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Mobile News Adoption among Young Adults: Examining the Roles of Perceptions, News Consumption, and Media Usage

Sylvia Chan-Olmsted¹, Hyejoon Rim¹,
and Amy Zerba²

Abstract

Using the frameworks of innovation diffusion and technology acceptance model, this study examines the predictors of mobile news consumption among young adults. The results show that the perceived relative advantage (especially content), utility, and ease of use of mobile news are positively related to its adoption. The young adults' news consumption patterns and preferences, as well as media usage, all play a role in the adoption of mobile news. This study also validates the importance of examining the adoption outcome from multiple perspectives.

Keywords

mobile news, young adults, mobile phone, news adoption

As mobile phones have become a staple in most consumers' lives and user-friendly mobile devices like the iPad grow in popularity, major media companies are investing more resources into creating new ways of reaching news audiences via mobile platforms. The Pew Research Center recently reported that over half of smartphone owners used their mobile devices for news in 2011.¹ The development of mobile news has

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significant implications for consumers' news consumption patterns, especially those who are still forming their adulthood news habit. The growth of mobile news and its impact on the next generation of news users clearly affect the future of the news industry.² However, limited studies have investigated the factors affecting the consumption of news on mobile platforms, particularly by the young adult segment.

It was suggested that mobile news consumers are more likely to follow news frequently, use multiple news platforms/sources, seek practical utilities from news information, value portal news sites, share content with others, and be receptive to advertising campaigns, especially those via social media.³ It seems that mobile news adopters have certain distinctive media usage patterns and news preferences. It is also possible that there exist some dynamics of interplay between mobile news and other traditional news media. This study is designed to examine the role of consumer perceptions of the mobile platform in comparison to other news media, as well as the effects of news preferences and media usage patterns.⁴ The current study also focuses on the mobile news consumption of young adults (ages eighteen to twenty-four), who are in their transition years of becoming adults and establishing their consumption patterns.⁵ Scholars have argued that young adults are a vital demographic for news organizations to pay attention to because they are in the process of establishing lifelong news consumption habits.⁶ Furthermore, many scholars have suggested the importance of examining new media consumption by college students as newer media technologies are often woven into the fabric of their daily lives as information and entertainment sources.⁷

Literature Review

Factors Affecting Mobile News Adoption

Adoption of mobile devices for news consumption purposes can be seen as diffusion of innovation driven by various factors. From the perspective of consumers, a number of theoretical models have been applied to innovation adoption. Among all, innovation diffusion theory (IDT) has been regarded as a reliable framework for examining technology diffusion and adoption.⁸ Many IDT concepts that address the comparative nature of technology as perceived by users have also been applied in the context of the technology acceptance model (TAM).⁹ While IDT suggests five attributes—relative advantage, compatibility, complexity, trialability, and observability—affect one's rate of technology adoption, TAM proposes that perceived usefulness and perceived ease of use are important factors that predict one's behavioral intention toward a specific information technology. These constructs are closely related to IDT notions of relative advantage and complexity.¹⁰

Another factor to contemplate is the interplay between mobile news and other traditional news platforms. Past empirical investigations have suggested both complementary and displacing effects of new technology. For instance, while the user-centric approach, grounded in uses and gratification theories, has found mostly complementary

effects between the new and old technology,¹¹ the medium-centric approach has generally suggested a displacement effect between the two.¹² Specifically, Dimmick, Feaster, and Hoplamazian recently concluded that there exists a replacing effect of mobile news on other news media.¹³ Nevertheless, some also suggested that there will not be an “absolute” displacement effect between the new and the old. Traditional media will exist, in varying degrees, to complement new media in serving different consumer groups.¹⁴ In other words, the degree of displacement and complementarity between a new media technology and the old might vary, contingent on user characteristics such as sociodemographics. The current study adopts this nonabsolute displacement perspective and sees the interplay between mobile news and other traditional news platforms as a continuum of complementarity and displacement because of the nature of mobile devices. In fact, it was suggested that mobile communication cannot be studied as a single innovation because it constitutes a bundle of rapidly evolving services and functionalities.¹⁵ To begin, this study reviews three consumer aspects in the adoption process: perceptions, news consumption and preferences, and media usage.

Perceptions

Beliefs about a new technology tend to determine a person’s attitude toward using that technology, which in turn influences his or her intention to use it. Therefore, a person’s perceptions of mobile news establish the importance and relevance of mobile news in his or her life and fundamentally affect the adoption process. Rogers suggested five perceived attributes—relative advantage, complexity, compatibility, observability, and trialability—as the factors that affect consumer adoption of a new technology.¹⁶ In the context of the current study, perceived relative advantage is the focus of investigation for the following reasons: first, relative advantage is a more comprehensive variable that can be used to examine an innovation that is multifaceted by nature (e.g., the consumption of news via a technology that serves multiple functions); next, many empirical studies thus far have identified “relative advantage” to be a robust variable influencing technology adoption across different communication technologies.¹⁷ Defined as the extent to which an innovation is perceived as being better than the one it supersedes,¹⁸ relative advantage has also consistently been found to be an important predictor of usage for more cognitive innovations like information systems.¹⁹ Lin suggested that relative advantage can be examined from three main perspectives: content, technology, and cost.²⁰ The three-pronged approach again provides a multiplicity of approaches to investigate why consumers might adopt the behavior of news consumption via mobile devices.

