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Predictors of Mobile News Consumption through News Applications (Apps): The Impacts of Audience Characteristics, Media Usage, and Motivations

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Abstract: This study investigates news audiences' platform preferences, usage patterns, and factors affecting their mobile news consumption through news apps. Four explanatory factors, news app users' demographics, news media usage, perceptions, and motivations, are proposed to predict adoption intention. By surveying 698 mobile news app users in the US, this study's findings indicate that user perceptions of news apps (i.e., perceived ease of use, compatibility, relative content advantage, and observability) and instrumental motivations of news consumption (i.e., information-seeking and opinion needs) best predict news consumers' willingness to continue using mobile news apps. Theoretical and practical implications are discussed to offer new insights into mobile news audience behavior and inform current digital publishers on cross-media strategies in the highly competitive mobile news market.

Keywords: mobile news apps; news audiences; news media usage

With the increasing adoption of smartphones, mobile news applications (apps) have grown immensely in popularity and value, becoming a regular part of the average person's life (Twipe 2022). Along with prevalent categories of mobile apps, like gaming, business, education, lifestyle, and utility apps, using news apps to access news information is now one of the typical daily activities that mobile users perform (Laziuk 2020). Most American adults (82%) often or sometimes get news from a smartphone, computer, or tablet, and 68% access news through news websites or apps (Shearer 2021). Among mobile news users, 36% use mobile news apps daily, and 73% use them at least once weekly (Liedke and Wang 2023). Notably, during the initial phase of the global COVID-19 pandemic (January to April 2020), the US saw a 104% jump in daily sessions with mobile news apps, while installs surged by 53% as mobile users looked for the latest updates about this global health crisis (Williams 2020). Mobile users, therefore, increasingly rely on news apps for their daily news and media diet, showing stronger "stickiness" than other digital news audiences (Nelson and Lei 2018).

Today's mobile news apps in the US market are mainly developed by online news aggregators (e.g., *Google News* and *Apple News*) and traditional news brands (e.g., *FOX*, *CNN*, and *The New York Times*). News aggregators syndicate content from diverse news sources, convert it into personalized news repertories, and deliver customized news content to target users with recommendation agents or algorithms (George and Hogendorn 2020). Legacy news organizations have invested in mobile apps to react to the economic challenges of decreasing audiences/circulations within the traditional media markets, hoping to successfully (re)gain users via mobile news apps. They are crucial to solidifying audiences as they can yield greater time on them than desktop, smartphone, and tablet news sites (Dunaway et al. 2018), and further increase traffic to news sites (Xu et al. 2014). Moreover, news apps could help platforms and brands convert visitors to loyal audiences, increase engagement, and generate additional revenues, including in-app subscriptions, paywalls, and displaying ads (Jacob 2021).

There are two main pathways to access mobile news content—mobile news apps versus web browsers—which present two distinct mobile news audiences and usage patterns (Nelson and Lei 2018). Mobile news apps are different software programs operating

independently, whereas mobile browsing involves using the internet search mechanism on mobile devices. While there are numerous studies on general mobile news consumption (Chan-Olmsted et al. 2013; Molyneux 2018; Struckmann and Karnowski 2016; Van Damme et al. 2015; Wolf and Schnauber 2015), few investigations specifically focus on news consumption via mobile news apps. Therefore, this study aims to examine mobile news users' preferences and usage patterns regarding various news apps and the factors that affect their intention to use them continuously. This investigation develops an integrative framework, incorporating mobile app users' demographics, news media usage, perceptions, and motivations, to analyze factors affecting news consumption via mobile news apps. The study findings are expected to provide new insights into mobile audience behavior and inform current digital publishers/platforms on cross-media strategies in the highly competitive mobile news market.

1. Literature Review

1.1. Mobile News Consumption through News Apps

Utilizing a mobile news app for news consumption, audiences must intentionally download and open the app, which is a more complex process than simply clicking a link to a news website on a mobile browser. The distinction between these two pathways to accessing news on mobile devices explains why mobile apps typically attract a smaller but more engaged audience, while mobile browsing attracts a larger but less attentive audience (Nelson and Lei 2018). Moreover, prior studies found that people tend to spend less time reading news on mobile browsers (i.e., using a web browser on a mobile device) compared to desktop devices (Mitchell and Holcomb 2016), but they spend more time when using mobile news apps (Nelson and Lei 2018). Several studies suggest a complementary relationship between mobile news app consumption and website browsing. By examining consumers' news consumption behavior on mobile news websites in response to the introduction of a mobile news app, Xu et al. (2014) revealed that the introduction of a mobile app by a major US media brand leads to a significant increase in demand at the corresponding mobile news website. In addition, the authors reported that this effect is more important for consumers with (1) a greater appreciation for concentrated news content, (2) a stronger propensity for a particular political viewpoint, and (3) fewer time constraints.

