.9%), consisted of young, proactive users with strong global belonging, high trust in news, and preferences for local/national news. This cluster made up a significant portion of the audience that had paid for news in the past year, exhibiting the lowest level of free mentality. They valued PSM content (e.g., ORF) and additional features like sports and weather. Cluster 1 had the most print subscribers (40%, vs. around 25% for clusters 2, 3, and 4) and preferred ad-free, full-access models, but showed low affinity for digital-only sources (−14.43). They exhibited the highest likelihood of future payments (2.58 on a Likert scale).

The "Price-conscious News Seekers" represented the largest cluster (34.6%). Despite being the wealthiest (and oldest) segment, they showed a high level of price awareness. They preferred free content and had the strongest agreement with the statement "Digital content on the internet should be free, therefore I would never pay for it" (6.08 on a 7-point Likert scale). This group showed a preference for print newspapers/magazines and digital pure-play providers, but news from radio/TV broadcasters had a negative part-worth compared to the average of the attribute (−6.50). They favored full access, either ad-free or with advertising, and strongly disliked content behind a paywall. Price was particularly important for this group, with 77% of the decision being made based on price.

"Social News Explorers" (23.3%) relied on social media (19%) and newspaper apps (21%), favoring print newspapers (12.47 part-worth) as news providers. They are relatively young and demonstrate high levels of trust in the news. Only 28% of this cluster paid for print news itself. This group had positive part-worths for all access types, except for the ones where most content was behind a paywall. They exhibited similar behavior to Cluster 2 regarding price, showing a high part-worth for free access (199.73) and a sharp decrease as the price increased. Interestingly, this group also showed a high part-worth for extensive entertainment news (14.60), higher than any other cluster. Additionally, trust in news sources was the highest in this cluster, expressing the strongest agreement with the statement "I believe I can trust most news sources in most cases" (3.79 on a 7-point Likert scale).

Finally, the "News Skeptics" (14.2% of respondents) displayed the least interest in news and the lowest frequency of news consumption. This predominantly older and male group had a remarkably low rate of online news consumption, with 73% not using online news at all, compared to around 42–52% in the other clusters. This group displayed a high resistance toward paying for online news at all, with only 4% having paid for it in the past. Unlike the other clusters, this group showed a positive

part-worth for news from radio/TV broadcasters and a negative part-worth for print newspapers/magazines. They also assigned high part-worths for ad-free full access, and access to all content with advertising, but had a significant aversion to content behind a paywall. Here, additional access to a digital version substantially increased the part-worth over the ad-free full-access model. This group showed the lowest level of trust in news media and included the highest percentage of participants who would not consume any other news offerings in case of discontinuation of ORF (30%).

All groups displayed a clear preference for ad-free, full-access models and a strong aversion to content behind a paywall. Additionally, they all preferred free access, but exhibited decreasing willingness to pay as prices increased. These insights shed light on the varied consumer preferences in the online news market and can guide strategies for pricing and content provision.

5. Discussion

Our analysis provides valuable insights into Austrian users' online news consumption preferences and the analysis of the WTP for digital journalism. The dominance of price in decision-making aligns with prior studies (Berger et al. 2015; Erbrich et al. 2024; Gundlach and Hofmann 2017). This highlights the challenges news providers face in monetizing interchangeable content. Consumer reluctance to pay for news remains an obstacle, consistent with the "free mentality," which is unlikely to change (Section 2.1).

The analysis shows that the provider type (print, television, or even newer and less established digital pure play sources) is not very relevant to the users' consumption choices. This is surprising, since especially print publishers consider their brands – as a home for high-quality journalism – to be a significant differentiator, and questions traditional brand-differentiation strategies to address information asymmetries in the marketplace (Lobigs 2015). Consequently, the geographical scope/mix of online news (i.e., international, national, local news) – which can also be considered one of the most foundational editorial choices of an online news offering (particularly from print publications) – also only plays a minor role in the customer decision (Hopkins and Gorton 2023).

Instead, editorial and commercial aspects with no direct connection to news, like additional content, gain importance. Weather information's high value reflects Austria's unique geography (e.g., to warn of disasters; Keul and Holzer 2013). Sports content appeals to specific user groups (as demonstrated in our latent class analysis for Cluster 2), suggesting targeted strategies to enhance news content's non-monetary value.