Relative content advantage. Empirical studies have suggested that better content variety and quality contribute to the perceived competitive advantage of newer media. Waterman suggested that greater product diversity is a substantial advantage of home video in competing with other media.²¹ Jung, Perez-Mira, and Wiley-Patton examined influences of cognitive concentration and media content on consumers’ acceptance of mobile television and concluded that media content played an important role in

consumers' mobile television adoption.²² In the context of online media, Simon and Kadiyali suggested that online media have a substantial advantage over traditional offline media because websites are perceived to have the capacity of holding unlimited amounts of content.²³ Since mobile news is often the mobile version of online news, the perceived advantage of unlimited content might also be present for this news platform. In addition, convenient news accessing mechanisms/interfaces and growing numbers of mobile news providers may also enhance the perceived image of content variety for mobile news. It is plausible that relative content advantage might be a predictor of adoption of mobile news.

Relative technology advantage. The tangible features of a technology often lead to consumers contemplating a new medium as a substitute for an existing medium.²⁴ Compared to offline media, the Internet has many technology-related advantages.²⁵ From the perspective of online news, Chyi and Sylvie suggested that online newspapers are capable of producing interactive, multimedia content such as online forums, searchable news archives, links to related stories, frequent updates, and webcasting, making them superior to offline news media in those increasingly important technical aspects.²⁶ Adding to the aforementioned technological advantage of online news, mobile news also offers the technical benefit of mobility. It is likely that relative technology advantage will contribute to the adoption of mobile news.

Relative cost advantage. Cost has always been a vital factor in the adoption of an innovation.²⁷ Previous studies have empirically supported the importance of relative cost of a medium or system in influencing consumers' decisions to adopt the medium or system. Cha suggested that the economic benefit of the Internet and video on demand as a movie platform is positively related to consumers' likelihood of using the online platform.²⁸ Others have found that cost outplays the content and/or technological advantages in many adoptions if it becomes a burden to consumers.²⁹ Another aspect of cost advantage is the consideration of search costs—the opportunity cost of time spent searching, as well as the related actual search expenditures. It is evident that the technological capacity of the Internet could lower the search costs of many products and services. Coupling online capability with the mobility advantage, mobile news may be perceived to possess a relative cost advantage for consumers.

As an emerging medium that possesses a multiplicity of characteristics rooted in news consumption, mobile device functionalities, and online communication, the advantage of mobile news might be more multifaceted and different from other news outlets. The fact that mobile news consumption is typically associated with a highly personal, valued device that performs essential communication functions might also affect the perceived relative advantage of mobile news. Accordingly, the following research question and hypothesis are posited:

RQ1: What do consumers perceive to be the relative content, technology, and cost advantages of mobile news? What specific content, technology, and/or cost attributes of the mobile news platform affect its overall relative advantage?

H1: Perceived relative advantage of mobile news will be positively related to the adoption of mobile news.

Perceived utility and ease of use. TAM-related studies have suggested that an individual's intention to accept a technology is dependent on two beliefs: perceived usefulness and ease of use.³⁰ This framework has been applied in the empirical investigations of various technologies, including the adoption of mobile devices.³¹ In a study of 3G services in six countries, Pagani concluded that usability and user-friendliness were among the most important adoption criteria for advanced mobile services.³² Similarly, in their study of mobile television adoption, Jung, Perez-Mira, and Wiley-Patton found that consumers' perceived usefulness of mobile television is a strong predictor of its adoption.³³ To a lesser degree, consumers' perceived ease of use for mobile television also explained their intent to use mobile television services. The "medium-centric" factors of utility and complexity are relevant to the adoption of mobile news in that mobile news is highly differentiated from other news platforms because of its delivery format and device. Logically, the perceived utility and ease of use associated with the consumption of news using such a mechanism would positively affect its adoption. The following research hypotheses are posited:

H2a: Perceived usefulness of mobile news will be positively related to the adoption of mobile news.

H2b: Perceived ease of use of mobile news will be positively related to the adoption of mobile news.

News Consumption and Preferences

The consumption of news sources is both an active selection and a habitual behavior. It was suggested that, when confronted by many news choices, a consumer is likely to lapse into habitual patterns of consumption to conserve mental resources, rather than constantly engaging in active selection, once he or she finds the initial selection to be satisfactory.³⁴ Because the consumption of news is both an exploration and a habitual process, one's existing news consumption patterns and preferences are likely to be indicative of how one might approach the adoption of a new news platform.

