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Consumer Trust in AI–Human News Collaborative Continuum: Preferences and Influencing Factors by News Production Phases

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Abstract: AI has become increasingly relevant to the media sector, especially for news media companies considering the integration of this technology into their production processes. While the application of AI promises productivity gains, the impact on consumers' perceptions of the resulting news and the level of AI integration accepted by the market has not been well studied. Our research focused on the analysis of news consumers' preferred level of AI integration, AI news trust, and AI news usage intentions linked to the application of the technology in the discovery/information-gathering and writing/editing phases. By connecting a comprehensive set of factors influencing the perception of news and AI, we approached this gap through structural equation modeling, presenting an overview of consumers' responses to AI integration into news production processes. Our research showed that while participants generally prefer lower levels of AI integration into both phases of production, news trust and usage intention can even increase as AI enters the production process—as long as humans remain in the lead. These findings provide researchers and news media managers with a first overview of consumers' responses to news production augmentation and its implications for news perception in the market.

Keywords: media research; news trust; artificial intelligence; news production; AI trust; usage intention; structural equation modeling

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1. Introduction

AI is becoming more and more relevant to (news) media companies (Broussard et al. 2019; Kim and Kim 2017). Based on its broad applicability and the possible productivity gains, it is now applied in all areas of (news) media, ranging from the aggregation of information (Benes 2018), the (pre-) production of content (Munoriyarwa et al. 2021), and the distribution of media (Lim and Zhang 2022) to the analysis of consumers' interactions and interests (Benes 2018). Recently, AI providers have even begun active talks with journalists and publishers about the integration of the technology into news production processes (Reuters 2023). Previous studies on the application of AI have already provided evidence for the actual integration of the technology into some parts of the media production process (de-Lima-Santos and Ceron 2021). While this integration of AI promises efficiency gains in productivity and relieves human employees and media companies of repetitive and mundane tasks (Kim and Kim 2017), consumers seem to have different perceptions and/or understandings of such applications (Samek and Müller 2019), or a fear and mistrust of AI in general (Andriole 2018).

Trust in the news, by nature, is of major relevance to news media companies, as trust is reflective of consumers' decisions for and against the consumption of certain media (Schranz et al. 2018). The impact of trust (and distrust) in news media goes even further because of its impact on political/social systems as a whole (Ariely 2015). The dual social–financial significance of trust is a critical factor in today's news media ventures

and operations, including the integration of AI as news organizations try to revamp their news processes and systems (Chakraborti et al. 2017). While research on the perception of AI as a part of media production processes has been conducted (e.g., Chan-Olmsted and Luo 2022; Kim and Kim 2020), there is limited literature addressing the topic of AI integration into different parts of news media production and consumers' trust in the resulting product. Accordingly, this study aimed to explore how consumers perceive and trust the integration of AI into traditionally human-centric news content production processes, especially from the more granular perspectives of different tasks/stages and degrees of AI–human collaboration. The study further investigated how various consumer factors such as AI-related perceptions and news use motivations affect consumers' trust and intention to use news content produced with AI in various contexts. The research contributes to the literature of technology applications in journalism and will provide news media organizations with insights into the integration of AI technologies into various phases of news production while keeping trust building in mind.

2. Conceptual Background and Research Questions

This study aimed to examine news perception and trust from a consumer-centric rather than news credibility perspective. Studies have shown the importance of investigating media "trust" beyond the traditional source-based, credibility-focused approach in today's media environment (Heim et al. 2022). There is extensive research on trust in brands/organizations in general (e.g., Delgado-Ballester and Luis Munuera-Alemán 2005; Kramer and Tyler 1996) and trust in AI in particular (Glikson and Woolley 2020). In recent years, combining research on trust in AI with trust in media companies using the technology in the production process has received increasing interest (e.g., Hofeditz et al. 2021; Kolo et al. 2022; Lee et al. 2020). Nevertheless, most studies have focused on the internal perception of AI integration into the production process (Kim and Kim 2020) or on consumers' ability to differentiate between content written by humans and AI (Kolo et al. 2022). Additional research has focused on the perception of brands using AI, not on the product specifically, leaving a research gap on the impact of including AI in various aspects of content production, especially those types of content that have significant social consequences, such as news.

To generate a more granular understanding of consumer perceptions and preferences in relation to AI integration into the production of news, this study teased out the content production process into different phases and considered various levels of AI integration into the process. Both conceptually and in practice, the news process can be divided into the four phases of (1) content development, (2) content selection, (3) content production, and (4) content distribution (Domingo et al. 2008; Marconi 2020). A broad range of additional definitions of the news production process can be found in the literature, ranging from three to five distinct stages and generally reflecting similar sequential activities to the above (e.g., Skovsgaard et al. 2012; Spyridou and Veglis 2016; Wu et al. 2018). Overall, both scholars and practitioners see the process of news content production as a series of steps from gathering input, to selecting content, to producing and disseminating the output. In the context of this study, we were most interested in two aggregated phases that offered contrasting skill sets and experiences: (1) discovery and information gathering, and (2) writing and editing (Shapiro 2010). In general, the first phase involves the activities of assigning and discovering newsworthy topics/issues, and the subsequent work of gathering relevant information about these topics/issues, while the latter phase involves the activities of selecting, writing, editing, and organizing the news content for the audience of the topics/issues from the previous phase. As AI can be integrated into each one of these phases (Chan-Olmsted 2019; Chen et al. 2021; Dong et al. 2011; Wang and Zhu 2021), responses from consumers related to the perceived levels of skills/competency they attribute to AI need to be differentiated between the different tasks at hand and compared/contrasted in terms of their perceived output.

While Kim and Kim (2020) have observed the influence of integrating AI into the news production process based on its implications for acceptance amongst individuals handling news production, this study dove deeper into the impact of AI on consumer perception of news products. By examining the application of AI technologies in the workflow of news production, we were able to generate better insights into the proper role of AI in a traditionally human-centric process. In addition, this study treated AI adoption in news as a continuum instead of a dichotomous application. As reported, AI technologies are transformational and unavoidable in almost all industries (Lee et al. 2020). Thus, AI adoption is a strategic choice of not only workflow/steps but also degree of integration.

Scholars have examined the scenarios of AI "augmentation" (i.e., the collaboration of humans with the technology to perform a task) and "automation" (i.e., machines fully taking over the human task) (Langer and Landers 2021; Raisch and Krakowski 2021). In the context of this study, we thus investigated the AI–human integration continuum at five different levels, ranging from human-only to AI-only adoption for each news production phase. As Owsley and Greenwood (2022) suggested, AI applications are likely to affect how consumers perceive the resulting news products. This study aimed to explore how consumers perceive and trust various levels of AI application in the different news production phases and the factors that play a role in this process. Specifically, aspects such as consumers' AI performance expectations, which have been found to affect acceptance of AI integration into business processes (Gursoy et al. 2019; Xian 2021); usage motivations, which has been suggested to influence AI perceptions (Chan-Olmsted and Wang 2020; Lee 2013); and trust in the news based on experiences and perceptions of the news media (Mourão et al. 2018) were examined.

Accordingly, the first research question is posited below:

RQ1: What are the consumer perceptions of and preferences for AI applications during the main news production phases of discovery/information gathering and writing/editing, and what factors within the news production process play a role in shaping these perceptions and preferences?