Furthermore, the analysis showed that access models are more important than all content-related attributes. Whereas full free access is strongly preferred, consumers also differentiate between staggered access models. Here (except for Cluster 4), models that eliminated advertising increased their utility the most, as expected by our theoretical analysis (Cleaver 2024; Porter 1985; Shapiro and Varian 1999). By contrast, the additional provision of a digital version (once again with the exception of Cluster 4) only yielded small increases in part-worths. This also may limit the print publishers' potential to convert online news users to paid content subscribers. This is reflected in the marketplace, where the largest increase in digital version circulation is generated by offering existing print subscribers a digital bundle, often at very low prices.

As recent analyses of the German market show, large portions of digital-only subscriptions in Germany in many cases are as low as €2 (Dusch 2022).

Finally, while prior studies emphasized the paramount role of price and the significance of a price of zero, our research uniquely examined these aspects within a realistic intermedia competition setting where users are presented with staggered content access models from different provider types to choose from. In the Austrian setting, where a large part of the online news competition is provided by ad-financed or otherwise free media (Zabel, O'Brien, and Lobigs 2024), this leaves particularly little wiggle room for publishers to monetize their offerings. Here – even if it comes with a steep discount regarding its relative utility – the low price point of €8 is the second most attractive option in the consumer set. In any event, this price point is a far cry from what most premium publishers offer in the marketplace, which in Austria are prices of €11 to €19 or more (including discounts). These findings emphasize the necessity of coming up with innovative pricing strategies, which could include flexible pricing or bundling with other services to enhance the perceived value.

In addition, the analysis shows room for differentiation, albeit very limited. For example, print publishers can command a price premium over other content provider types. However, this only applies to consumers who already chose to pay for digital journalism offerings, the group of which seems to be limited. In our latent class analysis, only Cluster 1 displayed a significantly higher WTP for digital content – and even here, only 12% of the consumers would opt to pay for digital journalism if the public broadcaster ORF were to cease its online offerings (as the most relevant news source in this group). Based on our calculations, the overall subscriber potential in this group seems to be almost completely exhausted already, which means that there is little room for further growth. The results also show that the provision of ePapers in addition to full-fledged access to newspapers' online offerings only increases WTP slightly (+€0.20). This hints at the fact that most users do not perceive the digital version as a relevant differentiator.

The strong preference for free access also points to the competition news providers face from freely accessible content online. It is intriguing to note that even though social media emerged as a significant channel for news, respondents did not show a higher willingness to pay for digital pure-play providers. This could be due to a perception of lower credibility or quality compared to traditional news sources like print newspapers or magazines.

5.1. Implications

The findings of this study have important implications for both academic researchers and news providers. For academics, this study contributes to our understanding of the factors influencing the consumption of online news, which can inform future research in this domain. From a theoretical perspective, the study indicates that differentiation of general news providers remains weak and incomplete when in an intermedia competition setting. This runs counter to previous findings positing the potential of branding (Arrese and Pérez-Latre 2017) or quality differentiation (Berger et al. 2015; Thompson 1988). In an intermedia competition, our findings show that provider type classes do serve as effective differentiators, even if the product classes

themselves are considered credible and high-quality news sources (Wellbrock and Wolfram 2021). Where previous research on different pricing strategies found a differentiated (albeit lower) WTP for online offerings (e.g., Berger et al. 2015), in an intermedia setting with alternative offerings, WTP collapses, underscoring the pronounced role of the zero price in the digital news consumption landscape. Obviously, online news providers serve as effective substitution competition against news media that try to use relevant original reporting as a brand differentiation feature, as predicted by intellectual property rights theory (Lobigs and Siegert 2008). This could be seen as a specific case of adverse selection (Akerlof 1970), where the problem does not lie in information asymmetries and the incapability of buyers to collect quality information signals, but where sellers can easily "copy" quality differentiators such as exclusive content at (almost) zero cost. The analysis also showed that in the cluster of consumers most likely to subscribe to digital news, only a small fraction was doing so – and this group is spread across different customer clusters. This might indicate that the market potential of digital journalism offerings (at least in the Austrian case) is limited, even if there is a global WTP.

Taking three findings of our study into account – the paramount importance of the price attribute, the strong preference for a price of zero and the absence of large customer segments with consistent WTP – the theoretical rationale outlined in this article is vindicated. WTP is particularly low for general news. This is underscored by empirical evidence such as the success of content verticals or specialized news offerings, which shows that WTP does exist for (very) narrow thematical niches (Müller 2023). However, the (potential) customer groups for these offerings may too small to be captured by traditional market segmentation approaches.