Mobile news users have shown preferences in news content, like current events, weather, sports, and business/finance.³⁵ In addition, "on-the-go" news consumers are more likely to access more news platforms, read a print version of a national newspaper, and use multiple online news sites.³⁶ Frequent users of online newspapers have been found to adopt mobile news at a higher rate than the general public, and the readers of free dailies are more likely to use mobile news services.³⁷ Mobile news users preferred more information-driven news content than softer news like lifestyle news. In addition, they were heavier users of multiple news platforms, especially online news. There also seems to be a positive relationship between online and mobile news consumption levels. It is also reasonable that a consumer will have a higher desire to

access news without space or time limitations when he or she is a heavier use of news. Accordingly, the following hypothesis is proposed:

H3: News consumption level is positively related to the adoption of mobile news.

To explore if there is indeed a relationship between news preference and mobile news adoption, the following research question is also proposed:

RQ2: Does news preference (i.e., preferences for certain types of news topics) relate to mobile news adoption?

Media Usage

As suggested by the theory of media attendance, the role of habit is significant in media usage behavior, even under the active selection principle presumed in the uses and gratifications tradition. One's media usage tends to persist until there is a change in daily routines.³⁸ It is likely that the adopters of mobile news would have certain media consumption tendencies that condition them to want to access news without geographic limitations. A recent industry study shows a strong relationship between overall media usage and mobile media usage.³⁹ For example, heavy users of social or mobile media are more likely to use television and the Internet than the general population.⁴⁰ Nguyen and Western observed a complementary relationship between Internet use and traditional media source, and suggested that people who use the Internet for the purpose of searching for news and information tend to use news sources on traditional media.⁴¹ Other studies also found that heavy users of the Internet spend more time on mass media than light users;⁴² and Internet usage is not replacing, but supplementing, traditional media usage.⁴³ The positive relationship between Internet use and traditional media use might be applicable in the mobile setting as mobile news is essentially the consumption of news via the wireless Internet platform. Empirical evidence has also suggested that the adoption of technological innovations is better predicted by the ownership of related innovations (i.e., technology cluster).⁴⁴ Other studies elaborate on the technology cluster concept and postulate that certain technologies might be in a cluster, not due to their perceived attributes or lifestyle compatibility, but rather due to the shared infrastructure of the technologies or their functional interdependency.⁴⁵ Taking the attributes, infrastructure, and interdependence factors into the consideration of technology clusters, while keeping in mind the multiplicity nature of mobile news, this study suggests that the adoption of mobile news might be predicted by an array of media usage, as well as other mass media that are used to access news traditionally. Therefore, the following hypothesis is posited:

H4: Media usage level, including various phone, Internet, and media usages, will be positively related to the adoption of mobile news.

Demographic Profiles

As mentioned, young adults are the most active group in mobile media consumption. Men are also more likely than women to get mobile news.⁴⁶ Past studies in news consumption and media use have pointed out the effect of demographics, especially in directing the types of gratifications sought during media consumption. For example, while some suggested that males read more newspapers and watch more television news, some found age played a role in shaping the motivations of news consumption.⁴⁷ In the context of mobile platform adoption, both Barwise and Strong, and Okazaki concluded that age, income, marital status, and gender affect the use of mobile Internet.⁴⁸ The Pew Center recently noted that young adults are more likely to tune into news on mobile devices.⁴⁹ To eliminate the possible influence of demographic variables in moderating the other proposed factors, survey participants' gender, marital status, education, income, and age will be controlled.

Method

Data Collection

According to the Pew Research Center, the millennial generation (ages eighteen to twenty-nine) is the population group that is most active in owning a mobile phone (95%) and using the phone to access the Internet (63%).⁵⁰ College students, mostly between the ages of eighteen and twenty-four, also compose a large portion of young adults. Therefore, it seems appropriate to use this group as the population of focus. A pretest ($N = 54$) was first carried out to ensure the validity and reliability of constructs and refined question wordings. A convenience sample of undergraduate students from five different introductory courses at a large public university in the southeastern United States was sent an email link to the final survey in March 2011. A total of 384 subjects participated in the self-administered online survey among the 755 students contacted, resulting in a response rate of 51%. The participants were offered extra credit in their corresponding course.

Measures

Mobile news adoption. Dong and Saha suggested that innovation adoption should not be analyzed simply as a dichotomous decision because whether to adopt is only the first level of adoption.⁵¹ Scholars have pointed out that the "timing" and "intensity" of adoption are two important aspects that offer more meaningful explanation of the innovation adoption behavior.⁵² Applying this multiplicity approach, the current study investigates four aspects of media adoption: the degree of mobile news usage (i.e., perceived usage frequency), intensity of adoption as reflected by time invested in each mobile news use (i.e., time spent using mobile news per occasion), timing of the adoption (i.e., how early did they adopt), and money invested in mobile news (i.e., the

adoption of paid mobile news services). By using multiple measures, this study addresses both the frequency (degree of usage) and intensity (how long each usage) aspects of mobile news adoption. It also assesses the value/cost facet of adoption (willingness to invest in mobile news early and pay for content).