Various prominent app features/functions, such as constant news updates and push notifications (Stroud et al. 2020), geo-location features (Schmitz Weiss 2013), personalized news content (Cheng et al. 2020), app interface design (Wang 2017), and social media integration, may drive the higher audience engagement with news apps. Stroud et al. (2020) discovered the effects of push notifications on news consumption and learning through two news brand apps, revealing that mobile news app push notifications increased self-reported use of the app. Schmitz Weiss (2013) demonstrated that smartphone users constantly engage with location-based news services, but news organizations only use geo-location features in their mobile apps for traffic and weather. Cheng et al. (2020) further showed evidence that "personalization" is one of the antecedents and a moderator that influences several factors for the continuous intention to use mobile news apps in India.

1.2. Determinants of Mobile News App Consumption

Successful adoption of a communication platform for news consumption relies on multiple factors, which can be identified from different theoretical perspectives, including the technology acceptance model (TAM), innovation diffusion theory, planned behavior theory, and the uses and gratifications (U&G) approach (Cheng et al. 2020; Struckmann and Karnowski 2016). Based on the extensive review of prior research, this investigation develops an integrative research framework, incorporating mobile news app users' demographics, news media usage, perceptions, and motivations, to analyze factors affecting news consumption via mobile news apps.

Mobile News Audience Demographics. Prior research has mixed findings related to divergent uses of mobile news across different demographic groups. One earlier study

revealed that young men who are more highly educated tend to be more engaged with mobile news. The college-educated obtain news through mobile apps to a greater degree than those with less education (app use overall is tied to greater news engagement) (Mitchell et al. 2012). A cross-cultural European study reaffirmed the importance of age and educational level but also suggested that people in relationships and employed people tend to access mobile news more than singles and homemakers (Fortunati et al. 2014). Recent research discovered that most age groups in the US turn to news websites or mobile apps at higher rates than other digital platforms, except for one group aged 18 to 29, whose primary digital pathway for news is social media (Shearer 2021). Hence, age, gender, and educational level have been identified to be influential factors in mobile news usage, proposing the following research question:

RQ1: How do mobile news app users' demographics, including age, gender, and educational level, affect the continuous use intention of mobile news apps?

News Media Usage. According to the news repertoire approach, today's news consumers create a set of media devices, genres, and platforms based on what is available in their culture. This set of media, including news outlets, television programs, streaming services, podcasts, online discussion forums, and social media platforms, gradually becomes a repertoire that people habitually and routinely draw upon in different contexts such as work, commuting, or chat rooms (Wolf and Schnauber 2015). The numerous options require news consumers to choose which media platforms to use and which specific media brands to incorporate into their personal news repertoires (Hasebrink and Popp 2006). Large digital platforms and news aggregators recognize the trend and use algorithms and recommender systems to shape audience attention toward certain practices and content, influencing how news is distributed and repertoires are formed (Wallace 2018). Likewise, legacy news organizations treat mobile news apps as incredibly sticky platforms and essential engagement tools for subscribers and non-subscribers, thereby a prominent means by which the audience engages with news organizations (Jacob 2021).

Within the repertoires, traditional offline news outlets and social media platforms are still critical components in people's daily news diet. Peters et al. (2022) examined Danish young adults' information repertoires, revealing that the "online traditionalism" repertoire list Facebook as the top news source, but legacy media such as national broadcasts and local/regional television news dominate their news repertoire. The "depth-seeking audiophiles" repertoire heavily utilizes audio legacy media as a daily information source.

Specific to the local news in the US, Americans almost equally prefer television and the internet as pathways. In contrast, social media platforms are critical among younger news audiences (Shearer 2021). Nevertheless, news consumers' repertoires include a range of platforms and branded content; therefore, this study suggests that the continuous use intention of mobile news apps might be affected by an array of news media usage. The following research question is posited:

RQ2: How does news media usage, including traditional offline news outlets and social media platforms, affect the continuous use intention of mobile news apps?

