Interactive Digital Stories in Financial News: Opportunities for Increased Youth Engagement and Financial Literacy Education

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Abstract

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Interactive Digital Stories in Financial News: Opportunities for Increased Youth Engagement and Financial Literacy Education

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This thesis examines youth engagement with financial news and its capacity to boost financial literacy levels through interactive content. An experiment is conducted in which university students (N=125) read one of four stories from the *Wall Street Journal* and then answer questions about their experience. Results show that participants exposed to interactive stories were more likely to say they learned something new about business, finance, or economics from the story; were more likely to say they would read financial news again in the future; were more likely to say they enjoyed the format of the content; and were more likely to have deeper engagement levels with the content. Results also seem to reveal a perception bias: while most participants said they do not enjoy financial news content and find it boring, irrelevant, and/or difficult to understand, a majority of participants also reported having a positive experience reading their assigned story, interactive or not. Dedication

For my parents, David and Sheila. Thank you for your constant support throughout the years – and for introducing me to the sports fan line back in second grade. I haven't stopped reading the newspaper since.

And for Grammy, my fellow news buff. Thank you for always helping me stay the course.

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Chapter 1: Financial Literacy, Youth, and Interactive Digital Storytelling

Financial literacy rates among adults vary around the world, but even in the world's most advanced economies – where average financial literacy rates are higher than in poorer countries – there is still room to grow (Klapper et al., 2014). For example, Standard and Poor's 2014 Rating Services Global Financial Literacy Survey found that 57% of adults in the United States (U.S.) are financially literate, meaning they correctly answered at least three out of four questions measuring fundamental financial concepts (Klapper et al., 2014). In Denmark, Sweden, and Norway – the three countries who scored the highest – the survey found that 71% of adults are financially literate (Klapper et al., 2014). In other words, in countries where rates of financial literacy are among the highest in the world, about one-third of the adult population is still behind.

Young people are no exception. The same survey found that 32% of 18-35-yearolds in major emerging economies (i.e. China, Russia) and 56% in advanced economies are considered financially literate (Klapper et al., 2014). In the U.S., data from the 2009 US National Financial Capability Survey showed that 49% of respondents with a college degree aged 25-34 correctly answered three basic financial literacy questions (De Bassa Scheresberg, 2013). Higher levels of financial literacy are associated with better financial decisions and planning, so these numbers raise concerns as financial literacy is particularly important for young people, who still stand to face many significant financial decisions in their life, like saving for retirement, taking on debt such as a mortgage, and, especially in the United States today, paying back student loans (De Bassa Scheresberg, 2013).

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Considering this lag in financial literacy rates, this thesis explores the role financial news content can play in financial literacy education, and looks at youth engagement with financial news generally. Since young people today are digital natives – those who have used modern computers since a young age, as opposed to older generations – this thesis focuses particularly on interactive digital stories from financial news outlets, and their financial literacy education capacity. Groups from parents to governments have sought to improve financial literacy levels of young people through things like school classes and online education programs, but many initiatives have had less-than-desirable results (Willis, 2008; McCormick, 2008). Given the increasingly interactive nature of new media being adopted by news outlets, financial news content may be positioned to fill a gap in financial literacy education.

The Development of Interactive Digital Storytelling

Since news outlets started publishing their content on the Internet in the 1990s, their capacity to tell stories through a combination of more interactive mediums, such as video and sound, has continued to grow (Steinbock, 2000). Interactivity reached a new level, however, in 2012, when the *New York Times* published the story "Snow Fall: The Avalanche at Tunnel Creek," a Pulitzer Prize-winning article about skiers and snowboarders caught in an avalanche in Washington's Cascade Range. The piece included elements like photos and videos, but was revolutionary because of its 3D graphics that would unfold as the reader scrolled down the webpage and through the story's six chapters (Branch, 2012). "Snow Fall" would be the first of many such interactive pieces from the *New York Times*, and would lead other news organizations to

publish similarly-styled articles. It would also open up a new line of academic research, prompting questions about the future of the young genre of interactive digital journalism and what the implications of its presence in the online news world might for mean both its consumers and producers.

This thesis focuses on stories like "Snow Fall," which are referred to here as interactive digital stories. These stories are a category distinct from "multimedia journalism," which Deuze (2004) defined as a piece that uses at least two forms of media, like print, photos, videos, and audio. Interactive digital stories tend to include interactive elements like animation, interactive maps, video loops, interactive infographics, slideshows, among others, according to an analysis of 50 long-form stories like "Snow Fall" (Jacobson et al., 2016). Considering these definitions, interactive digital stories are defined in this thesis as those with at least three media formats, at least one of which is interactive and manipulated by the reader, such as clickable buttons or animated graphics that unfold for the reader when they scroll through the story – a technique that has come to be known as "Scrollytelling" (Godulla & Wolf, 2017).

Since 2012, an array of news outlets have published interactive digital stories on a variety of topics, including politics, natural disasters, sports, culture, environmental crises, healthcare, and technology (Jacobson et al., 2016). These stories are usually long-form, not breaking news, and employ literary devices found in long-form print pieces and novels: of the 50 stories Jacobson et al. (2016) analyzed, 92% contained scenic description; 84% contained characterization or character development; 64% contained dramatic tension; and 40% contained dialogue. In addition, 70% of the stories were

serious or neutral-serious in tone and most involved first-person point-of-view storytelling (Jacobson et al., 2016).

Strategy Behind Interactive Digital Storytelling

Indeed, there exists a market for long-form stories in general across many subject areas. Sites like *De Correspondent, Atavist, Faction,* and *Narratively* – all specifically long-form-only journalism, or "Slow Journalism," outlets – charge subscription fees or take donations and have taken steps that some might consider counterintuitive to market norms in media, such as not allowing advertisements onto their webpages as a way of keeping their work free of distractions and corporate interests (Dowling, 2016).