Respondents were first asked how often they get news through a mobile device on a 7-point scale (1 being *never* and 7 *very frequently*).⁵³ This measure of self-reported perceived usage level is used for two reasons. First, consumers of mobile news often check the news in short spurts, so the measure of times per day or week might be misleading. Second, the interval scale of perceived frequency allows for relative comparisons of news usage across different media platforms from the user perspective. Mobile news users were then asked how much time they spend reading/watching/listening to news on a mobile device each time (i.e., time spent per use in minutes), how long they have been reading/watching/listening to news through mobile devices (i.e., history in months), and whether they subscribed to any paid mobile news services.⁵⁴ Nonusers, on the other hand, were asked to indicate how likely they will read/watch/listen to news through a mobile device in the near future. All respondents were asked to indicate their willingness to pay for mobile news services using a 7-point scale.

Relative advantage. To assess perceived relative advantage of news on the mobile platform, this study examines various content, cost, and technology attributes of mobile news consumption. Specifically, using scales adapted from previous studies in measuring perceived online platform/news related advantages, the respondents were asked to evaluate twelve attributes of mobile news by indicating their level of agreement with each statement on a 7-point scale.⁵⁵ While the content advantage covers the variety and quality of news, the cost advantage includes the perceived value and the time-/money-saving utility of mobile news. On the other hand, the technology advantage is examined from three different perspectives—customization (i.e., interactivity and personalization), immediacy (i.e., wherever and whenever news consumption), and multiplicity (i.e., multimedia/links/searchability formats). The resultant Cronbach's alphas show that all measures were reliable (see Table 1). Because mobile devices are quite different from the traditional news platforms in the technical aspect involving the device itself (e.g., screen size, viewing quality, etc.), they are often perceived to be more technically limiting in terms of the actual consumption act.⁵⁶ Therefore, this study also investigates the perceived device disadvantage (reverse coded) using a modified scale from the previous study.⁵⁷ Finally, seventeen items measured six relative advantages (see Table 1).

Perceived utility and ease of use. Perceived usefulness and ease of use were each measured by a three-item 7-point scale adopted from Jung, Perez-Mira, and Wiley-Patton's study that measured the perceived usefulness and ease of use of mobile TV.⁵⁸ All measures were deemed reliable (see Table 1).

Media usage. To assess one's media profile, participants were asked to indicate how often they used various mass media/communication platforms such as mobile phone, social media, texting, instant messaging/chatting, and computer, using an adapted 7-point scale.⁵⁹

Table 1. Variable Measures

Variable	Items		Cronbach's alpha	Source
Relative advantage ($\alpha = .89$)	Offers better variety of news	Content	.87	Cha and Chan-Olmsted, "Relative Advantages of Online Video Platforms"
	Offers better quality of news			
	Offers good value for the news I get	Cost	.8	
	Saves time in searching for the news I want			
	Saves money in getting the news I want			
	Offers better interactivity	Tech customization	.8	
	Offers better personalization			
	Allows me to get news wherever I want to	Tech immediacy	.88	Leung and Wei, "More than Just Talk on the Move"
	Allows me to get news whenever I want to			
	Offers additional info through related links	Tech multiplicity	.88	Chyi and Sylvie, "Online Newspapers in the U.S."
Offers news searchability				
Offers content in multimedia				
Navigation	Device Specific	.81		
Screen size			Anil et al., "Overcoming Barriers"	
Viewing quality				
Connection				
Data input				
Utility and ease of use	Increase the quality or output of my life/work	Usefulness	.91	Jung, Perez-Mira, and Wiley-Patton, "Consumer Adoption of Mobile TV"

(continued)

Table 1. (continued)

Variable	Items		Cronbach's alpha	Source
	Enhance the productivity of my life/work			
	Help my life/work			
	Learning it is easy for me	Ease of Use	.94	
	Easy for me to become skillful			
	Mobile news is easy to use			

News consumption and preference. The media consumption measure was adopted from Pew Research,⁶⁰ but revised into an interval scale. Using a 7-point scale, respondents were asked to indicate how often they got news from the following: print newspapers, television news, radio news, online portal news sites, and news sites of newspaper/TV/radio/magazine media. To measure preferences of news topics, respondents were asked to indicate their interests on each news topics (i.e., sports, international, national, state, health/science, economic/business, local/community, religion, politics, technology, environment, arts/entertainment, opinions, weather, and other) using a 7-point scale.

Demographics. As control variables, the demographics of respondents, such as level of education, age, gender, marital status, household income, and ethnicity were also collected.