As mentioned earlier, trust is essential to the integration of AI into a traditionally human-centric process, especially one with social and political significance. Kohring and Matthes (2007) argued that trust in news media is established through consumer perception of the selectivity of topics, the selectivity of facts, the accuracy of depictions, and the journalistic assessment. In line with our approach to the news production process, these dimensions can be attributed to either the discovery and information-gathering (i.e., selectivity of topics, selectivity of facts) or the writing/editing (i.e., accuracy of depictions, journalistic assessment) phases. Additional research has also highlighted the importance of credibility, reliability, transparency, and intentions/benevolence (Gurviez and Korchia 2003; Munuera-Aleman et al. 2003). Furthermore, studies have identified a strong connection between trust and respondents' familiarity with AI (Gillath et al. 2021) and their general evaluation of the risks and benefits of the technology (Bao et al. 2022).

Our second research question thus focused on exploring the drivers of consumer trust in this context:

RQ2: What factors affect consumer trust in news when AI is used in the news production process?

While understanding the preferred level of AI integration into the news production process and its implications for consumer trust is beneficial, ultimately, the most relevant information for news media companies is the respective usage intentions of consumers. As presented by Lim et al. (2022), news organizations need to be aware of consumers' general perceptions of the news and their attitude towards AI to be able to improve consumers' usage intentions. This aspect can be separated into consumers' positive (i.e., their perceptions of AI utility, societal and personal benefits, and, to some extent, emotional matters) and negative (i.e., dystopian views and especially negative emotions) attitudes towards the technology (Schepman and Rodway 2020). In line with this research, a wide

range of aspects is influential for the perception of news generated by or with AI and thus impacts the resulting usage intentions. Our third and final research question was therefore directed towards consumer intention to use AI news:

RQ3: Which factors influence consumer intention to use the news as AI is used in the various phases of the production process?

3. Materials and Methods

3.1. Data Collection

An online national survey in the United States was adopted for this study. Before the main test, a pre-test was carried out using Amazon's Mechanical Turk to check the reliability, readability, and possible questionnaire errors of the multi-item constructs applied in the survey. The study questionnaire was then adapted accordingly for the main test, which was conducted in the spring of 2023 using a Qualtrics general consumer panel. The sample quota was chosen to represent the national gender and age distribution of the population of the United States. This sample was chosen as our research focused on the broad perception of trust in news produced by or with AI amongst US citizens, demanding the analysis of the population as a whole. Responses were checked for quality via several measures (e.g., time constraints, straightlining, contradictions), resulting in a final dataset consisting of 702 responses. Quality checks were conducted in parallel to the sampling process, allowing for the recruitment of additional participants after the initial exclusion of responses and thus providing a nationally representative final dataset. The sample participants had a mean age of 46.1 (SD = 17.7). Of the sample participants, 49.1% of them were male, 49.7% were female, 0.7% self-identified as "other genders", and the rest preferred not to disclose their gender. To establish the final dataset used in the analysis, composite variables were generated for scale-item variables by adopting the z-value approach described by Song et al. (2013). Cronbach's alphas for all composites showed good reliability, with all measures >0.7 (Cortina 1993). As part of the reliability check, z-values were generated for relevant items and used to create the final composites for the targeted variables, along with other measures (see below).

3.2. Measures

3.2.1. Production Phase and Level of Integration

As indicated, the respondents were asked to consider their perceptions/preferences of AI integration in relation to two main phases of news production: "discovery/information gathering" and "writing/editing". All participants were provided with the same set of questions for both phases. Later analysis was then conducted on a split dataset consisting of only responses to each phase, respectively.

To understand consumers' perceptions of different levels of AI applications in the news production process, the survey incorporated five different scenarios on a continuum: (1) without AI, (2) with AI supporting humans, (3) with humans and AI working equally, (4) with humans supporting AI, and (5) with AI only. The range is indicative of the spectrum of all possible AI–human interaction/decision dynamics in a work environment. The participants were first asked which specific level of integration they preferred for each phase of the news process. Questions ranking the different levels of AI integration were ordered from 1 = "no AI" to 5 = "AI only". If perception-related questions were required for all different levels of AI integration (e.g., AI news performance), the same set of items was provided repeatedly.

3.2.2. AI Perception

Using a 5-point Likert scale with "1" meaning "strongly disagree" and "5" meaning "strongly agree", AI perception was assessed in terms of two aspects: positive and negative AI attitudes (α_{Pos} = 0.83, α_{Neg} = 0.83) (Schepman and Rodway 2020), and risk and benefit evaluations (α_{Risk} = 0.84, $\alpha_{Benefit}$ = 0.87) (Bao et al. 2022) (see Table A1 for specific measures).

These perception-related variables were also reviewed to establish the latent construct of AI perception.

3.2.3. AI Familiarity

AI familiarity was measured via a single-item question asking for the self-assessment of one's own familiarity with the technology. Responses were ranked from 1 = "not familiar at all" to 5 = "extremely familiar" (Chan-Olmsted and Luo 2022).

3.2.4. AI News Performance

Using the same 5-point scale, the expected performance of different levels of AI in the discovery/information-gathering and writing/editing phases of the news was measured using three items related to the level of errors, accuracy, and consistency of the production (Discoveryα_{NoAI} = 0.79, α_{AISup} = 0.82, α_{Equal} = 0.84, $\alpha_{HumanSup}$ = 0.86, α_{AIOnly} = 0.87; Writing: α_{NoAI} = 0.83, α_{AISup} = 0.84, α_{Equal} = 0.86, $\alpha_{HumanSup}$ = 0.86, α_{AIOnly} = 0.87) (Gursoy et al. 2019).

3.2.5. News Use Motives

Consumers' motives for news consumption were measured using established usage and gratification 5-point scale measures, separated by entertainment, information, opinion, and social needs related to news consumption (α_{Ent} = 0.83, α_{Inf} = 0.87, α_{Opi} = 0.78, α_{Soc} = 0.77) (Chan-Olmsted and Wang 2020; Lee 2013; Lin et al. 2004; Siakalli et al. 2015).

3.2.6. General News Trust

In this study, trust was measured in terms of two different aspects. First, measures of trust in the news in general were incorporated as a reduced form of the Trust in Mainstream News scale presented by Mourão et al. (2018). From this questionnaire, using the 5-point Likert scale, we extracted four items asking for participants' evaluations of the news and their perceptions of its reliability, truthfulness, and informativeness (α = 0.85).

3.2.7. AI News Trust

Trust in news generated by or with AI was then measured via a specifically developed ranking of all levels of AI integration. Participants were asked to rank the different scenarios from highest to lowest trust in the resulting product (Chan-Olmsted 2019; Domingo et al. 2008; Marconi 2020).

3.2.8. Usage Intention

Consumers' intentions to use the news if produced by or with AI were measured using a slightly adapted version of the Technology Acceptance and Usage 5-point scale developed by Venkatesh et al. (2012). Since the usage intention was analyzed for all different levels of AI integration into the discovery/information-gathering and writing/editing phases, the data were separated into 10 different subsets comprising one respective combination each (Discovery: α_{NoAI} = 0.87, α_{AISup} = 0.89, α_{Equal} = 0.9, $\alpha_{HumanSup}$ = 0.91, α_{AIOnly} = 0.93; Writing: α_{NoAI} = 0.89, α_{AISup} = 0.9, α_{Equal} = 0.9, $\alpha_{HumanSup}$ = 0.92, α_{AIOnly} = 0.93).

3.3. Modeling Approach

In line with the three research questions, we established three structural equation models (SEMs) to analyze the respective factors. We decided during the development of the SEMs to allow for the integration of a wide range of composite and latent factors influencing our dependent variables into the analyses. By incorporating our research into such models, we were able to include individual composites well established in scales available in the literature (e.g., news usage intention, news performance, general news trust), individual items measurable through a single question (e.g., AI familiarity), and latent constructs focused on broader aspects and consisting of sets of multiple composite variables required to establish an adequate representation (e.g., AI perception, news use motives) in the same

model. Additionally, SEM allowed us to analyze the relationships between those elements to establish models providing a depiction of reality without significant measurement errors (Nachtigall et al. 2003).