Given the low WTP for general news, this suggests that PSM with statute as quality providers play an indispensable role in this segment to ensure a good supply of quality news to all segments of the population. It is crucial to recognize the potential dynamics between freely accessible news and commercial news outlets. If PSM were to withdraw from providing free news, it is not to be expected that the less attractive pay options would gain significant traction among users (Zabel, O'Brien, and Lobigs 2024). Especially when other free options remain available, which quite obviously will be the case, our theory as well as our findings suggest that users will continue to gravitate toward these alternatives.

Regarding implications for news providers, understanding general customer clusters (and particularly customer niches) is crucial for tailoring their online news offerings to meet the needs and preferences of different user groups. The high price sensitivity across all clusters underscores the need for publishers to continue exploring sustainable business models that can balance dispersed WTP with the necessity of generating revenue from online news content.

On the other hand, publishers must brace themselves for significant marketing expenditures when addressing this group – since only a small fraction within this "eligible" group can be converted. Discerning which users within the relatively homogenous cluster we identified are addressable promises to increase marketing efficiency significantly. This is all the more true if niche customers for specialized content (e.g., verticals) are to be addressed.

Moreover, considering the influential role of price in decision-making processes and the prevailing free mentality, news providers should consider expanding their

revenue strategies beyond traditional subscription models. Access models might be more mission-critical than the content itself, reminiscent of findings in previous studies on virtual reality (Kunz, Zabel, and Telkmann 2022), where enabling factors significantly impact the core experience. Innovations such as pay-per-article systems, freemium models, membership programs, or cooperative bundling platforms as a "Spotify for news" (cf. Erbrich et al. 2024) could become valuable alternatives. The limited appeal that the provision of digital versions adds to the preferred ad-free, full-fledged access shows that digital print products may play a stronger role in converting or retaining print subscribers but are not a panacea to increase digital subscription revenues.

The role of additional content in decision-making underscores the need for tailoring such content to the audience's interests. A one-size-fits-all approach might not be effective, particularly in terms of sports coverage, which was only found to be appealing to a subset of the respondents. Here, the four distinct segments identified in our study point to the potential of personalization and customization for improving the attractiveness of online news offerings. News providers could consider offering customizable news packages that cater to the specific preferences of different segments. This could include discounted subscription packages (e.g., for the group of paid journalism potentials) or freemium/sponsored content (e.g., for the group of social news explorers). Finally, recruiting offline news consumers (Cluster 4), perhaps by providing content that is exclusively online or offering trial periods, might even be an interesting strategy. Bundling news with other value-adding services might also prove to be a beneficial strategy in this evolving landscape, where the challenge is not just attracting consumers, it is also maintaining their engagement and willingness to pay in a market that has many free alternatives.

6. Conclusion

This study illuminates the varied product and price preferences within the online news market. It highlights the realistic case of intermedia competition, where news providers are competing across various media types, increasing the complexity (and real-worldness) of the competitive environment. The study demonstrates and confirms the decisive influence of the price attribute and more specifically the paramount importance of the zero-price attribute that is predicted by the economic laws of price competition for goods that are regarded as substitutable. At the same time, provider type and content scope (mix of news) – which are cornerstones of print publishers' differentiation strategies – only play minor roles in customer decisions.

In addition, the study brings to light the importance of staggered access models and underscores the limited additional appeal of digital editions, another publisher strategy. Given the users' satisfaction with varying degrees of access, the question is not strictly about free versus paid content. Rather, the challenge for news providers is balancing free offerings, especially for those not wholly ad-financed, against different access levels.

This emphasizes the necessity of accounting for multiple consumer segments when formulating content and pricing strategies. By utilizing a latent class analysis approach, we discerned four unique clusters of consumers, each exhibiting distinct preferences and attitudes toward different aspects of online news. Significantly, only one group displayed a substantially higher WTP for digital journalism; and even here, only a

small fraction of this group were digital subscribers, pointing to a limited market potential that in the Austrian case might already be actualized.

These findings imply that the one-size-fits-all approach may not be effective in the increasingly competitive online news market. Tailored strategies that cater to the unique preferences of each cluster could be more successful. For instance, offering a variety of content and access options may cater to a wider audience and enhance their overall experience, ultimately increasing engagement and potential revenue streams.