Sample

A total of 384 subjects participated in the online survey. After eliminating incomplete questionnaires, 376 responses were analyzed.⁶¹ Among the participants, 84% used mobile news and an additional 17% indicated some intention to use mobile news in the near future. The average length of the respondents' experience in using mobile devices was sixteen months. There was no specific access pattern, as most users reported using mobile news throughout the day (49%). In regard to paying for mobile news, 86% of respondents said that they were not willing to pay for mobile news. The participants also rated the Internet ($M = 4.54$, $SD = 1.91$) as the medium they used most often, followed by mobile phone ($M = 4.18$, $SD = 1.68$), television ($M = 3.72$, $SD = 1.03$), radio ($M = 3.06$, $SD = 1.21$), print newspaper ($M = 2.77$, $SD = 1.59$), and magazine ($M = 2.73$, $SD = 1.72$). In terms of consumption, online portal news sites showed the highest mean score ($M = 5.62$, $SD = 1.55$), followed by media

Table 2. Summary of Simple Regression Analysis on Mobile News Adoption

Predictor variables	Dependent variables			
	Mobile news usage	History of use	Time spent per use	Paid mobile service intention
Relative advantage	$\beta = .39, R_{adj}^2 = .15, t(374) = 8.17^{***}$	$\beta = .19, R_{adj}^2 = .03, t(314) = 3.38^{**}$	$\beta = .09, R_{adj}^2 = .01, t(312) = 1.64$	$\beta = .17, R_{adj}^2 = .03, t(374) = 3.42^{**}$
Perceived usefulness	$\beta = .26, R_{adj}^2 = .06, t(371) = 5.10^{***}$	$\beta = .02, R_{adj}^2 = .00, t(311) = 0.30$	$\beta = .08, R_{adj}^2 = .00, t(309) = 1.33$	$\beta = .12, R_{adj}^2 = .01, t(371) = 2.27^*$
Perceived ease of use	$\beta = .31, R_{adj}^2 = .10, t(371) = 6.35^{***}$	$\beta = .12, R_{adj}^2 = .01, t(311) = 2.18^*$	$\beta = -.00, R_{adj}^2 = .00, t(309) = -0.06$	$\beta = .05, R_{adj}^2 = .00, t(371) = 0.88$
News consumption	$\beta = .17, R_{adj}^2 = .03, t(371) = 3.34^*$	$\beta = .17, R_{adj}^2 = .03, t(311) = 3.07^*$	$\beta = .15, R_{adj}^2 = .02, t(309) = 2.72^*$	$\beta = .18, R_{adj}^2 = .03, t(371) = 3.56^{***}$
Media usage	$\beta = .20, R_{adj}^2 = .04, t(372) = 4.03^{***}$	$\beta = .19, R_{adj}^2 = .03, t(312) = 3.47^{**}$	$\beta = .15, R_{adj}^2 = .02, t(310) = 2.67^{**}$	$\beta = .09, R_{adj}^2 = .01, t(372) = 1.75$

β = standardized regression coefficient; R_{adj}^2 = adjusted *R*-square.
 $^*p < .05$. $^{**}p < .01$. $^{***}p < .001$ (two-tailed).

news sites ($M = 5.21, SD = 1.74$), television news ($M = 4.61, SD = 1.62$), and radio news ($M = 3.34, SD = 1.65$). Print newspaper ($M = 3.20, SD = 1.68$) and news magazines ($M = 2.86, SD = 1.62$) were the least used news sources. A correlation analysis on the four dependent variables to assess their construct validity showed all variables are significantly related. For instance, timing of the adoption is positively related to mobile news usage frequency ($r[316] = .33, p < .001$), time spent using mobile news per occasion ($r[313] = .35, p < .001$), and willingness to pay ($r[316] = .21, p < .001$).

Results

H1 posited that overall relative advantage of mobile news would be positively related to the adoption of mobile news and was partially supported. A series of simple regressions show that overall perceived relative advantage (i.e., a composite of all six advantage attributes) significantly predicted mobile news usage ($\beta = .39, t[374] = 8.17, p < .001$), history of use ($\beta = .19, t[314] = 3.38, p < .01$), and willingness to pay for mobile news service ($\beta = .17, t[374] = 3.42, p < .01$), whereas time spent per use was insignificant (see Table 2).⁶²

The second hypothesis posited that perceived mobile news usefulness (**H2a**) and ease of use (**H2b**) would be positively related to the adoption of mobile news. **H2a** was partially supported. Simple regression shows that perceived usefulness significantly predicts mobile usage ($\beta = .26, t[371] = 5.10, p < .001$), and willingness to pay for mobile news service ($\beta = .12, t[371] = 2.27, p < .05$). **H2b** was also partially supported: ease of use significantly predicts mobile usage ($\beta = .31, t[371] = 6.35, p < .001$) and history of mobile news use ($\beta = .12, t[311] = 2.18, p < .05$).