Mobile News App User Perceptions. Beliefs about a new technology tend to influence a person's attitude toward using it, influencing their intention to use it. Mobile users' perceptions of news apps establish the importance and relevance of news apps in their news repertoires and fundamentally affect the adoption process. Two concepts from the technology acceptance model (TAM), perceived ease of use and usefulness, are utilized to indicate that news app users' perceptions of a specific behavior are a function of how strongly they believe that the action will lead to a particular outcome (either favorable or unfavorable). Specifically, Davis (1989) proposed that the beliefs of persons concerning the efforts required to use a system can directly affect system usage behavior (perceived ease of use), and people tend to use a system to the extent that they believe it will help to perform their job better (perceived usefulness). Thus, perceived ease of use and usefulness

are two core predictors of technology acceptance intention and actual use behavior in organizational and individual settings (Davis et al. 1989).

Innovation diffusion theory, developed by Rogers (1995, 2003), conceptualized the perceived characteristics of innovation as relative advantage, compatibility, complexity, trialability, and observability. Rogers (2003) further stated that an individual would adopt and use the innovation more frequently if satisfied with these attributes. In the current study context, three innovation characteristics, perceived observability, compatibility, and relative advantage (content and cost), are adopted to reflect the extent to which a news app is perceived as being better than the one that supersedes it. Relative advantage is the degree to which an innovation appears to be better than any other alternatives the potential adopter might have, measured in terms of economics, convenience, satisfaction, and social prestige (Rogers 2003). When examining mobile news adoption, Chan-Olmsted et al. (2013) suggested three dimensions of relative advantage: content, cost, and technology. Specifically, the authors discovered that better content variety and quality contribute to the perceived competitive advantage of mobile news consumption, and the relative cost advantage is salient in adopting mobile news. Thus, the importance of a mobile news app's relative content and cost advantage is suggested in influencing consumers' mobile news app usage. Compatibility refers to "the degree to which the adoption of a technology is compatible with existing values, past experiences, and needs of potential adopters" (Rogers 2003, p. 15). The previous research showed that compatibility is salient in predicting the adoption of a range of new communication technologies (Guo 2022; Kim et al. 2021). Observability is the degree to which the innovation or its results can be seen by others likely to adopt it. If potential adopters are unaware of the innovation or do not see it used by their peers, they are less likely to adopt it themselves (Rogers 2003). Mobile news apps are suggested to possess a relative advantage (content and cost), compatibility, and observability for news consumers when combining online capability with mobility advantage. Hence, the following research question is posited:

RQ3: How do mobile news app user perceptions (perceived ease of use, usefulness, relative content and cost advantages, compatibility, and observability) affect the continuous use intention of mobile news apps?

Motivations for News Consumption. The U&G approach has historically provided functional typologies for many media use situations, including traditional mass media and new communication technologies (Ruggiero 2000). In the context of news consumption, Lee (2013) identified four motivations for news consumption: information-seeking, entertainment, opinion needs, and social needs. The concept of information-motivated news consumption relies on "instrumental uses" (Rubin 1984) and surveillance gratifications theories (Diddi and LaRose 2006). It pertains to the desire to be informed, understand current events, and keep track of the government's performance (Lee 2013). Entertainment-driven news consumption focuses on news audiences' hedonic needs, prioritizing "para-orientational gratifications," including gratifications such as enjoyment, ritual, excitement, and diversion. Opinion-motivated news consumption centers on using the news to form, affirm, or avoid opinions. People may seek out news to help them develop opinions on specific topics, expose themselves to different viewpoints, or find viewpoints that align with their own (Lee 2013). Social-motivated news consumption refers to the consumption of news for social values or interpersonal utilities (Palmgreen and Rayburn 1979).

The extant U&G research in online media and communication systems has identified other motivations, such as habit, pastime, and companionship (Guo and Chan-Olmsted 2015). Venkatesh et al. (2012) defined habit as a "perceptual construct that reflects the results of prior experiences" (p. 161). LaRose (2010) found that new and interactive media use habits are even stronger because of the frequency of chances to use interactive media, which leads to many trigger stimuli for users and more easily accessible chances for repeated behavior. Habits are formed through repetition and, to a lesser extent, regularity in a stable social, physical, or temporal context. Wohn and Ahmadi (2019) examined media habits when investigating micro-

news consumption on mobile social media, indicating that habits are salient in explaining mobile users' continuous intentions. Thus, the following research question is proposed:

RQ4: How do mobile news app users' motivations for news consumption affect the continuous use intention of mobile news apps?