Technology has opened up the realm of possibilities for long-form journalism, and news organizations have begun incorporating multimedia elements in long-form pieces to enhance the consumer's experience. Dowling and Vogan (2014), looking at interactive digital stories in the *New York Times*, *Sports Illustrated*, and *ESPN*'s *Grantland.com*, argue that these stories offer the outlets a boost in value to their brand, writing: "Digital longform stories like 'Snow Fall,' 'Out in the Great Alone,' and 'Lost Soul' function as opportunities for these prominent media organizations to build a branded sense of renown in an increasingly competitive market."

In addition to brand-building, there may also be a direct financial incentive attached to interactive digital stories. "Snow Fall," for example, garnered three-and-a-half million views, with the average consumer staying on the page for 12 minutes (Romanesko, 2012). In an online news economy driven in part by advertising revenue, a story as successful as "Snow Fall" would be to the advantage of media organizations. On the other hand, interactive digital stories are expensive and time-consuming for news organizations to produce, and some question if the cost of the stories outweigh the benefits they generate, especially depending on the topic being covered. Former *New York Times* reporter Bruce Lambert, for example, told the paper's public editor at the time, Margaret Sullivan: "...After finishing ['Snow Fall,'] I wondered why so much talent, effort and expense was devoted to the story of a few elite athletes in a luxury sport who knowingly and needlessly took risks that turned out so badly... Why not, instead, pick an issue of far greater import" (Sullivan, 2013, para. 9, 11).

Media Richness Theory and Reader Engagement with Online News

Early research on reader engagement with interactive online journalism showed a lackluster reception of new technology. When interactive technologies in online journalism first started emerging (i.e. hyperlinks, comments, submit news tip, videos, etc.), Chung (2008) found readers used interactive features infrequently and that the credibility of the news organization was more important to readers than interactive features. The median age of Chung's (2008) survey's respondents was 40, however younger people's engagement with interactive – namely participatory – features, like comments sections, is also underwhelming, according to a study conducted in Finland, for example (Hujanen & Pietikäinen, 2004).

However, researchers conducted these studies before interactive online journalism as we know it today was picking up steam, well before the types of interactive features this thesis examines became more common in digital reporting. Conill and Karlsson (2015) argue that the overall gamification of journalism, especially the insertion of gamelike features (such as animation and interactive graphics) into journalism, can engage readers, especially younger ones since they are digital natives, at a higher rate. They point out that literature shows a lack of engagement of young people with more traditional news mediums, citing Wadbring & Bergström (2014) who found that millennials consume less print and digital print news than older generations. They then point to data on youth engagement with video games – like a study from the Pew Research Center (2008) that found that 97% of teens in the U.S. play video games, and 72% do so on their phones – and argue that video game-like features can be a method for motivating youth engagement (Conill & Karlsson, 2015). Aside from boosting engagement, other studies have shown that gamification can also be more conducive for learning. For example, Chang et al. (2017) found that students who learned about carbon footprints via an online game in which participants could click on objects and were exposed to features like animation had an easier time understanding the content and had higher concentration and interest levels than students who learned from a more standard webpage. Choi and Baek (2011) found that interactivity, fidelity of representation, and immediacy of control impacted 11 and 12-year-olds' concentration and enjoyment levels, or "engagement flow," when learning in a virtual, game-like setting. And Kiili et al. (2012) found that things like a feeling of control, clear goals, having a rewarding experience, and feedback were important factors in university students' learning success while playing a business simulation game.

The above studies and their claims of game-like features providing higher engagement and higher conduciveness for learning are based on, and support, the

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propositions of Media Richness Theory (MRT). According to MRT, communication mediums that engage multiple senses and contain more cues lead to more satisfying and effective communication (Daft & Lengel, 1986). For instance, a phone call is richer than an email because communication via phone allows for factors like tone of voice to be communicated, and it allows for faster feedback – or a higher level of synchronicity (Dennis & Valacich, 1999). This can also be applied to non-interpersonal communication, like narratives presented in media content, such as in the studies mentioned in the above paragraph. In other words, the more sensory (audio, visual, touch) features exist in a piece of media content, the more effective it can be in communicating its message. For example, Ahn et al. (2014) found that after consuming a virtual reality story – an immersive new technology in which users see a video story through a lens and can move 360-degrees in the space shown – where they cut down a tree, participants self-reported better environmental behavior and higher feelings of environmental empowerment than a group that read a print description of cutting down a tree. Sisco (2007) found that in the early 1990s consumption of political news on television was associated with a higher likelihood to vote compared to those who followed political news in newspapers. Saat and Selamat (2014) found that fast-food corporations with websites including richer media (i.e. video and animation features) led to higher levels of trust in terms of belief among consumers. And Lu et al. (2014) found in an experiment about student well-being that higher media richness on fitness center websites was a positive determining factor of whether or not university students said they

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later intended to go the gym. Higher interactivity, they found, also had a positive effect on whether or not students would recommend going to the gym to others.

Digital Storytelling in Business and Financial News

Readers of financial news are often very wealthy. For example, readers of *Financial Times*, a prominent British newspaper, have an average net worth of GBP 1.3 million (\$1.63 million); 38% had "invested in fine wine or champagne in the last five years"; 25% make monthly purchases of luxury fashion items; and 76% travel internationally for business (Financial Times, 2018, p. 1). These readers also often hold valuable assets (i.e. securities, real-estate, etc.) which they need to decide, sometimes quickly, to hold or sell, or whether to add to their portfolios. Because of this, long-form stories are not always the focus of financial news organizations. Instead they tend to put an emphasis hard, breaking news – things like company earnings, strategy shifts, analyst grades, market trends, economic indicators, etc. – as the main content their readers have come to expect from them.