Incorporating the area of interest of each research question, the three models used "AI level preference", "AI news trust", and "AI usage intention" as dependent variables, respectively. Items included in the survey were aggregated into composites as described above and included in the models separately or as latent constructs if conceptually sound. Depending on the RQ to be analyzed, a specific set of independent variables was selected to be incorporated into the model. For each research question, the models were calculated twice, analyzing the discovery/information-gathering and writing/editing phase responses separately. All findings were then generated from the respective model calculations for each research question and subsequently validated. Figure 1 displays the three models in an aggregated visualization with the connection to each relevant research question noted for each dependent variable (e.g., RQ1–3 for a dependent variable included in all three models). The SEM results and the corresponding insights from the data are presented next.

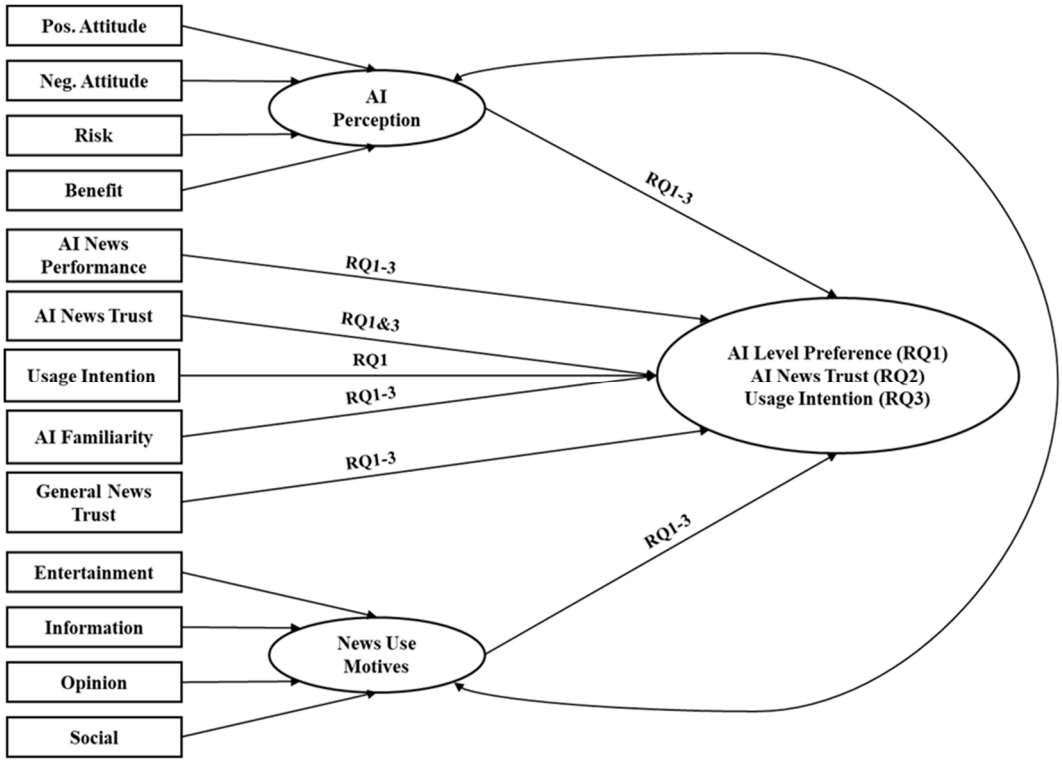

Figure 1. SEM—AI news trust analysis (RQ1–3).

4. Results

4.1. Consumers' Preferred Level of AI Integration

First, the survey showed that participants generally preferred lower levels of AI integration in both phases. Analyzing responses related to the preferred level of AI integration, we found that the majority of the respondents preferred "humans only" or "AI supporting humans" in the discovery/information-gathering and writing/editing phases (59% for both). However, participants did not reject the integration of AI into the production of news overall, resulting in "AI supporting humans" receiving the highest share (Discovery: 37%, Writing: 35%). Connecting this to the slightly higher preference for "Humans and AI working as equals" in the discovery/information-gathering phase (29% vs. 24%), we found that the general acceptance of AI augmentation appeared to be slightly higher in this initial phase of the news production. However, when it came to a stronger integration of AI and "Humans supporting AI", the participants reported a slightly higher preference

in the writing/editing phase (11% vs. 7%). The lowest popularity of all provided options was found for "AI only" production, resulting in only 5% of all respondents choosing this option for both phases.

To dive deeper into how this perception of the general application of AI in the two distinct phases of the news production process emerged, we developed an SEM model connecting the comprehensive set of possible influences with consumers' preference ratings. As described above, we gathered data on participants' preferred levels of AI usage in each of the two phases by providing them with the five different levels ("No AI", "AI supporting humans", "AI and humans working as equals", "Humans supporting AI", "AI only") and asking for their preferred mode of news production. This model consisted of the full set of available variables and was established to generate a global first understanding about the influences on consumers' AI perceptions and connected preferences with regard to news production. Table 1 shows the results of the SEM analysis for all levels of AI integration into the two phases of news production. All models were analyzed and checked for model fit in the discovery/information-gathering and writing/editing phases, respectively (see Table A2 for details).

Table 1. SEM—Influences on AI level preference.

	No AI		**AI Support**		**Equal**		**Human Support**		**AI Only**	
Factor Loadings	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**
PosAtt → AI Perception	0.649 ***	0.664	0.662 ***	0.672 ***	0.650 ***	0.669 ***	0.654 ***	0.661 ***	0.662 ***	0.668 ***
NegAtt → AI Perception	−0.291 ***	−0.295 ***	−0.294 ***	−0.296 ***	−0.292 ***	−0.296 ***	−0.292 ***	−0.294 ***	−0.293 ***	−0.294 ***
Risk → AI Perception	−0.213 ***	−0.219 ***	−0.220 ***	−0.223 ***	−0.214 ***	−0.222 ***	−0.216 ***	−0.218 ***	−0.218 ***	−0.221 ***
Benefit → AI Perception	0.928 ***	0.908 ***	0.910 ***	0.898 ***	0.927 ***	0.901 ***	0.921 ***	0.912 ***	0.912 ***	0.903 ***
Entertainment → News Use Motivation	0.654 ***	0.652 ***	0.653 ***	0.650 ***	0.653 ***	0.650 ***	0.653 ***	0.651 ***	0.652 ***	0.650 ***
Information → News Use Motivation	0.506 ***	0.509 ***	0.507 ***	0.512 ***	0.508 ***	0.513 ***	0.508 ***	0.513 ***	0.508 ***	0.512 ***
Opinion → News Use Motivation	0.801 ***	0.803 ***	0.801 ***	0.804 ***	0.802 ***	0.805 ***	0.802 ***	0.804 ***	0.802 ***	0.804 ***
Social → News Use Motivation	0.823 ***	0.821 ***	0.822 ***	0.820 ***	0.822 ***	0.819 ***	0.822 ***	0.819 ***	0.822 ***	0.820 ***
Path Coefficients										
AI Perception → AI Level Preference	0.257 ***	0.273 ***	0.293 ***	0.331 ***	0.294 ***	0.332 ***	0.235 ***	0.213 ***	0.210 ***	0.199 ***
AI Use Motivation → AI Level Preference	0.023	−0.046	0.000	−0.130 **	−0.025	−0.146 **	−0.021	−0.130 **	−0.012	−0.137 **
AI Performance → AI Level Preference	−0.013	−0.052	0.036	0.055	0.079 *	−0.011	0.066	0.095 *	0.080	0.119 **
AI News Trust → AI Level Preference	−0.190 ***	−0.060	−0.152 ***	−0.157 ***	0.025	−0.020	0.137 ***	0.109**	0.140 ***	0.097 *
AI Familiarity → AI Level Preference	−0.099**	0.164 ***	0.111 **	0.168 ***	0.134 ***	0.173 ***	0.105	0.152 ***	0.080	0.134 **
Usage Intention → AI Level Preference	−0.045	−0.166 ***	−0.039	−0.058	−0.005	0.041	0.080	0.117 **	0.123 **	0.133 **
General News Trust → AI Level Preference	0.009	0.002	−0.033	−0.076	−0.052	−0.109 **	−0.061	−0.107 **	−0.044	−0.099 **
Covariances										
AI Perception ↔ News Use Motives	0.482 ***	0.486 ***	0.486 ***	0.487 ***	0.482 ***	0.487 ***	0.483 ***	0.485 ***	0.486 ***	0.487 ***

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; standardized coefficients are reported.