2. Method

2.1. Sample and Data Collection

Online surveys were employed to collect mobile news app user data. First, a pretest was implemented through *Dynata*, a data research firm, to evaluate the reliability of various multi-item scales, confirm item readability, and identify questionnaire errors. The survey questionnaire was revised and improved accordingly. The main test utilizing a national consumer panel administered by *Dynata* was conducted from February to March 2023. In the online survey, the participants first reported their news consumption frequency for offline news outlets and social media platforms. Then, they were asked if they had mobile news app experiences with at least one of the listed 24 news aggregator apps and 26 news source apps. A total of 698 qualified participants were included in the analysis, who were further asked to identify a frequently used news app, and the following set of questions was based on the specified mobile news app. Specifically, the qualified participants indicated their perceptions and motivations for using mobile apps for news consumption. Later, they stated the intention to continue using their mobile news apps. Finally, demographic information, such as age, gender, ethnical background, and educational level, was collected.

Among the respondents, the average age was 44.49 (*SD* = 19.32), and males accounted for 53.5%, females were 45.2%, and the rest identified their gender as "other." Regarding ethnicity, the sample consisted of 73% White Caucasians, followed by African Americans (12.1%), Latino/Latina/Hispanics (7.3%), and Asians (4.6%), respectively. Around 96.0% of the participants had a high school degree or higher, 45.9% were fully employed, and 22% of them retired. Regarding household income, 30.3% of the participants indicated USD 100,000 or more, 19.8% belonged to the USD 50,000 to USD 75,000 category, and another 18.7% indicated between USD 75,000 and USD 100,000 (see Table 1).

Table 1. Demographic information of mobile news app users.

Types of Demographics		Frequency	%
Gender	Male	373	53.4
	Female	315	45.1
	Other	9	1.3
Age	18–24	132	18.9
	25–34	134	19.2
	35–44	128	18.4
	45–54	109	15.6
	55–64	26	3.7
	65–74	95	13.6
	75 or above	73	10.5
Marital status	Married	362	51.9
	Single	294	42.2
	Other	41	5.9
Race/Ethnicity	White	509	73.0
	Black or African American	84	12.1
	Asian	32	4.6
	Latino/Latina/Hispanic	51	7.4
	Native Hawaiian or Pacific Islander	2	0.3
	Mixed race	15	2.2
	Other	4	0.6

Table 1. *Cont.*

Types of Demographics		Frequency	%
Household income	Under USD 30,000	105	15.1
	USD 30,000–USD 49,999	113	16.2
	USD 50,000–USD 74,999	138	19.8
	USD 75,000–USD 100,000	130	18.7
	USD 100,000 or more	211	30.3
Education level	Never completed any form of education	10	1.4
	Primary/elementary school	8	1.1
	Second school	96	13.8
	Some colleges or universities study without earning a degree	145	20.8
	Professional degree/Technical institute	51	7.3
	Bachelor's degree	188	27.0
	Master's degree	33	4.7
	Doctoral degree	13	1.9
	Other	13	1.9
Employment status	Employed outside the home full-time (30 h or more per week)	320	45.9
	Employed outside the home part-time (1–29 h per week)	72	10.3
	Doing income-producing work at home	28	4.0
	Temporarily unemployed	53	7.6
	Full-time student	23	3.3
	Going to school part-time	10	1.4
	Retired	162	23.2
	Full-time homemaker	29	4.2

2.2. Measures

News Media Usage. Participants were asked to indicate how often they used various offline news outlets (i.e., national and local television, radio, and newspapers) and popular social media platforms (i.e., Facebook, Twitter, Instagram, YouTube, Snapchat, and Reddit) in the news consumption purpose. A five-point Likert scale was employed (1 = *Never*, 5 = *Always*). Seven offline news outlets formed a single factor and were averaged (α = 0.825), while six social media platform usage frequencies formed another single factor, social media usage (α = 0.907).

Perceptions of Mobile News Apps. This study adopted two constructs, ease of use and perceived usefulness in TAM, to capture the individual's perceptions toward using or navigating a news app. Three items were adapted from Davis et al. (1989) to assess the ease of use of news apps regarding learning, skillfulness, and usage, through a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). The three items formed a single factor and were averaged (α = 0.869). Perceived usefulness was assessed with four items adapted from Davis (1989), indicating the extent to which a user believed that mobile news apps could be used advantageously and provide positive expected outcomes (α = 0.845).