However, as the popularity of interactive digital stories has grown, they have begun to appear across the spectrum of news outlets, including those that focus on the business and financial world. Examples of these include stories like "What Amazon Saw in New York and Northern Virginia for HQ2" from the *Wall Street Journal* and "Work Out Your Personal Gender Pay Gap" from *Financial Times*, both of which include interactive, game-like features (Stamm, 2018; Leach et al, 2017). Given the learning benefits of interactivity and gamification, young people, with their low financial literacy rates, might stand to gain from reading more interactive financial news content (De Bassa Scheresberg, 2013). And as financial news tends to target an older, wealthier audience, higher youth engagement with these interactive stories presents an opportunity for news organizations as well. That said, this thesis looks at how interactive content from financial news outlets might boost financial literacy rates; the driving factors of youth engagement with financial news more generally; and what increased youth readership in financial news might mean for society going forward.

Chapter 2: Research Questions and Hypotheses

This thesis addresses the following research questions and hypotheses:

Research Questions

RQ1: What capacity do interactive digital stories from financial news outlets have to increase financial literacy?

RQ2: How is age related to one's enjoyment of interactive digital stories from financial news outlets?

RQ3: How is age related to enjoyment and consumption frequency of financial news generally?

RQ4: Which elements of interactive digital stories do readers prefer to interact with most?

RQ5: How is pecuniary savvy related to enjoyment of financial news?

RQ6: How is household income related to enjoyment and consumption frequency of financial news?

RQ7: Why or why not do participants consume financial news?

RQ8: What might increased levels of youth readership in financial news mean for society?

Hypotheses

H1: Interactive digital stories will have higher levels of engagement than noninteractive stories.

H2: Participants will be less likely to enjoy and will consume less frequently financial news content vs. general news content.

Chapter 3: Method

To address the research questions and hypotheses above, the researcher recruited students (N=125) from Ohio University's College of Communication and College of Business to take part in an experiment. Extra credit points – with a research alternative – not exceeding the worth of two percent of a student's final grade in a course, were offered by willing professors. The experiment took place in a lab room containing four computers separated by dividers in the E.W. Scripps School of Journalism between January 27, 2020 and February 10, 2020. To eliminate researcher bias on which computer participants completed the experiment on, participants chose a numbered piece of paper corresponding with a computer station upon arrival. Participants were then given brief directions on how to complete the experiment. In a survey produced through Qualtrics, participants first answered demographic questions.

Demographics

This experiment had 125 participants.

Age

Age was measured by asking participants how old they were on January 1^{st} , 2020. The average age of respondents was 20.8, with a range from 18 to 38. The mode age was 20 (n=33), followed by 21 (n=30), 19 (n=27), 18 (n=10), 22 (n=7), 23 (n=3), 24 (n=3), 26 (n=1), 27 (n=1), 28 (n=1), 30 (n=1), 33 (n=1), 37 (n=1), and 38 (n=1).

Gender

Seventy-two percent of participants identified as female (n=90), and 28% identified as male (n=35).

Race, Ethicity, and/or Origin

Eighty-five percent of respondents were 85% white (n=99), five percent were black or African American (n=6), four percent were Asian or Pacific Islander (n=5), just under two percent were Hispanic or Latino, zero percent were Native American, while about 3 percent selected the option for "Other" (n=4), writing "Latina and African American," Mexican/Lebanese," "South Asian," and "Black and Indian."

Area

Nearly 69% of participants said they grew up in a suburban setting (n=86), about 18% grew up in a rural setting (n=22), almost nine percent grew up in an urban setting (n=11), and about five percent said they grew up in multiple settings (n=6).

Education

At the time of the experiment, 92% of participants were undergraduate students (n=107), five percent were in a master's program (n=6), and a little under 3 percent were PhD students (n=3).

Household Income

The mode household income was \$100,000-\$149,999, making up about 25% of respondents (n=32). About 22% (n=28) reported a family income of \$50,000-\$99,999, followed by 14% (n=17) at \$25,000-\$49,999, 12% (n=15) at \$150,000-\$199,999, four percent (n=5) at \$200,000-\$249,999, four percent (n=5) at \$250,000 or more, and about two percent at \$0-\$24,999. Thirteen percent (n=16) responded "Unsure," and three percent (n=4) said they do not wish to answer.

Ability/Disability

Nearly 94% (n=117) of respondents said they do not have a disability, while six percent (n=8) said they do. Of those who reported having a disability, five participants said they have a specific learning disability, one reported having emotional disturbance, one reported having autism, and one reported having a visual impairment.

Experimental Design

After answering demographic questions, participants then answered questions about their general news and financial news consumption. The survey then randomly prompted participants to read one of four online stories (see Table 1) from the *Wall Street Journal*, which were open in separate tabs on the Google Chrome browser. The *Wall Street Journal* is one of the premier financial news outlets in the United States and around the world, and is one of the most prolific producers of interactive digital stories in financial news. Founded in 1889 and based in New York City, the *Wall Street Journal* is among the most circulated newspapers in the U.S, with an online and print combined daily subscriber base of 2.27 million (News Corporation, 2017). According to statistics collected in 2017, their website has 42.4 million unique visitors per month; 62% of their website's readers are men; readers have an average household income of \$242,000; 81% of their readers graduated college or more; 35% are in top management; and 41% are millionaires (Dow Jones, 2017).

Table 1

| Experiment Groups | | | |
|--------------------------------|--|--|--|
| Experiment Group | Story | | |
| Group 1 (n=31) | The Nest Egg Game | | |
| Group 2 (n=31) | The Future of Arctic Shipping | | |
| Group 3 (n=32) | What Is Your Secret Shopper Score | | |
| Group 4 (Control Group) (n=31) | For Young Savers Facing Subpar Returns, Think Long Term | | |

Note: Stories for Groups 1-3 are interactive; story for Group 4 is non-interactive

Three of the stories in this experiment are what are defined in this thesis as interactive digital stories: pieces with at least three media formats, but which also contain at least one interactive and technologically-advanced element in them, such as clickable graphics or Scrollytelling. The researcher chose these stories from the *Wall Street Journal*'s 2018 and 2019 Year in Graphics pages for their variety of topics and the different media elements used in each. The fourth story was standard and contained only text and photo, as well as an unrelated video in the middle of the story, similar to those included in many standard stories on wsj.com. The researcher chose this story because of its relevance to college students and young people starting to save for retirement. Participants who read this story are looked at as the control group in this thesis. The four stories are described in more detail below.