H3, positing that news consumption would be positively related to the adoption of mobile news, was supported. Simple regressions show that participants' overall news consumption (i.e., a composite score of all news consumption variables) is related to all dependent variables, mobile news usage ($\beta = .17$, $t[371] = 3.34$, $p < .01$), history of use ($\beta = .17$, $t[311] = 3.07$, $p < .01$), time spent per use ($\beta = .15$, $t[309] = 2.72$, $p < .01$), and paid service willingness ($\beta = .18$, $t[371] = 3.56$, $p < .001$). In addition, stepwise regressions were performed to identify significant news consumption variables on each dependent variable. There was no multicollinearity, as VIF ranged from 1.05 to 1.49. For mobile news usage, the regression produced a statistically significant model ($F[1, 365] = 32.50$, $p < .001$), explaining 8% of variance. The results showed that the use of media news sites ($\beta = .29$, $p < .001$) significantly predicts mobile news usage in a parsimonious model. Radio news consumption ($\beta = .16$, $p < .01$) was a significant predictor of history of use ($F[1, 305] = 7.65$, $p < .01$), explaining 2% of the variance. In terms of time spent per use, the model was statistically significant ($F[1, 304] = 5.70$, $p < .05$), explaining 2% variance in consumers' time spent on mobile news. Print newspaper consumption ($\beta = .14$, $p < .05$) was a significant predictor. Finally, in regard to willingness to pay for mobile news services, radio news consumption ($\beta = .17$, $p < .01$) predicted this adoption variable; the model was statistically significant ($F[1, 365] = 10.95$, $p < .01$), explaining 3% of the variance (see Table 3).

H4 posited that media usage level would be positively related to the adoption of mobile news and was partially supported. Simple regressions examined the relationships between the overall usage (i.e., a composite score of all usage variables) and each dependent variable. Media usage was positively related to mobile news usage ($\beta = .20$, $t[372] = 4.03$, $p < .001$), history of use ($\beta = .19$, $t[312] = 3.47$, $p < .01$), and time spent per use ($\beta = .15$, $t[310] = 2.67$, $p < .01$), but not willingness to pay. Multiple stepwise regressions examined the effects of each media usage variable. There was no multicollinearity, as VIF ranged from 1.20 to 1.81. Regarding mobile news usage, a significant model ($F[1, 365] = 24.75$, $p < .001$) explained 6% of the variance. Mobile phone use ($\beta = .25$, $p < .001$) was the most significant in predicting mobile news usage. Regarding history of use, a statistically significant model was produced ($F[2, 304] = 7.95$, $p < .001$), explaining 4% of the variance. Mobile phone use ($\beta = .17$, $p < .01$) and radio use ($\beta = .13$, $p < .05$) significantly predicted consumers' history of use. For time spent per use, print newspaper use ($\beta = .22$, $p < .001$) predicted time spent on mobile news ($F[1, 304] = 15.13$, $p < .001$) and explained 4% of variance. Finally, in regard to willingness to pay, the regression produced a significant model ($F[1, 364] = 5.07$, $p < .05$) and explained 1% of the variance. Only print newspaper use ($\beta = .12$, $p < .05$) was statistically significant in predicting this adoption variable.

RQ1 investigates how consumers perceived the mobile news platform to be better than others with respect to content, technology, and cost attributes. Tech immediacy ($M = 5.90$, $SD = 1.23$) showed the highest mean score, followed by tech multiplicity ($M = 5.23$, $SD = 1.29$), tech customization ($M = 4.78$, $SD = 1.43$), cost ($M = 4.69$, $SD = 1.32$), content ($M = 3.74$, $SD = 1.35$), and device-specific advantages ($M = 3.27$, $SD = 1.18$).

Table 3. Summary of Multiple Regression Analyses: Standardized Regression Weights

Predictor variables	Dependent Variables			
	Mobile News Usage	History of Use	Time Spent per Use	Paid Mobile Service Intention
Relative advantage				
Content	.17**	.18**	.19**	.12*
Cost	.30***	—	—	—
Technology multiplicity	—	—	—	.13*
Device specific	.09*	—	—	—
	$R^2_{adj} = .20$ $F_{3,372} = 31.76,$ $p < .001$	$R^2_{adj} = .03$ $F_{1,314} = 10.15,$ $p < .01$	$R^2_{adj} = .03$ $F_{1,312} = 11.82,$ $p < .01$	$R^2_{adj} = .03$ $F_{2,373} = 8.17,$ $p < .001$
News consumption				
Print newspaper	—	—	.14*	—
Radio news	—	.16**	—	.17**
Media news sites	.29***	—	—	—
	$R^2_{adj} = .08$ $F_{1,365} = 32.50,$ $p < .001$	$R^2_{adj} = .02$ $F_{1,305} = 7.65,$ $p < .01$	$R^2_{adj} = .01$ $F_{1,304} = 5.70,$ $p < .05$	$R^2_{adj} = .02$ $F_{1,365} = 10.95,$ $p < .01$
News preference				
Sports	.25**	—	—	—
Economic/business	—	—	—	.18*
Technology	.21**	—	—	—
Environment	—	—	-.19**	—
	$R^2_{adj} = .11$ $F_{2,150} = 10.09,$ $p < .001$	—	$R^2_{adj} = .03$ $F_{1,130} = 4.83,$ $p < .05$	$R^2_{adj} = .02$ $F_{1,151} = 4.76,$ $p < .05$
Media usage				
Mobile phone	.25***	.17**	—	—
Print newspaper	—	—	.22***	.12*
Radio	—	.13*	—	—
	$R^2_{adj} = .06$ $F_{1,365} = 24.75,$ $p < .001$	$R^2_{adj} = .04$ $F_{2,304} = 7.95,$ $p < .001$	$R^2_{adj} = .04$ $F_{1,304} = 15.13,$ $p < .001$	$R^2_{adj} = .01$ $F_{1,364} = 5.07,$ $p < .05$

β = standardized regression coefficient; R^2_{adj} = adjusted R-square.