However, despite these compelling insights, our study has certain limitations. The latent class analysis relies on the assumption that the clusters are homogeneous, which may not capture the full range of heterogeneity within each cluster. Moreover, the study is cross-sectional, and hence it does not account for potential changes in consumer preferences over time. Longitudinal studies could provide a deeper understanding of the dynamic nature of consumer behavior in this domain.

The CBCA assumes that respondents always select the option that corresponds to their preferences during the CBCA, allowing for the option to not select any of the choices presented. This assumes that respondents have complete information about the market and that the proposed options reflect the selection-relevant features. Given the relatively clear nature of the Austrian online journalistic competition, at least in a narrower sense, a good market overview is likely to be available.

Our findings also pave the way for several future research directions. A deeper examination of the factors driving these preferences, such as socio-demographic characteristics, media literacy, or trust in media, could further refine the understanding of these consumer segments. Furthermore, experimental studies could be employed to test the effectiveness of different content and pricing strategies tailored to each cluster, providing actionable insights for industry practitioners. This study underscores the nuanced nature of consumer preferences in the online news market, which could be addressed in further research. For example, the identified "News Skeptics" cluster merits further attention. Active news avoidance or a lack of political interest has recently attracted increasing academic attention (Newman et al. 2021, 2023). As online news forms one pillar of democracy-supporting journalism (McQuail 1977), future research should try to further illuminate the news consumption motives and trade-off decisions regarding offerings funded by advertising and license fees in this group.

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Appendix A

Technical Appendix TA1

Sawtooth's framework allows for flexible parameter estimation, despite the existence of excluded combinations. The software accommodates restrictions by leveraging priors across the attribute levels and estimating part-worth utilities for feasible combinations only. This ensures that the model does not assign part-worths to unrealistic combinations, while still maintaining robust

Table A1. Product attributes used in the CBCA.

Attributes	Levels
Provider type	(1) Radio/TV broadcaster
	(2) Print newspaper/magazine
	(3) Digital pure play (online publisher without relationship to print/radio/TV)
Scope of news	(1) Mainly local/regional news and the most important national/international news
	(2) Mainly national/international news and individual regional news
	(3) Roughly equal amounts of national/international and local/regional news
Additional content	(1) Extensive entertainment news (celebrities/stars, TV formats, events…)
	(2) Extensive sports reporting (e.g., about football, skiing…, athletes, transfers)
	(3) Many news videos
	(4) Weather information
Access model	(1) Ad-free, full access via app/web (e.g., Plus offers)
	(2) E-Paper AND ad-free, full access via app/web (e.g., Plus offers)
	(3) Only individual news items freely accessible, most content behind a paywall (price = 0)
	(4) Access to all content via web/app, with advertising (price = 0)
Price	(1) no direct payments (€0)
	(2) €8/month
	(3) €11/month
	(4) €15/month
	(5) €19/month
	(6) €22/month
	(7) €26/month
	(8) €29/month

preference estimates for valid profiles. As discussed in Sawtooth's technical papers (e.g., Orme 2009; Orme and Howell 2009), the HB algorithm incorporates the restrictions naturally into the likelihood estimation process, mitigating concerns about biased results due to excluded combinations. Thus, the restrictions were accounted for during the estimation stage, following best practices in the conjoint analysis literature (Chapman et al. 2009; Hein et al. 2022; Orme and Chrzan 2017).

Technical Appendix TA2

The HB model used by the software assumes that, at the individual level, respondents make choices based on the sums of part-worth utilities as specified in a standard logit model, a

Table A2. Descriptive statistics.