Stimuli

The three interactive stories that are studied here are: "The Nest Egg Game"; "The Future of Arctic Shipping"; and "What is Your Secret Shopper Score?" Each is selected for their different interactive features and because they cover a range of topics relating to money in some way.

"The Nest Egg Game," published Sept. 16, 2019, is an interactive digital story about saving for retirement (Wang et al, 2019). It is styled like a game in that users select answers to questions on various life choices as they scroll down a timeline. Each answer then impacts the final outcome of the game – whether or not they saved enough. The standard media elements it includes are text and still photos, while the interactive graphics it contains are Scrollytelling, animation, and clickable answers to questions.

"The Future of Arctic Shipping," published October 24, 2018, is an interactive digital story about the melting ice cap around the North Pole, and how this will affect shipping routes used for international trade (Serkez et al., 2018). The story unfolds as the readers scroll, automatically zooming in and out on an animated map of the Arctic while text boxes provide explanation. The standard media element it includes is just text, while the interactive elements include Scrollytelling, and animation.

"What Is Your Secret Shopper Score?" published Nov. 2, 2018, is an interactive digital story that details how retailers collect customer data to predict how much money they will spend at their business over the duration of their lives (Safdar & Serkez, 2018). It guides readers through a horizontally slideshow (readers click on an arrow to advance to the next page) with almost every page soliciting answers on the reader's preferences and life status, which then contribute to deciding their 'shopper score.' The standard media element used is text, and the interactive elements used are animation and clickable answers to questions.

Control

Participants in the control group read "For Young Savers Facing Subpar Returns, Think Long Term," published Sept. 30, 2019 (Tergesen, 2019). It is an article with only text, a photo-shopped "cover" image at the top, a non-interactive graph, and a "related" video inserted into the middle of the body of the piece. It offers investing advice for young people.

Screen captures of all four stories are included at the end of this thesis (see Appendix C). After reading the designated story, participants then returned to the survey and answered questions about their reading experience.

Measures

To explore RQ1 – "What capacity do interactive digital stories from financial news outlets have to increase financial literacy?" – *t*-tests comparing those who read interactive stories (n=94) and those who read the standard story (n=31) are first conducted for three different variables: Conduciveness for Learning; Future Appeal; and Format Enjoyment. Conduciveness for Learning, an interval-level variable, is measured by combined scale of responses to two questions (see Appendix A) soliciting agreement levels, asked after participants read their assigned story: "I learned something new about business, finance and/or economics by reading this story"; and "This story made financial and/or economic concepts easier to understand." Both questions were answered via 7-point Likert scales, with 1 being "Strongly disagree," 2 being "Disagree," 3 being "Somewhat disagree," 6 being "Agree," and 7 being "Strongly agree." Combined, they

create a scale from 2 to 14, with 8 being the mid-point. The Cronbach's Alpha value between the two questions is 0.62.

Future Appeal (interval) is measured in similar fashion, by combining two questions with 7-point Likert scales measuring agreement level: "After reading this story, I am interested in reading more business/financial news"; and "After reading this story, I would like to engage with more content like this in the future." The two questions create a 2-14 scale and have a Cronbach's Alpha of 0.76.

Format Enjoyment (interval) entails a single question on a 1-7 Likert scale measuring agreement level: "I enjoyed this content's format."

Finally, RQ1 is addressed by examining descriptive statistics for the following question, which was asked to those who read interactive stories: "In comparison to traditional written articles (both print and online), I like this type of interactive content better." It is answered on the 1-7 Likert scale measuring agreement level, making it an interval variable.

RQ2 and RQ3 – "How is age related to one's enjoyment of interactive digital stories from financial news outlets?" and "How is age related to enjoyment and consumption frequency of financial news generally?" – are examined using a linear regression analysis. For Age, a continuous-level variable and here the dependent variable, participants were asked to mark their age (i.e. "24," or "19," or "21") on January 1, 2020. The three independent variables are Format Enjoyment, Financial News Consumption Enjoyment, and Financial News Consumption Frequency (the latter two questions were asked before students read their assigned story). Format Enjoyment is the same variable

used in RQ1 and is measured on a 7-point Likert scale measuring agreement level. Financial News Consumption Enjoyment is measured on the same agreement scale for the question: "I enjoy consuming financial or business news content." Financial News Consumption Frequency is measured by the question: "During the typical week, how many days would you say you read, watch, or listen to news content? (i.e. Content from the *Wall Street Journal, Financial Times, Bloomberg, CNBC, Business Insider*, etc.)." Answer options included: "0 days a week"; "1-2 days a week"; "3-4 days a week"; "5-6 days a week"; "Every day (7 days a week)"; and "Unsure." Excluding responses for "Unsure," this question has a scale from 1 to 5.

RQ4 – "Which elements of interactive digital stories do readers prefer to interact with most?" – is addressed using descriptives for the nominal-level question: "Which element in the story did you enjoy the most?" Each group's answer options were adjusted according to the media elements used in the story they read. Those who read "The Nest Egg Game" (n=31) were given options of: "Text"; "Photos"; "How the story unfolded while scrolling"; "Animation"; and "The Clickable Answers." Those who read "The Future of Arctic Shipping" (n=31) were given options of: "Text"; "How the story unfolded while scrolling"; and "Animation." Lastly, those who read "What Is Your Secret Shopper Score" (n=32) were given options of: "Text"; "Animation"; and "Clickable Answers."