Based on the latent construct of AI-perception-related variables, we found a significant and generally positive impact on the AI level preference, independent of the chosen level and phase of news production (Discovery/information gathering: $B = 0.210$ to 0.294; Writing/editing: $B = 0.199$ to 0.332). Observing the variables underlying AI perception overall showed that positive constructs (i.e., "Positive attitude towards AI" and "AI benefits") improved AI preference in the discovery and writing/editing phases for all levels of AI integration ($\lambda_{PosAtt} = 0.649$ to 0.662, $\lambda_{Benefit} = 0.91$ to 0.928), while negative variables ("Negative attitude towards AI" and "AI risk") decreased this perception ($\lambda_{NegAtt} = -0.294$ to -0.292, $\lambda_{Risk} = -0.22$ to -0.213). Diving deeper into the specific levels of AI usage, however, revealed varying levels of influence. While the impact of a positive perception was highest for "AI supporting humans" (Discovery: $B = 0.293$, Writing: $B = 0.331$) and "AI and humans working as equals" (Discovery: $B = 0.294$, Writing: $B = 0.332$) in both production phases, the net impact appeared to be stronger when little or no AI was applied in the writing/editing phase of news production. This stronger positive impact shifted from the writing/editing to the discovery/information-gathering phase as soon as AI had the upper hand on the production, and was stronger in the discovery/information-gathering phase for "Humans supporting AI" (Discovery: $B = 0.235$, Writing: $B = 0.213$) and "AI only" (Discovery: $B = 0.21$, Writing: $B = 0.199$).

Much stronger differences between the phases of the news production process were found regarding the impact of "news usage motivation" on the preferred level of AI integration. While there was hardly any impact for the discovery/information-gathering phase of the news ($B = -0.025$ to 0.023), which remained non-significant for all different levels of AI integration, we found a strong negative influence for the writing/editing phase ($B = -0.146$ to -0.046), which became significant as soon as AI was applied during production. Additionally, whereas the level was different for the discovery/information-gathering and writing/editing phases, the generally low to negative influence was similar for both models and was found for all four different news use motivations included in the latent construct (Discovery: $\lambda_{Ent} = 0.652$ to 0.654, $\lambda_{Inf} = 0.506$ to 0.508, $\lambda_{Opi} = 0.801$ to 0.802, $\lambda_{Soc} = 0.822$ to 0.823; Writing: $\lambda_{Ent} = 0.65$ to 0.652, $\lambda_{Inf} = 0.509$ to 0.513, $\lambda_{Opi} = 0.803$ to 0.805, $\lambda_{Soc} = 0.819$ to 0.821).

Analyzing the influence of "AI performance" generated from the ranking of the different levels of AI application in the two phases of news production, we found low but generally increasing loadings in the model (Discovery: $B = -0.013$ to 0.08, Writing: $B = -0.052$ to 0.119). For both the discovery/information-gathering phase and the writing/editing phase, a positive perception of AI became increasingly important and affected the AI level preference positively with higher levels of integration. However, the loadings were only significant in the writing/editing phase and with higher levels of AI integration ("AI and humans working as equals" and higher).

Analyzing the results of "AI news trust" showed that the influence of this variable became increasingly positive with higher levels of AI integration for both phases of news production. While for lower levels of AI usage (i.e., "No AI" and "AI supporting humans"), the impact was negative (Discovery: $B = -0.19$ to -0.152, Writing: $B = -0.152$ to -0.06), as soon as humans and AI worked as equals (Discovery/information gathering) or AI took the lead (Writing/editing), this effect changed (Discovery: $B = 0.025$ to 0.14, Writing: $B = 0.97$ to 0.109). While these findings were significant for most scenarios analyzed in the SEM, the loadings were found to be insignificant for "Human only" production in the writing/editing phase and "AI and humans working as equals" in both phases.

When observing participants' "AI familiarity", we found the strongest positive impact on AI level preference for "AI and humans working as equals" for both phases of news production ($B_{Dis} = 0.134$, $B_{Wri} = 0.173$). While the impact increased for both phases from "No AI" to "AI and humans working as equals" (Discovery: $B = -0.099$ to 0.134; Writing: $B = 0.164$ to 0.173), this influence remained positive but decreased again as soon as AI took the lead (Discovery: $B = 0.08$ to 0.105; Writing: $B = 0.134$ to 0.152). "AI familiarity" loadings

were found to be significant for all levels of AI integration and both phases except for the "AI only" scenario in the writing phase.

Analyzing the reported "usage intention", we found an increasingly positive impact on "AI level preference" for stronger applications of the technology. While the influence was negative for both the discovery/information-gathering and writing/editing phases with little or no AI integration (Discovery: $B = -0.045$ to -0.039; Writing: $B = -0.166$ to -0.058), the influence shifted to positive from "AI and humans working as equals" (Writing/editing) ($B = 0.041$ to 0.133) and "Humans supporting AI" (Discovery/information gathering) ($B = 0.08$ to 0.123). While these findings were significant in the writing/editing phase for all scenarios except "AI supporting humans" and "AI and humans working as equals", loading in the discovery/information-gathering phase was only found to be significant in the SEM for "AI only" production.

Finally, "general news trust" had a decreasing influence on the "AI level preference" at higher levels of AI integration. While the impact in the "No AI" scenario was slightly positive for both the discovery/information-gathering ($B = 0.009$) and writing/editing ($B = 0.002$) phases, this impact remained negative for all different levels of AI integration into both phases of news production (Discovery: $B = -0.033$ to -0.061; Writing: $B = -0.076$ to -0.109). However, these findings were only significant for the "Humans and AI working as equals", "Humans supporting AI", and "AI only" scenarios for the writing/editing phase.

4.2. AI Integration Level Impact on Consumers' Trust in the News

Analyzing participants' responses related to their trust in news resulting from production by or with AI, we found the highest trust overall reported for the "AI supporting humans" scenario in both the discovery/information-gathering ($M_{AISup} = 3.51$) and writing/editing ($M_{AISup} = 3.45$) phases. Comparing reported trust in the different levels of AI integration into the news production process also showed that trust was higher when humans took the lead. This resulted in the mean level of trust for the "No AI" and "AI supporting humans" scenarios being higher (Discovery: 3.32; Writing: 3.35) than the average for the scenarios "Humans supporting AI" and "AI only", which would leave the technology in control (Discovery: 2.41; Writing: 2.48). In terms of the general impact of AI integration into news production, however, we found that trust in news produced with some level of augmentation (i.e., "AI supporting humans" and "AI and humans working as equals") was higher than trust in the "Human only" product (Discovery: $M_{NoAI} = 3.13$, $M_{AISup} = 3.51$, $M_{Equal} = 3.48$; Writing: $M_{NoAI} = 3.25$, $M_{AISup} = 3.45$, $M_{Equal} = 3.35$).