Variable	Response	Frequency (%)
Age	14–29	23.5
	30–39	17.1
	40–49	16.9
	50–59	20.6
	60–69	15.1
	70–75	6.4
Gender	Male	49.9
	Female	50.1
Income	Up to €1,000	8.8
	€1,001 – 2,000	21.5
	€2,001 – 3,000	25.8
	€3,001 – 4,000	21.4
	€4,001 – 5,000	13.8
	Over €5,000	8.7
Trust in news	1 – Do not agree at all	11.8
"I think I can trust the	2	11.6
majority of news sources	3	19.3
for the most part."	4	28.2
	5	20.4
	6	6.7
	7 – Completely agree	2.0
Interest in news	Extremely interested	15.9
"How interested are you in	Very interested	39.0
news – if at all?"	Somewhat interested	35.0
	Not very interested	8.3
	Not interested at all	1.8
Main news source	No online news used	50.5
"Which of these would you	Social media (e.g., Facebook, Instagram, Twitter, Snapchat, TikTok)	12.4
describe as your main	Websites/apps of newspapers	16.8
online news source?"	Websites/apps of TV and radio companies	10.2
	Websites/apps of print magazines	3.2
	Websites/apps of other organizations	1.5
	News readers/news aggregators (e.g., Google News, Apple News, Snapchat Discover)	3.8
	Other online news source	1.6
Intent to pay	1 – Very unlikely	50.0
"How likely is it that you	2	18.3
would pay for online news	3	20.3
content/digital journalism	4	6.5
content (in the future)?"	5 – Very likely	5.0
Past payment	Yes	16.5
	No	83.5
Free mentality	1 – Do not agree at all	3.5
"Digital content on the	2	3.1
Internet should be free, so	3	9.9
I would never pay for it."	4	15.7
	5	12.2
	6	14.6
	7 – Completely agree	41.0

lower-level feature shared with non-Bayesian methods (Orme and Howell 2009). The key distinction to traditional Logit models (using average marginal component effects, AMCE) lies in the upper-level model, where hierarchical Bayesian methods account for heterogeneity in part-worths across the respondent population. Recent discussions in the literature also emphasize the importance of modeling heterogeneous treatment effects in conjoint experiments. HB can model variability in AMCEs as a function of subgroup characteristics, thereby providing richer insights into heterogeneity (Horiuchi, Smith, and Yamamoto 2018; Zhirkov 2022) Specifically, Horiuchi, Smith, and Yamamoto (2018) demonstrate that HB models center individual-level estimates around the overall AMCE while capturing heterogeneity in preferences across groups. This contrasts with traditional AMCE approaches (Hainmueller, Hopkins, and Yamamoto 2014; Knudsen and Johannesson 2019), which focus on population-level averages, offering clear insights into attribute effects but without accommodating individual- or subgroup-level variability. Similarly, recent recommendations propose using marginal means rather than AMCEs and/or the Marginal Means (Leeper, Hobolt, and Tilley 2020) as benchmarks for conjoint experiments, a practice conceptually aligned with the outputs from HB models.

Our decision to use the Sawtooth HB model was driven by its ability to estimate individual-level part-worth utilities while pooling information hierarchically across respondents. This approach is particularly advantageous when heterogeneity in preferences exists, as it improves the precision of estimates even with relatively smaller sample sizes (Orme 2009; Rossi, Allenby, and McCulloch 2005). At the aggregate level, results derived from HB are conceptually similar to AMCE estimates, as both reflect average relative preferences (Rossi, Allenby, and McCulloch 2005). However, the HB model provides the additional benefit of capturing individual-level and subgroup-level heterogeneity, offering deeper insights into preference structures.

Technical Appendix TA3

In our study, the Hierarchical Bayes (HB) model employed by Sawtooth software is used for estimating respondent-level preferences and generating individual-level utilities for each respondent in a conjoint study (Howell 2009). Individual utilities allow segmentation and help identify distinct preference groups among respondents, which could otherwise be obscured when data from a sample is aggregated into a single utility. With individual-level utilities, it is possible to pinpoint segments with divergent preferences and target them specifically, which is useful for the later latent class analysis. CBC/HB uses the Multinomial Logit (MNL) model for respondent choice tasks in conjoint analysis. In MNL, the probability of a particular alternative being chosen is calculated based on its utility relative to the total utility of all available options. The formula for this probability is:

$$\mathrm{P}(\text{chosen}) = \frac{e^{(U_{Chosen})}}{e^{U_1} + e^{U_2} + e^{U_3} + \ldots}$$

The model operates on two levels (hence the term "hierarchical"). First, on the higher level, it involves the assumption that the part-worths (utilities) of individuals are characterized by a multivariate normal distribution. This distribution is defined by a vector of means and a covariance matrix, which describe the central tendencies and variability of the part-worths across the population. Second, on the lower level, it is assumed that an individual's choice probabilities for different alternatives are determined by a multinomial logit (MNL) model, given their specific part-worths. The MNL model calculates the likelihood of selecting a particular option based on its utility relative to the utilities of other available options. Thus, the utility that each respondent assigns to a specific attribute level is assumed to follow a normal distribution, characterized by a mean ($\dagger_i$) and a covariance matrix (D). These parameters at the respondent level are, in turn, treated as draws from a higher-level, population-wide normal distribution with its mean (μ) and covariance (Ω). Individual part-worths follow a multivariate normal distribution ($\dagger_i \sim$ Normal(α, D)), where $\dagger_i$ represents an individual's part-worths vector, α is the mean vector, and D is the

Table A3. Relative attribute importance.