RQ5 – "How is pecuniary savvy related to enjoyment of financial news?" – is explored first through conducting a *t*-test comparing those with higher self-reported familiarity with business, economic, and financial concepts and those with lower. Three

questions – each measuring familiarity with either business, economic, or financial concepts – are combined into a new scale measuring overall Pecuniary Savvy. The three questions had a Cronbach's Alpha value of 0.85. Answer options for each question were: "Very unfamiliar"; "Unfamiliar"; "About average"; "Familiar"; and "Very Familiar." Those answering "Familiar" and "Very Familiar" make up one group (n=48), and those answering "About average" or below make up the other (n=76). Means for each group for the Financial News Consumption Enjoyment variable are then analyzed. Both variables are interval-level. In addition to the *t*-test, a Pearson's correlation is also conducted between the two variables mentioned above: Pecuniary Savvy and Financial News Consumption Enjoyment.

For RQ6 – "How is household income related to enjoyment and consumption frequency of financial news?" – a Pearson's correlation is conducted between household income, Financial News Consumption Enjoyment, and Financial News Consumption Frequency. Family income is measured by answer options including \$0-\$24,999, \$25,000-\$49,999 followed by groups divided into \$50,000 increments until \$250,000 and over.

For RQ7 – "Why or why not do participants consume financial news?" – two analyses will be conducted. First, text entries from the open-ended question, "Why or why not do you read financial news?" will be analyzed. And second, 10 in-depth interviews that willing participants did with the researcher after participating in the study will be analyzed (see Appendix B). Those who gave interviews filled out demographic questions and then responded verbally to four questions from the researcher: 1) "Do you typically read financial news – why or why not?"; 2) "Does the type of story you read in the experiment make you want to read more financial news in the future – why or why not?"; 3) "What was your exposure to financial concepts growing up?"; and 4) "Anything else you would like to talk about?" Interviewees were selected by collecting contact information from respondents from the first 9 days of the experiment (due to time constraints). Each contact was assigned a number and then ten were chosen via Google's random number generator. If the participant did not respond, another number was generated until all 10 were filled.

RQ8 – "What might increased levels of youth readership in financial news mean for society?" – is addressed using findings in the above research questions and hypotheses and its implications are discussed in the Discussion and Conclusion section below.

For H1 – "Interactive digital stories will have higher levels of engagement than non-interactive stories" – descriptives were analyzed for questions of the User Engagement Scale, which measures how readers engaged with their respective story. This scale uses 31 questions to measure six types of engagement – Aesthetics, Endurability, Focused Attention, Felt Involvement, Novelty, and Perceived Usability – and has been found to be reliable and valid in research on online news consumption (O'Brien & Cairns, 2015). All questions are answered using the same 1-7 agreement scale.

First, aesthetics is measured using five prompts, creating an interval-level variable with a scale from 5 to 35: "This news story was attractive"; "This news story was aesthetically appealing"; "I liked the graphics and images used in this story"; "This news story appealed to my visual senses"; and "The screen layout of this news story was visually pleasing." The questions have a Cronbach's Alpha value of 0.87.

Endurability is measured also by five prompts, creating an interval-level variable with a combined 5 to 35 scale: "Reading this news story was worthwhile"; "I consider my experience a success"; "Doing this task did not work out the way I planned" (this prompt, Q34, was recoded from 1-7 to 7-1 because the way it is phrased opposes the direction of all other prompts in the group); "My experience was rewarding"; and "I would recommend this news story to my family and friends." The questions have a Cronbach's Alpha value of 0.79.

Focused Attention is measured by seven prompts, creating an interval-level variable with a combined scale of 7-49: "I lost my self in this task"; "I was so involved in the task that I lost track of time"; and "I blocked out things around me when I was reading this news story"; "When I was doing this task, I lost track of the world around me"; "The time I spend reading this news story just slipped away"; "I was absorbed in the task"; and "During this experience I let myself go." The questions have a Cronbach's Alpha value of 0.88.

Felt Involvement is measured by three prompts, creating an interval-level variable with a combined scale of 3 to 21: "I was really drawn into this news story"; "I felt involved in this task"; and "This experience was fun." The questions have a Cronbach's Alpha value of 0.89.

Novelty is also measured by three prompts, creating an interval-level variable with a combined scale of 3 to 21: "I took my time with the news story out of interest";

"Then content of the news story incited my curiosity"; and "I felt interested in the news story." The questions have a Cronbach's Alpha value of 0.92.

Lastly, Perceived Usability is measured by eight prompts, creating an intervallevel variable with a combined scale of 8 to 56: "For the below statements, mark your level of agreement. I felt frustrated while reading this news story"; I found this news story confusing to read"; "I felt annoyed while reading this news story"; "I felt discouraged while reading this news story"; "Reading this type of news story was mentally taxing"; "This experience was demanding"; "I did not feel in control of the experience"; and "I could not do some of the things I needed to do to read this news story." The questions have a Cronbach's Alpha value of 0.93.

The above six variables are all combined into an overarching User Engagement Scale, with a range from 31 to 217, with a neutral midpoint of 124. Since all of the prompts related to Perceived Usability are framed negatively, unlike all other prompts in the User Engagement Scale (except for one question measuring endurability), they are recoded from 1-7 to 7-1 so they are compatible to be combined with the five other types of engagement to form an overall engagement scale. After this, the six types of engagement have a Cronbach's Alpha value of 0.81.

Finally, for H2 – "Participants will be less likely to enjoy and will consume less frequently financial news content vs. general news content" – descriptives for four questions will be analyzed: two comparing enjoyment of general news and financial news, and two comparing consumption frequency of general news and financial news. The two questions focusing on enjoyment are measured on the previously-mentioned 1-7

agreement scale from "Strongly disagree" to "Strongly agree." The consumption frequency questions are measured on a scale from 0 to 4, with 0 being "0 days per week"; 1 being "1-2 days per week"; 2 being "3-4 days per week"; 3 being "5-6 days per week"; and 4 being "Every day (7 days a week)."

Chapter 4: Results

Overall, results tended to favor the interactive digital stories. For RQ1 – "What capacity do interactive digital stories from financial news outlets have to increase financial literacy?" – interactive stories showed higher Conduciveness for Learning, higher Future Appeal, and higher Format Enjoyment (see Table 2).