To establish a comprehensive analysis of these results in terms of RQ2, we developed a model to observe the influences on consumers' level of trust in AI news. To establish this model, we connected the composite and latent constructs described above with the results from the trust ranking for both phases of news production. We thus generated SEM models analyzing the respective influences of all relevant aspects of consumers' perceptions of and experience with AI for different levels of AI integration on the trust rankings of each participant. This model removed some of the elements included in the first SEM for conceptual reasons and retained the structure visualized in Figure 1. Table 2 shows the results of the trust in AI news SEM analysis for all levels of AI integration into the two phases of news production. As with the first models, all SEMs were checked for model fit in the discovery/information-gathering and writing/editing phases, respectively (see Table A3 for details).

In contrast to the first model, observing influences on AI news trust showed varying significant influences of AI perception. While lower levels of AI resulted in a negative impact for both the writing/editing and discovery/information-gathering phases, stronger AI integration resulted in a positive impact (Discovery: $B = -0.321$ to 0.148, Writing: $B = -0.374$ to 0.185). Analyzing the components of AI perception showed that generally positive attributes such as "Positive attitude towards AI" and "AI benefits" increased AI perception ($\lambda_{PosAtt} = 0.595$ to 0.678, $\lambda_{Benefit} = 0.886$ to 1.007), while negative traits (i.e.,

"Negative attitude towards AI" and "AI risks") decreased the perception ($\lambda_{NegAtt} = -0.302$ to -0.275, $\lambda_{Risk} = -0.236$ to -0.186) in both phases. Specifically looking into the respective influences of AI perception, however, showed that while an increased usage of AI improved AI news trust, the strongest positive impact was found for "AI and humans working as equals" in the discovery and writing of the news (Discovery: $B = 0.204$, Writing: $B = 0.185$).

Table 2. SEM—Influences on AI news trust.

	No AI		**AI Support**		**Equal**		**Human Support**		**AI Only**	
Factor Loadings	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**
PosAtt → AI Perception	0.678 ***	0.651 ***	0.595 ***	0.633 ***	0.663 ***	0.661 ***	0.643 ***	0.645 ***	0.621 ***	0.623 ***
NegAtt → AI Perception	−0.302 ***	−0.299 ***	−0.275 ***	−0.288 ***	−0.295 ***	−0.293 ***	−0.290 ***	−0.291 ***	−0.285 ***	−0.285 ***
Risk → AI Perception	−0.236 ***	−0.219 ***	−0.186 ***	−0.205 ***	−0.221 ***	−0.217 ***	−0.210 ***	−0.212 ***	−0.200 ***	−0.201 ***
Benefit → AI Perception	0.886 ***	0.923 ***	10.007 ***	0.950 ***	0.909 ***	0.913 ***	0.937 ***	0.933 ***	0.967 ***	0.965 ***
Entertainment → News Use Motivation	0.652 ***	0.652 ***	0.654 ***	0.654 ***	0.652 ***	0.649 ***	0.653 ***	0.651 ***	0.648 ***	0.652 ***
Information → News Use Motivation	0.510 ***	0.508 ***	0.510 ***	0.507 ***	0.509 ***	0.511 ***	0.508 ***	0.511 ***	0.518 ***	0.512 ***
Opinion → News Use Motivation	0.804 ***	0.803 ***	0.802 ***	0.800 ***	0.802 ***	0.803 ***	0.801 ***	0.805 ***	0.806 ***	0.803 ***
Social → News Use Motivation	0.820 ***	0.821 ***	0.820 ***	0.823 ***	0.822 ***	0.822 ***	0.822 ***	0.819 ***	0.816 ***	0.819 ***
Path Coefficients										
AI Perception → AI News Trust	−0.321 ***	−0.374 ***	−0.277 ***	−0.109 *	0.204 ***	0.185 ***	0.109 *	0.133 **	0.148 ***	0.105 *
News Use Motivation → AI News Trust	0.112 *	0.084	0.077	−0.015	−0.004	0.088	−0.053	−0.148 **	−0.173 ***	−0.085
AI Performance → AI News Trust	0.155 ***	0.213 ***	0.109 **	0.162 ***	0.127 ***	0.067	0.122 ***	0.153 ***	0.170 ***	0.122 ***
AI Familiarity → AI News Trust	−0.106 **	−0.096 **	−0.083 *	−0.080 *	0.015	−0.095 *	0.079	0.092 *	0.142 ***	0.206 ***
General News Trust → AI News Trust	0.169 ***	0.085 *	0.057	0.036	−0.130 ***	−0.106 **	−0.057	−0.069	−0.119 ***	−0.069
Covariances										
AI Perception ↔ News Use Motives	0.489 ***	0.482 ***	0.453 ***	0.475 ***	0.486 ***	0.485 ***	0.479 ***	0.479 ***	0.467 ***	0.469 ***

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; standardized coefficients are reported.

The second latent construct, "news use motivation", showed antithetical results. In contrast to the first latent construct, the results for the discovery/information-gathering and writing/editing phase varied and needed to be analyzed separately. In the discovery/information-gathering phase, a strong positive influence of news use motivation on trust in AI news steadily decreased with increasing levels of AI integration, resulting in negative influences as soon as humans and AI worked as equals ($B = -0.173$ to 0.112). However, the loadings were only found to be significant for the "No AI" and "AI only" scenarios. In the writing/editing phase, the overall direction was the same, while "AI and humans working as equals" was an outlier. In this phase, participants' motivations to use the news positively influenced AI news trust in the "No AI" and "AI and humans working as equals" scenarios.

However, for all other levels of AI integration, we found a decreasing effect on trust in AI news ($B = -0.148$ to 0.088). In contrast to the discovery/information-gathering findings, the only significant loading in the writing/editing phase was measured for "Humans supporting AI". While these differences were observed in terms of the impact of the latent construct "news usage motivation", the composites underlying the construct showed similar coefficients in both phases, with information needs having the lowest and social need the highest relevance for consumers (Discovery: $\lambda_{Ent} = 0.648$ to 0.654, $\lambda_{Inf} = 0.508$ to 0.518, $\lambda_{Opi} = 0.801$ to 0.804, $\lambda_{Soc} = 0.816$ to 0.820; Writing: $\lambda_{Ent} = 0.649$ to 0.654, $\lambda_{Inf} = 0.507$ to 0.512, $\lambda_{Opi} = 0.8$ to 0.805, $\lambda_{Soc} = 0.819$ to 0.823).

The impact of "AI performance" on AI news trust was positive overall. However, significant differences were found regarding the level of impact between the two phases of news production. While the influence in the discovery/information-gathering phase was lowest for "AI supporting humans" and strongest for "AI only" ($B = 0.109$ to 0.170), in the writing/editing phase, the strongest positive impact was found for "No AI", with the lowest influence measured for "AI and humans working as equals" ($B = 0.067$ to 0.213). However, of all SEM analyses, this lowest loading was the only measurement to be insignificant.

When examining the relevance of "AI familiarity" to AI news trust, similar results were found for the discovery/information-gathering and writing/editing phases. While the impact of familiarity with the technology on trust in AI news was negative for lower levels of AI integration, this impact became positive in line with the level of AI augmentation. In the discovery/information-gathering phase, the impact was positive as soon as AI and humans worked as equals. In contrast, AI needed to take the lead (i.e., "Humans supporting AI") in the writing/editing phase to result in a positive impact (Discovery: $B = -0.106$ to 0.142, Writing: -0.096 to 0.206). While most loadings were found to be significant, we found non-significant influences in the "AI and humans working as equals" and "Humans supporting AI" scenarios for the discovery/information-gathering phase.