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed).

To identify the specific advantage predictors that affect the degree to which consumers adopt mobile news, stepwise regression analysis was performed. The analysis included the six advantage predictors (i.e., content, cost, tech customization, tech

immediacy, tech multiplicity, and device-specific advantage). There was no multicollinearity, as all VIFs ranged from 1.02 to 3.10. In regard to mobile news usage, three relative advantage variables explained 20% of variance ($F[3, 372] = 31.76, p < .001$). Cost ($\beta = .30, p < .001$), content ($\beta = .17, p < .01$), and device ($\beta = .09, p < .05$) significantly predicted mobile news usage. Regarding history of use, content variables produced a significant model ($F[1, 314] = 10.15, p < .01$), explaining 3% of the variance. The result indicates that the content-sparing advantage ($\beta = .18, p < .01$) is statistically significant in predicting how early consumers might adopt mobile news. In terms of time spent per use, the content advantage explained 3% of variance ($F[1, 312] = 11.82, p < .01$). As in the case of the history variable, only content ($\beta = .19, p < .01$) predicted time spent on mobile news. Regarding willingness to pay, the regression produced a statistically significant model ($F[2, 373] = 8.17, p < .001$) and explained 4% of the variance. The results indicate that technology multiplicity ($\beta = .13, p < .05$) and content ($\beta = .12, p < .05$) were statistically significant in predicting this adoption variable.

To address **RQ2**, stepwise regression was again performed on the news preference variables. Regarding mobile news usage, the model was statistically significant ($F[2, 150] = 10.09, p < .001$) and explained 11% of the variance. The results indicate that the preferences for sports ($\beta = .25, p < .01$) and technology news ($\beta = .21, p < .01$) are significant predictors of mobile news usage. None of the news preference variables predicts history of use. For time spent per use, a statistically significant model emerged ($F[1, 130] = 4.83, p < .05$), explaining 3% of the variance. The results indicate that environmental news ($\beta = -.19, p < .01$) is significant in predicting this variable but in a negative direction. Finally, in regard to willingness to pay, the model was statistically significant ($F[1, 151] = 4.76, p < .05$), and explained 2% of the variance. Economic/business news preference was significant ($\beta = .18, p < .05$) in predicting the adoption variable (see Table 3).⁶³

Conclusions and Discussion

This study generally confirms past work in new media adoption, which suggests a positive relationship between perceived relative advantage of a new technology and its adoption. Interestingly, while the relative advantage perception of mobile news plays a role in how early and how much a young adult might use mobile news and his or her willingness to pay for such services, it is insignificant in predicting his or her length of mobile news usage per occasion. It is plausible that other usability and/or needs and gratification factors might play a more significant role in this aspect of mobile news behavior. Thus, the time-per-usage outcome might be better understood from a user-centric approach.⁶⁴

This study contributes to current knowledge of general news consumption in that it illustrates the importance of examining the process from multiple perspectives. The factors affecting a consumer's timing of adoption might be different from the ones that influence his or her usage level or willingness to pay for content. This notion

especially holds true for news consumption via a “hybrid” media platform like mobile news. While the perceived relative advantage of content significantly predicted all four aspects of mobile news adoption, cost and device attributes were more relevant to mobile news usage and the multiplicity advantage (i.e., the technological advantage of offering multimedia, searchability, and related links) to one’s willingness to pay for the services. As far as “consumer perceptions” are concerned, multiple adoption measures seem to reveal more specific predictors for different stages of adoption or intensity of consumption, at least in the case of young adults.

This study also confirms the TAM propositions, as perceived utility and ease of use were shown to affect mobile news adoption. The importance of examining innovation adoption from multiple perspectives is again corroborated. While both the utility and ease of use of mobile news play a role in its usage, utility also affects a young adult’s willingness to pay, and ease of use contributes to earlier adoption. There is indeed a need to differentiate empirically between the timing and intensity of mobile news adoption, especially when monetary payment is involved. While ease of use might lead to earlier acceptance, without the perceived presence of utility, a transactional adoption is difficult.⁶⁵