Table 2

| | Conduciveness for Learning (2-14 scale) | | Future Appeal (2-14 scale) | | Format Enjoyment (1-7 scale) | |
|-----------------------|--|---|--|--|--|--|
| | Avg. for Interactive Stories (n=94) | Avg. for Non-Int- eractive Stories (n=31) | Avg. for Interactive Stories (n=94) | Avg. for Non- Interactive Stories (n=31) | Avg. for Interactive Stories (n=94) | Avg. for Non- Interactive Stories (n=31) |
| Level of Agreement | 11.27 | 9.77 | 10.49 | 9.26 | 6.23 | 4.84 |
| (Std. Dev.) | (2.11) | (2.31) | (2.11) | (2.67) | (0.81) | (1.32) |

t-tests (*Test variable* = *Interactivity*)⁺

+ Separates those who read interactive stories and those who read standard stories

For the question measuring how much participants who read interactive stories agreed that they preferred interactive content like the story they read over more standard written content, the mean response fell between "Agree" and "Strongly Agree," or 6.31 on a 1-7 scale. Together, these findings suggest a strong potential capacity for interactive digital stories in improving financial literacy levels.

For RQ2 and RQ3 – "How is age related to one's enjoyment of interactive digital stories from financial news outlets?" and "How is age related to enjoyment and consumption frequency of financial news generally?" – a regression analysis is conducted, with Age (mean=20.8; range=18-38) being the dependent variable (see Table 3). Compared to tests like a Pearson's correlation, which measures only the direction and strength of two variables' linear relationship, a regression analysis explains how much the selected independent variables impact the dependent variable, and it predicts changes in value in one variable as it relates to values in another variable (Kiernan, 2014). Results of the regression showed that Financial News Consumption Frequency had the most substantial relationship with Age of the three coefficients: its unstandardized beta was 1.13, meaning a 1-unit change on the 1-5 Financial News Consumption Frequency scale (0 days a week; 1-2 days a week; 3-4 days a week; 5-6 days a week; and 7 days a week) corresponded in about a 1 year change in Age. Financial News Consumption Enjoyment was the next most considerable relationship with Age with an unstandardized beta of 0.22. This means about a 5-unit change in the 1-7 agreement level scaled resulted in a 1year change in Age. Format Enjoyment was the least relevant coefficient with an unstandardized beta of -0.15, meaning almost a 7-unit change on its 1-7 agreement level scale corresponded with a 1-year opposite-direction change in Age. These figures show that Age is more strongly related to how often participants read financial or business news – the older someone is the more likely they are to read financial news more often – but not so much related to enjoyment of financial news or the format in which it is presented. Together, Financial News Consumption Enjoyment, Financial News

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Consumption Frequency, and Format Enjoyment had an R^2 value of 0.17. This means only 17% of the variance in Age can be attributed to the three aforementioned independent variables collectively.

Table 3

| | Unstandardized Coefficient | Beta | t |
|------------------------------------|-------------------------------|------|------|
| Intercept | 20.13 | | 12.6 |
| | (1.6) | | |
| FN Consumption Enjoyment | .22 | .11 | .87 |
| | (.26) | | |
| FN Consumption Frequency | 1.13 | .33 | 2.75 |
| | (.41) | | |
| Format Enjoyment of Assigned Story | 15 | 05 | 59 |
| | (.25) | | |
| Model Fit | | | |
| R | .41 | | |
| \mathbb{R}^2 | .17 | | |
| F | d.f. 3, 114 | 7.67 | |

Regression (*DV*=*Age*)

Standard errors in parentheses.

For RQ4 – "Which elements of interactive digital stories do readers prefer to interact with most?" – respondents showed a particular affinity for Scrollytelling, animation, and clickable answers (see Table 4). In "The Nest Egg Game," 58% of its readers say they enjoyed the Scrollytelling aspect of the story the most, with clickable answers being the next most popular element (32.3%). For "The Future of Arctic Shipping," animation and Scrollytelling were the most popular elements, with 48.4% and 32.3% of its readers, respectively, saying these were their favorite parts of the story. And

in "What Is Your Secret Shopper Score," 75% of its readers said the clickable answers were the element they enjoyed the most in the story.

Table 4

| The Nest Egg Game (n=31) | | | |
|--------------------------|-----------|---------------|--|
| Media Element | Frequency | Valid Percent | |
| Text | 0 | 0 | |
| Photos | 1 | 3.2 | |
| How the story unfolded | 18 | 58 1 | |
| while scrolling | 10 | 56.1 | |
| Animation | 2 | 6.5 | |
| The Clickable Answers | 10 | 32.3 | |

"Which element did you enjoy most in the story?"

| The Future of Arctic Shipping (n=31) | | | |
|--------------------------------------|-----------|---------------|--|
| Media Element | Frequency | Valid Percent | |
| Text | 6 | 19.4 | |
| How the story unfolded | 10 | 20.2 | |
| while scrolling | 10 | 52.5 | |
| Animation | 15 | 48.4 | |

| What Is Your Secret Shopper Score (n=32) | | | |
|--|-----------|---------------|--|
| Media Element | Frequency | Valid Percent | |
| Text | 1 | 9.4 | |
| Animation | 5 | 15.6 | |
| The Clickable Answers | 24 | 75 | |
For RQ5 – "How is Pecuniary Savvy related to enjoyment of financial news?" – results showed that higher levels of Pecuniary Savvy were related to higher Financial News Consumption Enjoyment levels. In the *t*-test (see Table 5), those with higher levels of Pecuniary Savvy had a mean of 4.46 on the 1-7 scale measuring Financial News Consumption Enjoyment vs. those with lower levels of Pecuniary Savvy, who had a mean of 3.18. The Pearson's correlation also backed up these results, with Financial News Consumption Enjoyment and Pecuniary Savvy (n=124) having a moderate 0.56 positive correlation, significant at the 0.01 level.