Moreover, adapted from Flight et al. (2011), this study used three items to assess perceived observability, indicating how visible mobile news apps are as they are used by other news app adopters (α = 0.851). The cost advantage included the perceived value and the time-/money-saving utility of news consumption via mobile apps. Adapted from Chan-Olmsted et al. (2013), three items formed a single factor and were averaged (α = 0.766). The relative content advantage measures whether the news app offers diverse, exclusive, original, and high-quality news content (α = 0.824). Compatibility was employed to evaluate respondents' level of agreement with three statements assessing the variable of perceived compatibility with mobile news apps in general (α = 0.808).

Motivations for News Consumption. This study adopted Lee's (2013) news consumption motivation framework to assess the needs behind mobile news consumers' engagement with news apps, including information-seeking, opinion needs, social needs, and entertainment. Specific to information-seeking needs, this study used a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*) to assess the respondents' level of agreement with

six statements, covering such needs as surveillance, information, decision utility, issue guidance, and vote guidance ($\alpha = 0.868$). Regarding the opinion needs, four items were employed to assess the need to seek assistance in forming opinions on specific issues, to expose one to other viewpoints, and for views from like-minded individuals ($\alpha = 0.821$). Five items were used to form a single factor for the motivation of social needs and were averaged ($\alpha = 0.873$), reflecting social values or interpersonal utilities for news consumption. The motive of entertainment comprised three items illustrating the experience of news consumers with mobile news apps for amusement and enjoyment ($\alpha = 0.845$). Pastime signified how news consumers use mobile news apps to interact with news content out of routine and to occupy time ($\alpha = 0.862$). Companionship implied aloneness relief as one of the reasons behind news consumption via mobile news apps ($\alpha = 0.829$). Adapted from Cheng et al. (2020), the habit variable was measured by three items, indicating behavioral patterns that people inevitably perform because of their past learning ($\alpha = 0.788$).

Continuous Use Intention. Adapted from Cheng et al. (2020), three measurement items were used to evaluate news audiences' likelihood of constant use of mobile news apps in the future, trying to use them in their daily lives, or keeping using them as regularly as they do now. Participants were asked to rate their level of agreement with these three statements using a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). These three items formed a single factor and were averaged ($\alpha = 0.825$). All variables and their measures are listed in Table 2.

Table 2. Measurement scales and sources.

Construct	Measure	Sources
Determinants		
Perceived ease of use	Learning to use this news app is easy for me.	Davis et al. (1989)
	It is easy for me to become skilled at using this news app.	
	It is easy to use and navigate this news app.	
Perceived usefulness	This news app is helpful to enhance the effectiveness of my life in general.	Davis (1989)
	This news app is very useful to my life in general.	
	This news app helps improve my performance in general.	
	This news app provides very useful services and information to me.	
Perceived observability	I can observe this news app being used by others.	Flight et al. (2011)
	If I adopted this news app, others could see me using it.	
	It would be common to see this news app in use by others.	
Relative cost advantage	This news app saves time in searching for the news I want.	Chan-Olmsted et al. (2013)
	This news app saves money in getting the news I want.	
	This news app has a favorable price/quality relationship over other news platforms that meet similar needs.	
Relative content advantage	The news app offers a variety of news content.	Constructed by author
	The news app offers high-quality news content.	
	This news app offers exclusive and original news content.	
Perceived compatibility	Using this news app fit my lifestyle.	Flight et al. (2011)
	This news app fits well with how I consume news content.	
	This news app is compatible with most aspects of my news consumption habit.	
Entertainment	I use this news app because it is entertaining.	Lee (2013)
	I use this news app because it is fun.	
	I use this news app because it is enjoyable.	
Pastime	I use this news app when I have nothing better to do.	Guo and Chan-Olmsted (2015)
	I use this news app because it passes the time away, particularly when I am bored.	
	I use this news app because it gives me something to do to occupy my time.	