Attribute	Relative importance (in %)	Std deviation	Lower 95% CI	Upper 95% CI
Price	57.87	5.21	5.62	6.24
Access model	14.05	7.05	8.49	9.33
Additional content	13.24	9.81	12.66	13.82
Scope of news	8.91	4.22	13.80	14.30
Provider type	5.93	18.29	56.79	58.95
Total	100	5.21	5.62	6.24

covariance matrix, which the model estimates. Choices are predicted by a multinomial logit model where the probability (p_k) of choosing the k_{th} option is given by

$$p_k = \frac{\exp\left(x_{k^T} \dagger_i\right)}{£_j \exp\left(x_{j^T} \dagger_i\right)}$$

with x_j, a vector of values describing the j^{th} alternative in that choice task, and p_k describing the probability of an individual choosing the k_{th} concept in a particular choice task. Essentially, this calculates the individual's utility for each option, exponentiates it, and normalizes it against the sum of exponentiated utilities for all options.

The HB model in Sawtooth utilizes Markov Chain Monte Carlo (MCMC) methods, particularly the Gibbs sampling technique, to estimate the posterior distributions of these parameters (Sawtooth Software, 2021). This involves a process of iteratively updating the estimates of β_i, μ, and Ω, based on the current values of other parameters and the choices made by respondents. Following a burn-in period (10,000 draws), the iterations yield a series of draws from the posterior distributions, which are then used to compute the final parameter estimates. The utility that a respondent i assigns to a product profile is computed as the aggregate of the part-worths for the levels of each attribute in that profile, as estimated by the HB model.

Technical Appendix TA4

The use of Sawtooth facilitates decisions regarding segmentation, based on evaluation of various metrics. Specifically, we employed standard fit indices such as the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and log-likelihood values to determine the optimal number of segments (see Appendix Table A6). These indices are critical in LCA for evaluating different solutions with varying numbers of classes, and our choice of four distinct groups was based on a careful analysis of these indicators.

The Akaike Information Criterion and the BIC are both measures used to evaluate the fit of a model, taking into account the complexity of the model and the sample size (Sinha, Calfee, and Delucchi 2021). The AIC is derived from the maximum likelihood estimate of the model, introducing a penalty for the number of parameters within the model. This penalty is consistent regardless of sample size, serving to balance model fit with complexity. In contrast, the BIC also starts from the maximum likelihood estimate but adjusts its penalty not only for the number of parameters but also in relation to the sample size. As the sample size increases, the BIC imposes a larger penalty for adding additional parameters, making it a stricter criterion compared to the AIC, particularly for larger datasets.

As Weller, Bowen, and Faubert (2020) emphasize, the decision for the number of classes should depend on various fit statistics and interpretability should also be a factor in the decision. While the log-likelihood continues to increase slightly with the fifth group, the decrease in AIC slows down considerably after the fourth group, while the BIC increases after the inclusion of the second group. This indicates diminishing returns in model improvement with the addition of a fifth group. The relative chi-square shows a similar pattern, with the rate of decrease slowing after the fourth group. Thus, choosing four groups represents a balance between model fit

Table A4. Part-worth utilities of CBCA.