Table 5

| Financial News Consumption Enjoyment (1-7 scale) | | | |
|--|--|--|--|
| | Avg. FN Enjoyment for Those with Lower Pecuniary Savvy (n=76) | Avg. FN Enjoyment for Those with Higher Pecuniary Savvy (n=48) | |
| Level of Agreement | 3.18 | 4.46 | |
| (Std. Dev.) | (1.12) | (1.6) | |

t-test (Test variable = Pecuniary Savvy)

For RQ6 – "How is household income related to enjoyment and consumption frequency of financial news?" – results of a Pearson's correlation showed weak positive correlations. Household Income and Financial News Consumption Enjoyment (n=105) had a 0.11 correlation, and Household Income and Financial News Consumption Frequency (n=104) had a 0.10 correlation. However, Financial News Consumption Enjoyment and Financial News Consumption Frequency (n=123) themselves had a strong positive correlation of 0.70, significant at the 0.01 level.

For RQ7 – Why or why not do participants consume financial news? – openended responses showed in large part that for participants financial news either lacks relevance to them, has a level of exclusivity in terms of the topics written about and how content is written, is just uninteresting, or a combination of those things. Concerning how relevant financial news is to them, some participants mentioned their lack of assets. One wrote, "I think most financial news panders to people that have money, which I don't, so it doesn't help me much." Another wrote they do not read financial news because they "have no active investments and likely won't anytime soon." One mentioned, "My parents still support me financially, so I feel like I don't need to pay attention to news about business and money," and another wrote that "the content can be boring when I don't have a full-time salary." Relatedly, some participants said specifically drew the line between not having large sums of money and being young, saying, "I do not read financial news because they do not target young people," and, "It is not very engaging for the younger generation."

Many participants also mentioned the exclusivity of financial news, and not being able to understand it. For example, one wrote they do not read financial news "Because a lot of the jargon is difficult to understand. If I wanted to look at definitions for everything I didn't know in a financial article, it would take forever." Another signaled their interest in reading other news content, as well as an interest in starting to read more financial news, but mentioned signaled their past experiences with financial news overwhelmed them: "I usually like to read feature stories that interest me or breaking news stories that are important to me. I should start reading financial news because that can be breaking news and should be important to me as well, but I guess I just don't know where to start. All of the financial blogs that I've tried to read don't make sense to me." Another mentioned their frustration in how financial news is written or talked about: "I don't really understand all the terminology financial news outlets use, and I also get bogged down in all the numbers."

Some participants also cited a lack of exposure to financial concepts or financial news itself as a reason they don't consume financial news content, writing: "I do not read as much financial news as I should because I haven't been really exposed to it at home or in school"; "It has never occurred to me to watch it and not many people if any around me watch it"; and simply, "It's not something I see as often."

Lastly, some participants said they just find financial news uninteresting. One said, "It is not usually the most riveting news content so I don't read it unless something specific gets brought to my attention." Others mentioned their lack of interest in financial news is often paired with a lack of understanding of the content. "I usually don't read it because I find it boring and I don't understand enough of terms or context necessary to understand what I'm reading," one said. Another wrote, "Financial news does not interest me. I also do not have a good understanding of financial aspects of business."

Despite that many participants saying they do not consume financial news, some gave reasons for why they do read, watch, or listen to it. Most cited either a pure interest in the topic, or an academic, professional, or monetary motivation for consuming it. Regardless of motivation, exposure to financial concepts either through work or school seems to be related to consumption. For example, one wrote, "I have worked in commercial banking, I am interested in economics and policy, and I enjoy reading business and financial news." Another said, "I read financial news because I enjoy to keep up with the economy and markets. I'm also involved in one of the investment groups on campus and need to stay up to date with news to have opinions on where to position our portfolio."

Monetarily, participants' personal finances seem to be a motivating factor for financial news consumption. "I want to retire in about 15 years and want to increase my knowledge for my future," one participant said. Others wrote things like: "To get a better handle on personal financial decisions, as well as gaining a larger scope on what is currently going on in the finical sphere"; "Have money in stocks"; and, "For stock trading information."

A few also mentioned professional reasons for consuming financial news. One participant said they consume it "To stay up to date and in the know so in a business conversation or a networking opportunity I have something to talk about." Another said they consume financial news "To gain an understanding of economic shifts, to better predict my possible outcomes by graduation (and which companies will be economically stable)."

Among those who said they do consume financial news, preferred outlets include the *Wall Street Journal*, *CNBC*, *Bloomberg*, *Business Insider*, *Forbes*, the *New York*

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Times, CNN Business, Harvard Business Review, Yahoo Finance, the Economist, and others, according to open-ended responses.

In post-experiment one-on-one interviews, similar trends to those in the openended responses above were present – that financial news can lack personal relevance and can be uninteresting, that young readers are often not exposed to financial news, and that financial news can have a level of exclusivity. "I don't read financial news at all because I don't do stocks or any of that stuff because I don't understand it. Also I'm a college student with like \$50 dollars so I wouldn't be able to participate in it anyway. But I wish I understood it more," said a 19-year-old female student studying journalism. A 34-year-old journalism master's student said, "I don't typically read financial news unless I am particularly interested in something that might affect me directly...I'm not terribly interested in whether or not Wall Street is doing fine because that doesn't mean anything on a daily level for me. If I worked for a major factory or for a corporation, I might have a different perspective." A 21-year-old female journalism student said, "I don't usually come across a lot of financial news stuff. Also I'm not looking for it – I never seek out any of that. I feel like I'm more pop culture and entertainment stuff that I like. So I never really come across it but I also don't look for that kind of stuff... I guess maybe twitter filters what I'm normally interacting with."

Many students indicated that they consume their news via social media platforms, so the notion of not seeing financial news on social media platforms – due to an algorithm or not – may be a contributing factor as to why young people typically read financial news less than general news. Along these same lines, a 21-year-old journalism student, when asked whether or not they typically read financial news, said, "Not typically. Sometimes if it pops up on my timeline on Twitter or Instagram or something like that, even if I'm scrolling around on certain media outlets I'll see something, but typically I'm not like actively going to find financial news media outlets to read them."