Finally, the impact of "general news trust" showed similar results for both phases of news production. Overall, while loadings were measured to be significant in discovery/information gathering for the "No AI", "AI and humans working as equals", and "AI only" production scenarios, in the writing/editing phase, significant loadings were only found for the "No AI" and "Humans and AI working as equals" scenarios. While the impact on trust in AI news was positive for lower levels of AI integration, as soon as AI and humans worked as equals, this impact became negative. The strongest negative impact for both phases was found for the "Humans and AI working as equals" scenario (Discovery: $B = -0.13$, Writing: $B = -0.106$). However, the positive impact of a general trust in the news was strongest for the scenario of no AI applied in news production for both phases (Discovery: $B = 0.169$, Writing: $B = 0.085$).

4.3. AI Integration Level Impact on Consumers' News Usage Intentions

Analyzing responses to the five items used to measure participants' intentions to use news produced by or with AI showed a generally higher level of intention for lower AI integration. This was shown by the average rating of the intention items being similar for no and low AI integration (Discovery: $M_{NoAI} = 3.42$, $M_{AISup} = 3.41$, $M_{Equal} = 3.43$; Writing: $M_{NoAI} = 3.46$, $M_{AISup} = 3.45$, $M_{Equal} = 3.42$) and higher than the ratings for the "Humans supporting AI" and "AI only" scenarios (Discovery: $M_{HumanSup} = 3.12$, $M_{AIOnly} = 2.94$; Writing: $M_{HumanSup} = 3.16$, $M_{AIOnly} = 2.92$). These results indicate that while the intention to use news remained steady as long as humans retained input in both phases of news production, we observed a clear descent in usage intention as soon as AI took the lead.

To explore these findings in detail, our final model focused on the implications of consumers' perceptions of and experience with AI on their actual usage intentions for news resulting from augmented or automated production processes. This model thus combined all relevant elements underlying participants' evaluations of AI with the respective usage intentions for news discovered or written by or with AI. Table 3 shows the results of the

SEM analysis of usage intention at all levels of AI integration into the two phases of news production. In line with the first two analyses, the models were also checked for model fit in the discovery/information-gathering and writing/editing phases, respectively (see Table A4 for details).

Table 3. SEM—Influences on AI usage intention.

	No AI		AI Support		Equal		Human Support		AI Only	
Factor Loadings	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**
PosAtt → AI Perception	0.653 ***	0.651 ***	0.635 ***	0.636 ***	0.641 ***	0.642 ***	0.617 ***	0.619 ***	0.614 ***	0.618 ***
NegAtt → AI Perception	−0.293 ***	−0.292 ***	−0.290 ***	−0.289 ***	−0.290 ***	−0.288 ***	−0.285 ***	−0.284 ***	−0.283 ***	−0.285 ***
Risk → AI Perception	−0.215 ***	−0.213 ***	−0.207 ***	−0.205 ***	−0.213 ***	−0.209 ***	−0.199 ***	−0.198 ***	−0.197 ***	−0.197 ***
Benefit → AI Perception	0.922 ***	0.926 ***	0.946 ***	0.947 ***	0.939 ***	0.939 ***	0.972 ***	0.971 ***	0.977 ***	0.972 ***
Entertainment → News Use Motivation	0.651 ***	0.654 ***	0.657 ***	0.653 ***	0.654 ***	0.658 ***	0.660 ***	0.658 ***	0.659 ***	0.660 ***
Information → News Use Motivation	0.527 ***	0.517 ***	0.517 ***	0.512 ***	0.515 ***	0.509 ***	0.499 ***	0.502 ***	0.499 ***	0.499 ***
Opinion → News Use Motivation	0.806 ***	0.806 ***	0.795 ***	0.801 ***	0.799 ***	0.796 ***	0.791 ***	0.794 ***	0.793 ***	0.791 ***
Social → News Use Motivation	0.810 ***	0.813 ***	0.821 ***	0.821 ***	0.820 ***	0.823 ***	0.830 ***	0.827 ***	0.829 ***	0.830 ***
Path Coefficients										
AI Perception → Usage Intention	−0.098 *	−0.076	0.218 ***	0.227 ***	0.347 ***	0.337 ***	0.379 ***	0.367 ***	0.344 ***	0.390 ***
News Use Motivation → Usage Intention	0.447 ***	0.417 ***	0.337 ***	0.301 ***	0.291 ***	0.196 ***	0.177 ***	0.166 ***	0.167 ***	0.200 ***
AI Performance → Usage Intention	0.153 ***	0.122 ***	0.141 ***	0.095 **	0.158 ***	0.180 ***	0.226 ***	0.211 ***	0.208 ***	0.175 ***
AI News Trust → Usage Intention	0.157 ***	0.151 ***	0.033	0.073 *	0.037	0.025	0.092 ***	0.097 **	0.218 ***	0.246 ***
AI Familiarity → Usage Intention	−0.016	−0.012	0.015	0.015	0.055	0.037	0.100 **	0.121 ***	0.171 ***	0.113 ***
General News Trust → Usage Intention	0.438 ***	0.422 ***	0.341 ***	0.351 ***	0.224 ***	0.291 ***	0.165 ***	0.155 ***	0.110 ***	0.074 *
Covariances										
AI Perception ↔ News Use Motives	0.482 ***	0.481 ***	0.478 ***	0.476 ***	0.479 ***	0.480 ***	0.470 ***	0.470 ***	0.468 ***	0.470 ***

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; standardized coefficients are reported.

When examining the usage intention for news discovered or written by AI, an increasing positive impact was found to be concomitant with increasing usage of the technology (Discovery: $B = -0.098$ to 0.379; Writing: $B = -0.076$ to 0.390). In line with the previous models, ratings of positive attributes of AI increased the perception of the technology ($\lambda_{PosAtt} = 0.614$ to 0.653, $\lambda_{Benefit} = 0.922$ to 0.977), while negative attributes led to a decrease ($\lambda_{NegAtt} = -0.293$ to -0.283, $\lambda_{Risk} = -0.215$ to -0.197) in both phases of news production. Comparing the discovery/information-gathering and writing/editing phases specifically showed that while the strongest positive impact on participants' usage intentions in the discovery/information-gathering phase was found for "Humans supporting

AI" (B = 0.379), the maximum impact for the writing/editing phase was measured for "AI only" production. Those loadings were all found to be significant except for the measured influence in the "No AI" scenario for the writing/editing phase.

Analyzing the motivation to use news produced by or with AI, we found a positive and significant impact for all levels of AI usage in both phases (Discovery: B = 0.167 to 0.447; Writing: 0.166 to 0.417). While the loading in the discovery/information-gathering phase steadily decreased with an increase of AI integration level, leading to the lowest positive impact in the "AI only" scenario (B = 0.167), the lowest impact in the writing/editing phase was found for "Humans supporting AI" (B = 0.166), with an increase measured towards "AI only" (B = 0.2). The composites underlying the latent construct "news usage motivation" all showed positive loadings for opinion and social needs, which had the strongest impact for both the discovery/information-gathering and writing/editing phases (Discovery: λ_{Ent} = 0.651 to 0.659, λ_{Inf} = 0.499 to 0.527, λ_{Opi} = 0.791 to 0.806, λ_{Soc} = 0.81 to 0.83; Writing: λ_{Ent} = 0.654 to 0.66, λ_{Inf} = 0.499 to 0.517, λ_{Opi} = 0.791 to 0.806, λ_{Soc} = 0.813 to 0.83). While the impact of entertainment and social needs showed a slight but steady increase with stronger integration of AI, the influence of information and opinion needs decreased accordingly.