Attributes	Levels	Average part-worths	Std deviation	Lower 95% CI	Upper 95% CI
Provider type	(1) Radio/TV Broadcaster	−2.14	14.17	−2.97	−1.30
	(2) Print newspaper/magazine	6.84	17.06	5.83	7.84
	(3) Digital pure plays (online publisher without relationship to print/radio/TV)	−4.70	17.19	−5.71	−3.68
Scope of news	(1) Mainly local/regional news and the most important national/international news	3.39	25.73	1.87	4.91
	(2) Mainly national/international news and individual regional news	−4.09	25.86	−5.62	−2.56
	(3) Roughly equal amounts of national/international and local/regional news	0.70	20.63	−0.52	1.91
Additional content	(1) Extensive entertainment news (celebrities/stars, TV formats, events…)	4.68	31.65	2.81	6.55
	(2) Extensive sports reporting (e.g., about football, skiing…, athletes, transfers)	−12.52	29.91	−14.29	−10.75
	(3) Many news videos	−7.03	33.46	−9.01	−5.06
	(4) Weather information	14.87	25.90	13.34	16.40
Access model	(1) Ad-free, full access via app/web (e.g., Plus offers)	18.72	4.58	18.45	18.99
	(2) Digital version AND ad-free, full access via app/web (e.g., Plus offers)	20.96	6.19	20.60	21.33
	(3) Only individual news items freely accessible, most content behind a paywall (price = 0)	−49.27	15.90	−50.21	−48.33
	(4) Access to all content via web/app, with advertising (price = 0)	9.59	10.77	8.95	10.23
Price	(1) no direct payments (€0)	205.45	80.25	200.71	210.20
	(2) €8/month	40.38	29.13	38.66	42.10
	(3) €11/month	8.12	29.73	6.36	9.87
	(4) €15/month	−24.41	14.92	−25.29	−23.53
	(5) €19/month	−25.29	15.67	−26.21	−24.36
	(6) €22/month	−56.42	21.37	−57.68	−55.15
	(7) €26/month	−63.93	23.46	−65.32	−62.55
	(8) €29/month	−83.91	32.08	−85.80	−82.01
"None" option	"None" option	−31.58	273.28	−47.73	−15.43

Table A5. Relative WTP.

Attributes	Levels	WTP
Provider type	(1) Radio/TV broadcaster	−€1.00
	(2) Print newspaper/magazine	N/A (reference level)
	(3) Digital pure play (online publisher without relationship to print/radio/TV	−€2.20
Scope of news	(1) Mainly local/regional news and the most important national/international news	−€1.80
	(2) Mainly national/international news and individual regional news	−€0.50
	(3) Roughly equal amounts of national/international and local/regional news	N/A (reference level)
Additional content	(1) Extensive entertainment news (celebrities/stars, TV formats, events…)	−€1.30
	(2) Extensive sports reporting (e.g., about football, skiing…, athletes, transfers)	−€2.50
	(3) Many news videos	−3.00
	(4) Weather information	N/A (reference level)
Access model	(1) Ad-free, full access via app/web (e.g., Plus offers)	−€0.20
	(2) Digital version AND ad-free, full access via app/web (e.g., Plus offers)	N/A (reference level)
	(3) Only individual news items freely accessible, most content behind a paywall (price = 0)	−€7.00
	(4) Access to all content via web/app, with advertising (price = 0)	−€1.90

Table A6. Quality measurements – summary of best replications.

Groups	Log-likelihood	Pct Cert	AIC	CAIC	BIC	ABIC	Chi-square	Relative Chi-square
1	−4146.97	14.21	8329.94	8462.95	8444.95	8387.75	1373.85	76.33
2	−3449.69	28.64	6973.38	7246.79	7209.79	7092.21	2768.41	74.82
3	−3374.17	30.20	6860.34	7274.15	7218.15	7040.20	2919.45	52.13
4	−3328.39	31.14	6806.78	7360.98	7285.98	7047.66	3011.01	40.15
5	−3306.41	31.60	6800.83	7495.43	7401.43	7102.73	3054.96	32.50

Table A7. Cluster summary and between-group analysis of variance – attribute part-worths.