Table 2. *Cont.*

Construct	Measure	Sources
Companionship	I use this news app when there is no one else to talk to or be with.	Guo and Chan-Olmsted (2015)
	I use this news app because it is a good thing to turn to when I am alone.	
	I use this news app because it makes me feel less lonely.	
Habit	I use this news app because it is a habit.	Cheng et al. (2020)
	I use this news app because it is a thing I do without really thinking about it.	
	I use this news app because it is part of my life routine.	
	I use this news app because I want to access news content wherever I am.	
	I use this news app because I want to access news content through any mobile digital devices.	
Information-seeking	I use this news app because I want to find out what's going on in the world.	Lee (2013)
	I use this news app because I want to keep up with the way my government performs.	
	I use this news app because I want to make myself an informed citizen.	
	I use this news app because I want to gain important new information.	
	I use this news app because I want to fulfill my "need to know."	
	I use this news app because it helps me learn about others.	
Opinion needs	I use this news app because it helps me form opinions on issues.	Lee (2013)
	I use this news app because I want to know about other people's opinions.	
	I use this news app because I want to expose me to views that are different from my own.	
	I use this news app because I want to expose me to views from like-minded commentators.	
Social needs	I use this news app because I want to appear informed to those around me.	Lee (2013)
	I use this news app because I want to feel a part of a community.	
	I use this news app because I want to make new connections with people.	
	I use this news app because I want to feel more sociable.	
	I use this news app because I want to have something to talk about with others.	
	Adopting this news app would be met with approval from friends and family.	
	Many of my friends would want me to use this news app.	
Dependent variable		
Continuous use intention	I intend to continue using news apps in the future.	Cheng et al. (2020)
	I will always try to use news apps in my daily life.	
	I will keep using news apps as regularly as I do now.	

2.3. Data Analysis and Statistics Procedure

A hierarchical multiple regression analysis was conducted through *SPSS* to examine the relationships between various predictors (i.e., demographics, news media usage, perceptions, and motivations) and the outcome (i.e., continuous use intention). Hierarchical multiple regression is a method that focuses on the relative effect of more than one explanatory variable on the outcome variable. It enables researchers to build several models to compare the proportion of explained variance in the dependent variable by sequentially adding models. The newly added models always include the previous models. The analysis can determine which model better explains and predicts the outcome in a statistically meaningful way. This study took four models, referred to as blocks. The first block consisted of news app user's demographic profiles (i.e., age, gender, and educational level), the second block added news media usage (i.e., offline news outlets and social media platforms), the third block added user perceptions of news apps (i.e., perceived ease of use, usefulness, compatibility, observability, and relative content and cost advantages), and the fourth block added news consumption motivations (i.e., entertainment, pastime, habit, companionship, information-seeking, opinion needs, and social needs).

3. Results

This study explored how mobile news users' demographics, news media usage, perceptions, and motivations affect their continuous intention to use mobile news apps. The usage frequencies of offline news outlets and social media platforms are shown in Table 3. The results of the hierarchical multiple regression are illustrated in Table 4. The overall model with all four blocks of predictors was statistically significant, F (18, 678) = 60.927, $p < 0.001$, $R^2 = 0.618$. The overall model accounted for 61.8% of the variance in the continuous use intention of news apps. Adding each block of explanatory factors (i.e., demographic, news media usage, perception, and motivation blocks) to predict continuous use intention led to a statistically significant increase in R^2 (Table 4). Thus, the results illustrated that all four dimensions contributed to mobile news audiences' continuous intention to use news apps. Especially, the addition of news app user perceptions in the third block significantly increased R^2 by 0.355, (F (11, 685) = 81.334, $p < 0.001$, $R^2 = 0.566$), suggesting that mobile news consumers' perceptions of news apps contributed to the most significant proportion of explained variance in the outcome variable. In terms of individual predictors, six factors were salient, including perceived ease of use ($B = 0.116$, $\beta = 0.131$, $p < 0.001$), compatibility ($B = 0.099$, $\beta = 0.103$, $p = 0.007$), observability ($B = -0.099$, $\beta = -0.133$, $p < 0.001$), relative content advantage ($B = 0.206$, $\beta = 0.215$, $p < 0.001$), information-seeking ($B = 0.223$, $\beta = 0.207$, $p < 0.001$), and opinion needs ($B = 0.125$, $\beta = 0.126$, $p = 0.003$). Neither individual demographics nor news media usage predictors were significant in predicting the continuous use intention of mobile news apps.

Table 3. The usage frequencies of offline news outlets and social media platforms.

News Media Types	Usage Frequency (*Mean*)
Offline news outlets	
National broadcast TV networks (i.e., *FOX, NBC, ABC, CBS*, etc.)	3.70
Local TV newscasts	3.55
National cable TV networks (i.e., *CNN, MSBNC*, etc.)	3.44
Local newspapers	3.05
Local radio stations	3.04
National newspapers (i.e., *The New York Times, USA Today*, etc.)	2.99
National radio networks (i.e., *NPR, CBS News Radio*, etc.)	2.85
Social media platforms	
YouTube	3.05
Facebook	3.00
Instagram	2.75
Twitter	2.59
Snapchat	2.42
Reddit	2.24

Table 4. Hierarchical multiple regression results of demographics, new media usage, perceptions, and motivations on the continuous use intention of mobile news apps.