From the perspective of news consumption and preferences, the former was a significant factor predicting a young adult’s adoption of mobile news in all aspects. It is interesting that young adults are not only avid online news users, but also reluctant print news readers. The current study also found that the preference and use of different news media, which have inherently different characteristics, are also relevant to this group’s news adoption. While the use of media news sites is most relevant to mobile news usage for the young adults, newspaper consumption is more critical in predicting time spent per mobile news use. On the other hand, radio news is significant in affecting the timing of adoption and willingness to pay. Previous studies have suggested that mobile news users tend to use more news sources and media platforms. It seems that different news media play different roles in the mobile news adoption process for this group. For instance, while the use of media news sites might be related to the desire to access these sites “on-the-go” via a mobile platform, one’s preference for the content-heavy newspaper medium might translate to spending more time on mobile news. As for the predictive power of radio news, it is plausible that heavier radio news users might value the mobility nature of the radio medium, hence favoring the new mobile news platform. The multiplicity of mobile news as reflected by its relationships with the traditional news media is indicative that this emerging news platform might play a more complementary than substitutive role in news consumption, supporting the proposition that there is no “absolute” displacement of traditional news media from the newer news media such as mobile news. Instead, there is likely a continuum of complementarity and displacement dependent on the characteristics and needs of consumers and the competing media’s capabilities.

This study further confirms previous findings that show sports news as a leading news topic for mobile news users. However, different news preferences are related to different adoption aspects for young adults. While the news preferences of sports and

technology news positively affect mobile news usage, interest in business/economic news is more important for predicting willingness to pay for mobile news services. It is possible that the relationship between the two may be governed by one's socioeconomic status. This finding reiterates the significance of multiple measures in investigating mobile news consumption and the subsequent marketing of mobile news content.

Finally, the study suggests that mobile phone use is a relatively stronger predictor of mobile news adoption than traditional media use. In a sense, mobile news might be considered more functionally similar to mobile phones than traditional news media (i.e., considered to be in the same technology cluster with mobile phones than news media).⁶⁶ Nevertheless, the use of two specific traditional media does play a role in some aspects of mobile news adoption for the young adults. While heavy radio users adopt mobile news earlier, heavy newspaper users tend to have higher adoption intensity, as they spend more time using mobile news and are more willing to pay for the services. It is plausible that radio and newspaper offer two relevant media utilities sought by the mobile news users: the convenience of mobility and the value of content. In summary, the technology cluster involving mobile news might be rooted more in lifestyle compatibility than specific technology attributes or shared infrastructure/format. As communications technology continues to evolve and grow in functional complexity, it is perhaps more fruitful to examine the concept of technology clusters from the perspective of adopters' lifestyle needs than technology attributes.

This study is limited by its focus only on a specific population segment that tends to be heavy Internet users and more comfortable with new media platforms. In addition, young adults who are in college might differ from other groups of similar age, in terms of access to new media technologies and the need to use such technologies for educational purposes. Thus, there are limitations to what may be inferred to other population groups. Note that many studies define young adults differently using various age brackets. Consequently, there have been conflicting findings on the mobile news usage of these groups.⁶⁷

This study also did not take into account *how* participants receive news on their phone; for example, many young adults are reading the news via shared links on social media applications (e.g., Facebook and Twitter). The process of reading news via social media applications, however, is still seen as an additional news media choice versus an alternative news media platform, according to the most recent Pew study.⁶⁸ Presently, only 9% of U.S. adults are heavy followers of news recommendations via Twitter or Facebook on a desktop or mobile device.⁶⁹ Studies also have found that information seeking is not a salient motive for using sites like Facebook.⁷⁰ Nevertheless, the news consumption pattern of this consumer segment is indicative of how the news industry might evolve in the future as this group of users begins to establish its lifelong news habits. The survey also utilized a convenience sample of college students, which again limits its generalizability. A further limitation is the low adjusted- R^2 values of some multiple regression models. Although there were many statistically significant associations, not all models were powerful predictors.

Future research may expand on the list of relevant attributes to include different types of mobile news contents. For instance, sports and weather info might be more relevant to the mobility and immediacy nature of mobile news. It will also be interesting to see how different consumer segments vary in their use of mobile news and if the predictors of the adoption change based on the adopter demographics. Utilizing uses and gratification theory, one might also explore the motivations behind the adoption of mobile news. Finally, news consumption via social media, through either mobile devices or computers, is another relevant area of investigation for this particular group of users.

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Notes

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 61. Among the respondents, 70% were female. All participants were between eighteen and twenty-four years old, with a mean age of twenty. About 64% were Caucasian, while 16% and 12% of the respondents were Hispanic and African Americans, respectively. Most reported an annual family income of \$20,000 or less.
 62. The willingness variable was used because only 3% of the respondents actually subscribed to paid mobile news.
 63. There is a multicollinearity issue here, as many news preference variables were highly correlated (i.e., national, international, state, local, etc.) with many VIF values above 10. Because this research question focuses on the overall contribution of news preferences to the adoption instead of their relative importance in the adoption process, and utilized a stepwise regression procedure, the effect of multicollinearity is a lesser concern, and the variables that are correlated with one another can be seen as a set of factors that collectively influence the adoption variables.
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