Observing the influence of "AI performance" on consumers' news usage intentions showed positive and significant influences for all levels of AI usage (Discovery: B = 0.141 to 0.226; Writing: 0.095 to 0.211). For both phases, the strongest positive impact was found for the "Humans supporting AI" scenario, while the lowest impact was measured for "Humans and AI working as equals".

When analyzing consumers' trust in news created by or with AI, we found the strongest impact for the "No AI" and "AI only" scenarios for both phases. While the impact was low but positive for the different levels of AI augmentation (Discovery: B = 0.033 to 0.092; Writing: B = 0.025 to 0.097), loadings were stronger in the case of manual or automated production (Discovery: B_{NoAI} = 0.157, B_{AIonly} = 0.218; Writing: B_{NoAI} = 0.151, B_{AIonly} = 0.246). While these influences were found to be significant in most phases and scenarios, the loadings for "AI supporting humans" in the discovery/information-gathering phase and "AI and humans working as equals" in both phases remained non-significant.

"AI familiarity" was shown to have a negative influence on participants' news usage intentions when no AI was used in the process. However, with all different levels of AI integration into both phases of the production process, this influence became positive and showed an increasing impact with higher levels of AI usage (Discovery: $B = -0.016$ to 0.171; Writing: -0.012 to 0.122). In contrast to the other, mostly significant, independent variables in the model, the impact of "AI familiarity" was only found to be significant for both phases in the "Humans supporting AI" and "AI only" scenarios.

Finally, in line with the previous models, we found that the significant impact of "general news trust" decreased with higher levels of AI integration. While the influence stayed positive for all scenarios observed in the models, the strongest positive impact was found for "No AI" usage in production. The lowest impact was measured for the "AI only" scenario (Discovery: B = 0.22 to 0.438; Writing: B = 0.074 to 0.422).

5. Discussion and Conclusions

This study showed a wide range of influencing factors relevant to consumer perceptions/preferences regarding news organizations' AI applications in a traditionally human-centric production process. These granular insights regarding how consumers perceive/prefer and trust various approaches to AI–human collaboration in news production and their drivers will be beneficial for the news industry as it contemplates how best to incorporate AI technologies for a socially impactful consumer product. To increase the intelligibility of the conclusion, this paper aggregates all findings by the components included in the models to give an overview of the work and discuss its implications.

First, the results suggest the importance of existing, general AI perceptions in affecting consumers' preferences for the degree of AI–human collaboration in news production, as well as their AI news trust and usage intention. AI-perception-oriented variables were

found to be significant across the board. In particular, the results showed that positive perceptual attributes toward AI (i.e., "Positive attitude towards AI" and "Benefits of AI") carried over to specific AI applications in news, and vice versa. This finding stands in line with previous publications on technology perception and its influences (e.g., Bao et al. 2022; Schepman and Rodway 2020). Nevertheless, there are some nuanced differences. While the impact of AI perception (RQ1) was positive for participants' AI level preference at all levels of AI integration, we found an increasing positive impact on AI news trust (RQ2) and AI news usage intention (RQ3) with stronger integration of the technology. In the usage intention model, we found negative influences of AI perception only for the "No AI" scenario, showing that consumers perceiving AI to be performant wish for the technology to be applied. Regarding AI news trust, we found increasing influences of AI performance to be concomitant with increasing augmentation. This finding stands in line with the study presented by Bitkina et al. (2020), who also concluded that increasing trust in a new technology might be connected to increasing perception of its performance. Note that while there were some differences regarding application in the discovery/information-gathering and writing/editing processes, the respective variations were marginal.

Second, considering the role of news use motivation in the process, this study discovered some interesting dynamics depending on consumers' specific news motives and involvement. In particular, while opinion and social news motives showed the strongest impact in all three models, entertainment and information news motives were less relevant. It seems that participants who were driven by more subjective and community-type content had stronger feelings and lower tolerance of AI integration. On the other hand, those who sought information/entertainment fulfillment from news were more open to the presence of AI in the news process. Additionally, addressing RQ1, we found that news consumers with high involvement (i.e., strong news usage motivations) tended to prefer the traditional, human-centric mode of news production, while consumers with less involvement (i.e., weak news usage motivations) were either more open to changes in or cared less about the integration of such technology into the news process. While we found non-significant loadings especially for lower levels of AI integration in the SEM focused on RQ2, which observed consumers' preferences and trust in AI news, our findings were highly significant in the usage intention analysis (RQ3), indicating the major importance of consumers' motivations in that regard.

Third, this study found the role of perceived "AI news performance" to differ significantly among the three models. In particular, there were variations by news production phase regarding this variable. While the results showed similar impacts of perceived AI news performance on participants' AI news usage intentions (RQ3) and AI–human integration level preferences (RQ1) for both phases, its influence on AI news trust (RQ2) varied. Specifically, the performance variable showed a strong uplift of trust when automation (i.e., "AI only") was used in the discovery/information-gathering phase only, while the writing/editing of news by humans only resulted in the strongest positive impact on AI news trust. The finding suggests that when it comes to the writing/editing of news, despite the general positive influence of a high AI performance perception, consumers still see humans as the best means of delivering trustworthy news content. However, AI is still capable of delivering consumer trust when it comes to discovering/gathering information to be used for the later stages of news production. While these influences on participants' AI level preference were found to be non-significant for most observed scenarios, the impact was highly significant in almost all SEMs analyzing their impact on consumers' AI news trust and usage intentions.

Fourth, regarding the role of AI familiarity, which has been well established in previous literature (e.g., Gillath et al. 2021), this study found some granular differences among the three models. While it had a positive impact on consumers' preference for AI integration for almost all scenarios (RQ1), the influence was found to be increasingly positive concomitant with increasing AI integration in the AI news trust (RQ2) and use intention (RQ3) SEMs. While the impact was found to be significant in almost all models analyzing consumers'

AI level preferences and AI news trust, it remained non-significant for all scenarios with lower AI integration in the usage intention model. This could indicate that familiarity is highly relevant to consumers' perceptions of and trust in news produced by or with AI, while the impact on usage intention is only important if the production is dominated by AI (i.e., "Humans supporting AI" and "AI only" production). In addition, AI familiarity was increasingly essential in its contribution to the scenario of seeing AI as a viable option in the news writing/editing stage. In a sense, AI familiarity can be a positive or negative driver depending on the news production tasks and level of AI–human collaboration (e.g., negative influence on participants' news usage intentions when no AI was used in the process).

Fifth, regarding news trust, this study investigated this construct from both general and AI-specific perspectives and successfully highlighted the importance of general news trust in establishing AI news trust, especially in the scenarios of lower-level AI integration. While influences of AI news trust were found to be significant for AI level preference (RQ1) and AI news usage intention (RQ3), general news trust was mostly non-significant for AI level preference (RQ1) and AI news trust (RQ2) but showed significant influence on consumers' AI news usage intentions (RQ3). Analyzing these findings suggested that an increasing level of trust in AI news leads to a preference for the integration of the technology into the news production process. This confirms the results of previous studies such as the one presented by Bitkina et al. (2020), who showed that trust in a new technology is connected to the perception of specific attributes (such as the trustworthiness of news produced by or with AI as in this study) and connected this to trust in AI as the main motivator for consumers' positive responses to AI products. In contrast, general trust in the news decreased AI level perception and AI news trust with higher levels of AI integration. While general news trust remained positive in the SEM observing consumers' usage intentions, the impact nevertheless decreased with increasing AI integration. Analyzing this construct, the study found the strongest uplift for the "No AI" and "AI only" extreme scenarios. This suggests that trust in AI news is especially critical in the case of automation decisions involving AI.