Variable	Continuous Use Intention		
	B	*β*	*SE*
Block 1: Demographics			
Age	0.007 ***	0.176	0.002
Gender	−0.117 *	−0.077	0.058
Educational level	0.088 *	0.093	0.037
$R^2 = 0.059$, F (3, 693) = 14.394 ***			
Block 2: News media usage			
Age	0.013 ***	0.321	0.002
Gender	−0.051	−0.034	0.053
Educational level	−0.014	−0.015	0.035
Offline news outlets	0.263 ***	0.298	0.040
Social media platforms	0.115 **	0.182	0.036

Table 4. *Cont.*

	Continuous Use Intention		
Variable	***B***	***β***	***SE***
$R^2 = 0.211$, F (5, 691) = 36.993 ***			
$\Delta R^2 = 0.152$, ΔF (2, 691) = 66.791 ***			
Block 3: Perceptions of mobile news apps			
Age	0.004 *	0.089	0.002
Gender	−0.044	−0.029	0.040
Educational level	0.003	0.003	0.026
Offline news outlets	0.080 *	0.090	0.031
Social media platforms	−0.006	−0.010	0.028
Ease of use	0.132 ***	0.149	0.034
Perceived usefulness	0.124 **	0.130	0.038
Observability	−0.073 **	−0.097	0.028
Compatibility	0.145 ***	0.151	0.038
Relative cost advantage	0.140 ***	0.148	0.038
Relative content advantage	0.268 ***	0.280	0.042
$R^2 = 0.566$, F (11, 685) = 81.334 ***			
$\Delta R^2 = 0.355$, ΔF (6, 685) = 93.519 ***			
Block 4: Motivations for news consumption			
Age	0.002	0.050	0.002
Gender	−0.051	−0.033	0.038
Educational level	0.012	0.013	0.025
Offline news outlets	0.023	0.026	0.030
Social media platforms	−0.018	−0.028	0.028
Ease of use	0.116 ***	0.131	0.032
Perceived usefulness	0.051	0.054	0.037
Observability	−0.099 ***	−0.133	0.028
Compatibility	0.099 **	0.103	0.036
Relative cost advantage	0.039	0.042	0.038
Relative content advantage	0.206 ***	0.215	0.041
Entertainment	0.063	0.074	0.033
Pastime	−0.029	−0.038	0.026
Companionship	0.018	0.023	0.031
Habit	0.020	0.023	0.031
Information-seeking	0.223 ***	0.207	0.046
Opinions needs	0.125 **	0.126	0.042
Social needs	0.051	0.059	0.035
	$R^2 = 0.618$, F (18, 678) = 60.927 ***		
	$\Delta R^2 = 0.052$, ΔF (7, 678) = 13.081 ***		

n = 698; * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

4. Discussion

As mobile devices permeate individuals' news consumption, their information repertoires have experienced gradual changes regarding platform combinations, content preferences, and engagement patterns. Mobile news apps have become critical in people's news repertoires, offering engagement and content delivery for mobile news consumers. This study explores news app users' demographics, news media usage, perceptions, and motivation factors that might contribute to the continuous intention to use mobile news apps. It is worthwhile to highlight both the theoretical and practical implications.

This investigation empirically validates the positive, predictive power of mobile news audiences' perceptions of news apps, such as relative content advantage, perceived ease of use, and compatibility, on their continuous use intention, which resonate with prior mobile news study (Chan-Olmsted et al. 2013). Notably, the effect of the most potent predictor—relative content advantage—on the constant use intention is noteworthy. Compared to other news platforms, the timely, diverse, exclusive, or original news content offered by news apps presents comparative advantages, becoming the primary driver of the platform's continuous use intention. Furthermore, mobile news apps are better for

consuming content—video and audio news, regular text articles, or a mix of different formats. The findings have particular practical implications for digital publishers or legacy news brands when they deliver their news content over mobile platforms. As newspapers, radio, and television news media transit to digital platforms, news organizations should adapt their content strategies to cater to mobile users. This includes producing shorter, more engaging content that is optimized for mobile consumption and leveraging multimedia elements like videos, infographics, and interactive features.

The study findings add empirical support regarding the impacts of perceived ease of use and technology compatibility on the attitude toward using the technology in the TAM model and innovation diffusion research fields. Although prevalent mobile news consumption through news apps implies that the technology has passed the introductory phase, the current study reinforces the predictive power of ease of use and compatibility, ultimately driving news consumers' willingness to continue using the news platform.