Variables	Levels	Cluster 1	Cluster 2	Cluster 3	Cluster 4
	N	284	407	274	135
	%	27.9	34.6	23.3	14.2
Source of online news	Feature importance "source of online news"***	0.09	0.03	0.05	0.04
	(1) Radio/TV broadcaster***	6.73	−6.50	−6.98	2.20
	(2) Print newspaper/magazine***	7.70	5.36	12.47	−1.97
	(3) Digital pure play (online publisher without relationship to print/radio/TV***	−14.43	1.14	−5.49	−0.22
Scope of news	Feature importance "scope of online news"***	0.14	0.04	0.07	0.07
	(1) Mainly local/regional news and the most important national/international news***	−20.51	14.28	9.13	9.20
	(2) Mainly national/international news and individual regional news***	7.68	−7.79	−10.08	−5.53
	(3) Roughly equal amounts of national/international and local/regional news***	12.83	−6.49	0.95	−3.67
Additional content	Feature importance "additional content"***	0.27	0.07	0.12	0.12
	(1) Extensive entertainment news (celebrities/stars, TV formats, events…)***	−6.68	7.05	14.60	1.34
	(2) Extensive sports reporting (e.g., about football, skiing…, athletes, transfers)***	6.07	−19.19	−21.29	−13.73
	(3) Many news videos***	−27.95	3.25	−0.35	−7.61
	(4) Weather information***	28.56	8.89	7.04	20.00
Access	Feature importance "access"***	0.15	0.09	0.08	0.15
	(1) Ad-free, full access via app/web (e.g., Plus offers)***	19.19	16.99	17.96	24.50
	(2) digital version AND ad-free, full access via app/web (e.g., Plus offers)***	21.69	18.47	18.87	31.18
	(3) Only individual news items freely accessible, most content behind a paywall (price = 0)***	−44.00	−51.30	−36.53	−80.11
	(4) Access to all content via web/app, with advertising (price = 0)***	3.11	15.84	−0.29	24.42
Price	Feature importance "price"***	0.34	0.77	0.68	0.62
	(1) no direct payments (€0)***	96.81	275.23	199.73	235.26
	(2) €8/month***	45.27	21.62	78.68	8.92
	(3) €11/month***	8.85	−5.58	47.31	−31.67
	(4) €15/month***	−7.32	−36.94	−18.71	−34.17
	(5) €19/month***	−7.33	−38.37	−18.72	−36.95
	(6) €22/month***	−34.28	−60.64	−80.57	−41.24
	(7) €26/month***	−35.09	−75.79	−83.33	−49.48
	(8) €29/month***	−66.90	−79.54	−124.40	−50.68
"None" option	"None" option***	−328.01	139.73	−165.76	347.84

*$p<.05$; **$p<.01$; ***$p<.001$ (Results of between cluster analysis of variance (ANOVA)9.

and complexity. While adding more groups can always improve the fit (as shown by the log-likelihood), it also adds complexity to the model. The goal is to find a model that provides a good fit without unnecessary complexity. Based on the statistical criteria, four groups seem to offer a reasonable balance.

Table A8. Cluster summary and between-group ANOVA – additional variables.

Variables	Levels	Cluster 1	Cluster 2	Cluster 3	Cluster 4
	n	284	407	274	135
	%	27.9	34.6	23.3	14.2
Main source of news	No online news used***	0.52	0.48	0.42	0.73
	Social media (e.g., Facebook, Instagram, Twitter, Snapchat, TikTok)***	0.12	0.10	0.19	0.05
	Websites/apps of newspapers**	0.14	0.19	0.21	0.09
	Websites/apps of TV and radio companies	0.13	0.11	0.06	0.10
	Websites/apps of print magazines	0.03	0.04	0.03	0.01
	Websites/apps of other organizations	0.01	0.02	0.02	0.01
	News readers/news aggregators (e.g., Google News, Apple News, Snapchat Discover)*	0.03	0.05	0.05	0.00
	Other online news source	0.01	0.02	0.02	0.01
Trust in news	"I think I can trust the majority of news sources for the most part."**	3.76	3.51	3.79	3.30
News interest	"How interested are you in news – if at all?"***	2.40	2.37	2.30	2.78
Frequency of news consumption	"How often do you ordinarily use online news (independent of channel/access)"***	4.73	5.17	4.95	4.55
Intent to pay for news	"How likely is it that you would pay for online news content/digital journalism content (in the future)?"***	2.58	1.47	2.34	1.52
Past payment	"Have you paid for online news in the past 12 months?"***	1.68	1.93	1.80	1.96
Free mentality	"Digital content on the Internet should be free, so I would never pay for it."***	4.51	6.08	5.09	5.74
Frequency of PSM use	"How often do you use the ORF.at online service?"***	3.33	3.06	3.03	2.19
Exit PSM	"I would take out a paid subscription with a private provider to continue to have access to all the news"***	0.12	0.02	0.05	0.01
	"I would use other free offerings instead (e.g., on social media, Google News)"	0.41	0.51	0.57	0.27
	"I would use other media offerings that are financed by advertising (e.g., standard.at)"***	0.30	0.35	0.34	0.24
	"I would not consume any other news offering"***	0.16	0.16	0.13	0.30
Print subscription	Subscribed to a print newspaper***	0.40	0.25	0.28	0.25

*$p<.05$; **$p<.01$; ***$p<.001$ (Results of between-cluster ANOVA)