Finally, regarding usage intention, in line with the AI news trust results, the study found an increasing and mostly significant impact of this variable on participants' preferences for increasing levels of AI integration (RQ1). It is logical that consumers with a high intention to use AI news created via lower levels of AI integration preferred a more human-centric product, and consumers who had a high intent to use augmented or automated production appreciated the application of AI technology.

6. Limitations and Future Outlook

This study has some limitations that need to be discussed. First, the data underlying our research were collected from a U.S.-only audience. Our results should therefore be expanded using additional surveys in other countries to make sure they hold under different circumstances and in different environments. Additionally, we developed all models from the same dataset and consequently had some overlaps of variables and analysis of mutual influences. Research should therefore consider additional surveys focused on one of the three aspects of consumers' perceptions only, ensuring our findings can be repeated when using such a specific approach.

Regarding the significance of findings, we clearly indicated that the influence of some variables remained non-significant for some scenarios and levels of AI integration. This is especially relevant for consumers' news use motivations and general news trust, which mostly showed significant influences in the usage intention SEM. While we still found and highlighted significant influences of these independent variables, future research could focus on the elements that showed significant impact throughout the analysis to gain more insights into these highly relevant aspects of consumers' AI news perceptions.

Addressing the scope of this research, our findings provide an initial and broad analysis of the perception of AI news and the impact of AI integration on consumers' trust

in and usage intentions for news resulting from such production processes. As this topic is focused on a current and fast-paced area, this top-level analysis is essential to build a foundation for more granular analysis in the future. For instance, additional studies may investigate specific media types or media formats and the impact of media usage habits or demographic information on consumers' AI news perceptions in such contexts.

Finally, our research was conducted under the premise of two general news production phases. More insights might be possible with specific steps included in the overall process.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Survey item overview.

Item	Statement	Composite	Cronbach α	Construct	Sources
Familiarity	How familiar would you say you are with AI use in news?	Familiarity with AI		AI Perception	(Chan-Olmsted and Luo 2022)
Perception	In your opinion, when a news outlet creates news [. . .] it should: [1–5]	AI Usage Perception			
PosAtt1	AI is useful for people's daily lives	Positive Attitude towards AI	$\alpha_{Pos} = 0.83$		(Schepman and Rodway 2020)
PosAtt2	There are many beneficial applications of AI				
PosAtt3	AI is exciting				
NegAtt1	Organizations often use AI unethically	Negative Attitude towards AI	$\alpha_{neg} = 0.83$		
NegAtt2	AI is threatening				
NegAtt3	AI is dangerous				
Benefit1	AI will be beneficial for democratic society	AI Benefit	$\alpha_{Benefit} = 0.87$		(Bao et al. 2022)
Benefit2	AI will be beneficial for me personally				
Benefit3	AI will be beneficial for most Americans				
Risk1	AI will be risky for a democratic society	AI Risk	$\alpha_{Risk} = 0.84$		
Risk2	AI will be risky for me personally				
Risk3	AI will be risky for most Americans				

Table A1. *Cont.*

Item	Statement	Composite	Cronbach α	Construct	Sources
Entertainment1	I consume news because it's enjoyable	Entertainment Needs	α = 0.83	News Use Motives	(Chan-Olmsted and Wang 2020; Lee 2013; Lin et al. 2004; Siakalli et al. 2015)
Entertainment2	I consume news because it's amusing				
Entertainment3	I consume news because it's entertaining				
Information1	I consume news to keep up with what's going on	Information Needs	α = 0.87		
Information2	I consume news to learn about what's happening around me				
Information3	I consume news to get timely information				
Opinion1	I consume news to know about others' opinions	Opinion Needs	α = 0.78		
Opinion2	I consume news to learn about other people's viewpoints				
Opinion3	I consume news to help form opinions on issues				
Social1	I consume news to learn about things to converse with others	Social Needs	α = 0.77		
Social2	I consume news to appear informed to those around me				
Social3	I consume news to feel part of a community				
NewsTrust1	News aims to inform the public	General News Trust	α = 0.85	General News Trust	(Mourão et al. 2018)
NewsTrust2	News is generally truthful				
NewsTrust3	News is a reliable source of information				
NewsTrust4	In general, news presents a true depiction of the world				
Performance1	In the scenario [1–5] what would you expect the news content to be?—Errors	AI News Performance	Discovery: α_{NoAI} = 0.79 α_{AISup} = 0.82 α_{Equal} = 0.84 $\alpha_{HumanSup}$ = 0.86 α_{AIOnly} = 0.87 Writing: α_{NoAI} = 0.8 α_{AISup} = 0.84 α_{Equal} = 0.86 $\alpha_{HumanSup}$ = 0.86 α_{AIOnly} = 0.87	AI News Performance	(Gursoy et al. 2019)
Performance2	In the scenario [1–5] what would you expect the news content to be?—Consistency				
Performance3	In the scenario [1–5] what would you expect the news content to be?—Accuracy				

Table A1. *Cont.*

Item	Statement	Composite	Cronbach α	Construct	Sources
Intention1	I would consume the news without hesitation	News Usage Intention	Discovery: $\alpha_{NoAI} = 0.87$ $\alpha_{AISup} = 0.89$ $\alpha_{Equal} = 0.9$ $\alpha_{HumanSup} = 0.91$ $\alpha_{AIOnly} = 0.93$ Writing: $\alpha_{NoAI} = 0.89$ $\alpha_{AISup} = 0.9$ $\alpha_{Equal} = 0.9$ $\alpha_{HumanSup} = 0.92$ $\alpha_{AIOnly} = 0.93$	News Usage Intention	(Venkatesh et al. 2012)
Intention2	I think consuming the news would lead to positive outcomes				
Intention3	I would feel comfortable relying on the news				
Intention4	I would plan to consume the news regularly				
Trust Ranking	Please rank-order the level of trust you would have on the news content in the following scenarios concerning the use of AI in the "discovery and information gathering" news phase.	AI News Trust		AI News Trust	(Chan-Olmsted 2019; Domingo et al. 2008; Marconi 2020)

Table A2. Model fit indices—consumers' preferred level of AI integration.

		No AI		AI Support		Equal		Human Support		AI Only	
Factor Loadings		**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**
Model Fit Indices	χ^2	968.97	977.15	1027.92	983.76	1071.92	1029.64	1036.6	1039.62	1078.2	1129.58
	RMSEA	0.141	0.141	0.145	0.142	0.149	0.145	0.146	0.146	0.149	0.153
	CFI	0.602	0.601	0.58	0.598	0.57	0.587	0.59	0.595	0.583	0.578
	p	0	0	0	0	0	0	0	0	0	0

Table A3. Model fit indices—AI integration level impact on consumers' trust in the news.

		No AI		AI Support		Equal		Human Support		AI Only	
Factor Loadings		**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**
Model Fit Indices	χ^2	755.76	790.26	827.91	834.28	841.64	849.99	840.13	861.8	886.46	905.75
	RMSEA	0.143	0.147	0.15	0.151	0.152	0.153	0.152	0.154	0.156	0.158
	CFI	0.636	0.634	0.61	0.606	0.607	0.601	0.607	0.604	0.595	0.592
	p	0	0	0	0	0	0	0	0	0	0

Table A4. Model fit indices—AI integration level impact on consumers' news usage intention.

		No AI		AI Support		Equal		Human Support		AI Only	
Factor Loadings		**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**	**Dis**	**Wri**
Model Fit Indices	χ^2	835.2	858.08	887.04	853.14	889.15	896.53	882.05	897.86	945.19	957.32
	RMSEA	0.139	0.141	0.144	0.141	0.144	0.145	0.144	0.145	0.149	0.15
	CFI	0.681	0.674	0.66	0.67	0.663	0.661	0.668	0.662	0.654	0.655
	p	0	0	0	0	0	0	0	0	0	0

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