Specifically, the study findings emphasize the importance of better user experience and design for a news app's success. According to some industry research, actionable user experience practices should be considered to ensure that news apps are user-friendly and easy to use. For example, such innovative features of news apps include showing users the most relevant story first, keeping users' attention with list views, increasing subscriptions by allowing registration, helping users find content with categories, encouraging social sharing, integrating with users' social media, and push notifications (Jain 2020). Summarily, to stay competitive, news organizations need to embrace innovation and adopt new technologies. This includes exploring artificial intelligence (AI), augmented reality, and other emerging technologies that can enhance mobile news delivery and user engagement. Thus, how to trigger news customers' user-friendly perceptions of mobile news apps and make them feel mobile news content is easily accessible, compatible with their lifestyles, and meets their demands is increasingly crucial for news app developers and content producers.

More interestingly, the perceived observability of accessing news through mobile apps is negatively related to the continuous use intention of news apps. Observability is the degree to which the innovation or its results can be seen by others likely to adopt it. If there are observable positive outcomes from implementing the innovation, then the innovation is more adoptable. On the contrary, if potential adopters are unaware of the innovation or do not see it used by their peers, they are less likely to adopt it themselves (Rogers 2003). In the context of news consumption, the news content and platform choices are more likely to be influenced by each news audience's interests and preferences, given that news consumption is a more private and individualized behavior. When utilizing the mobile news app to consume specific news subjects or content, users may try to avoid being seen by others, even though many use mobile news apps in public. Nevertheless, the degree to which others can see mobile news app usage in public is highly individualized and influenced by cultural factors and social situations. Ultimately, the decision to continue using a news app is likely based on various factors, and the perceived privacy of the behavior is just one potential consideration.

The positive effects of information-seeking and opinion needs on the continuous use intention of mobile news apps indicate that mobile news consumption through news apps is more driven by instrumental rather than hedonic or routinized needs. Mobile news consumption motivations behind mobile apps can be caused by either instrumental- or ritualized-oriented, a notion proposed and examined by many U&G scholars, suggesting that the media orientations reflect the amount and type of media use, media attitude, and expectation (Rubin 2009). Specifically, ritualized orientation means "using media more habitually to consume time and for diversion. It entails greater exposure to and affinity with the medium" (Rubin 2009, p. 172). Instrumental orientation focuses on "seeking certain message content for information reasons" (p. 172). Instrumental use is active and purposive, suggesting utility, intention, selectivity, and involvement (Rubin 2009). The instrumental use of news apps, such as seeking information or using the news to form, affirm, or avoid opinions, can enhance the likelihood of continuous use intention.

Specifically, the instrumental needs of mobile news app users are closely related to their desire for knowledge and understanding of current events. Therefore, news app users may use mobile apps to stay informed about important topics like politics, business, or health. Moreover, most mobile news apps today offer customized news feeds and personalized searches, where an app algorithm selectively curates what information users want according to their interests and preferences. Consequently, the more news app users seek information or form and discuss their opinions, the more likely they are to utilize mobile news apps to satisfy such needs.

5. Limitations and Future Research

This study highlights valuable findings regarding mobile news app users' platform preferences, usage patterns, and factors affecting the continuous use intention of news apps. However, several limitations should be considered when evaluating the research results and interpreting the conclusions. While the use of online consumer panels sampled from a total online population helps enhance the external validity of the findings, the news app adoptions among the respondents are clustered around established brands and platforms. Similar studies should be conducted to reexamine the adoption intention as more news app adoption occurs. Second, the representative sample of mobile news app users was based in the US, which may limit the applicability of the findings to other cultural or geographical contexts. Third, the self-reported survey method might introduce various biases and drawbacks, necessitating cautious interpretation of the data. Future research should consider media brand perspectives, such as brand loyalty, identification, and attachment, to generate more robust results. Additionally, this study identifies four sets of exploratory factors: news app users' demographics, news media usage, perceptions, and motivations. Thus, this study's theoretical and practical implications also center on these aspects. Other social dynamics, such as the news audience's political ideology and party affiliation, might influence their intent to continue using particular mobile news apps. Therefore, a valuable approach for future studies is to consider these external social factors when interpreting the predictive effects.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board of University of Connecticut (protocol code # X22-0266 and approved on 7 February 2023).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding author.

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