Other interviewees detailed how they feel financial news is too difficult to understand. Three different 21-year-old female journalism students said, "It really just comes down to I'm not good with numbers. I'm not good with math, I'm not good with numbers, so finance and anything along those lines has never really piqued my interest because I just genuinely just avoid numbers"; "I guess part of is I'm not educated immensely on the topic and It's not something I'm super interested in"; and, "I think it's a little bit of a bottleneck thing. I've never really been good at math, so I feel like to understand financial news I have to have a pretty basic/good understanding of math. In addition to that, mathematical and economic programs and systems and patterns and things like that, you have to have a pretty good understanding of those things as well to read financial news and have an understanding of it."

Two students in the College of Business were also interviewed and showed that exposure to financial concepts does not necessarily indicate regular consumption of financial news. One, a 21-year-old male finance major, said, "I typically read financial news every morning and every night, and I read it because first off I'm really interested in it and it's something I'm passionate about, and secondly, just based off my internships I kind of need to stay up with the market and it's just something I enjoy doing. And I also just think it should be a common thing for everyone to kind of know what's going on

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with the economy just to have some type of financial literacy." However, a 20-year-old female accounting student said she does not consume financial news often. "No I really don't read financial news because I usually think it just consists of stock markets and it talks about businesses and...how's there's been a lot of scandals happening...It's a little confusing, some parts are interesting," she said.

H1 – "Interactive digital stories will have higher levels of engagement than noninteractive stories" – was proven correct. On the combined User Engagement Scale, with a range from 31 to 217 with a 124 midpoint, all of the interactive stories registered with higher means than the non-interactive story. "The Nest Egg Game" had the highest mean of 175.84; "The Future of Arctic Shipping" had a mean of 157.71; "What Is your Secret Shopper Score" had a mean of 168.63; and "For Young Savers Facing Sub-Par Returns, Think Long Term" (the non-interactive story) had a mean of 139.03. Combined, the three interactive stories had a mean of 167.40. It is worth noting, however, that the "For Young Savers…" story still had a mean above the neutral midpoint of 124. Its means for each type of engagement on the User Engagement Scale were also each better than the neutral midpoint of each scale. Nevertheless, it registered the least favorable mean of the four stories in five out of the six types of engagement (see Table 6). So while it did not necessarily score poorly, participants generally seemed to like it less than the three interactive stories.

Table 6

User Engagement Scale: Which Stories Scored Most – and Least – Favorably?

| Engagement Type | Most Favorable Mean | Least Favorable Mean |
|--|--|--|
| Aesthetics (5-35 scale) | The Nest Egg Game (31.71) | For Young Savers (21.23) |
| Endurability (5-35 scale) | The Nest Egg Game (29.19) | For Young Savers (25.38) |
| Focused Attention (7-49 scale) | The Nest Egg Game (28.90) | The Future of Arctic Shipping (25.29) |
| Felt Involvement (3-21 scale) | The Nest Egg Game (18.42) | For Young Savers (13.29) |
| Novelty (3-21 scale) | The Nest Egg Game (18.42) | For Young Savers (14.71) |
| Perceived Usability (8-56 scale; lower = better) | What Is Your Secret Shopper Score (13.56) | For Young Savers (24.65) |

Notably, Focused Attention yielded the lowest means of the six types of engagement. Three of the four stories were below the neutral midpoint of 28 on the 7-49 scale, and "The Nest Egg Game" barely edged above this point with a 28.90 mean. Aesthetics seemed to yield the highest means among interactive stories, with all three means above 30 on the 5-35 scale with a neutral midpoint of 20. "For Young Savers..." meanwhile had an Aesthetics mean of 21.23 – predictably so, as the story is not graphicheavy.

For H2, results supported the prediction that participants will be less likely to enjoy and will consume less frequently financial news content vs. general news content. For general news content (n=125), participants had a mean response of 5.22 on the 1-7 agreement scale measuring whether or not they enjoy consuming general news content. This mean falls between "Somewhat agree" and "Agree" on the scale. For financial news content (n=125), participants had a mean response of 3.68 on the same scale, falling between "Somewhat disagree" and "Neutral." Participants also reported that they consume financial news much less frequently than general news. Sixty-seven participants – more than half of those who answered the question (n=123) – said they consume financial news 0 days a week. Another 40 respondents said they consume financial news 1-2 days a week. So about 87% of participants said they consume financial news no more than 2 days a week. Just under 13% say they consume financial news content 3 days a week or more. In contrast, almost a quarter of respondents (n=125) said they consume general news 7 days a week; 44% of respondents said they consume general news 5 days a week or more; and 71% said they consume general news content at least 3 days a week.

Chapter 5: Discussion and Conclusion

The findings above illustrate how disengaged young people currently are with financial news, be it that they find the content unenjoyable, irrelevant, difficult to understand, or that it just does not seem to reach them on the platforms where they consume their news. However, when financial news content meets the standard of being enjoyable, relevant, and/or presented accessibly, the findings also show a clear capacity for financial news content to connect with young readers. Though participants for each story reported relatively positive answers, those who read interactive stories in particular reported the most favorable results. In other words, the interactive digital stories studied in this experiment showed the most potential to increase financial literacy and provide the most opportunity for financial news outlets to expand their audience to younger readers. This falls in line with Media Richness Theory, which says communication mediums that engage multiple senses lead to more satisfying and effective communication (Daft & Lengel, 1986).

More specifically, participants who read interactive stories were more likely to say they learned something about business, finance, or economics from the story; were more likely to say they want to read more financial news in the future; and were more likely to say they enjoyed the format of the content. Those who read interactive stories also reported rather emphatically that they prefer interactive content to standard textheavy content. Interactive stories also largely registered higher scores than the noninteractive story on the User Engagement Scale. Namely, participants found interactive stories more aesthetically pleasing, more rewarding, more absorbing, more involving, more interesting, less frustrating and less demanding.

In post-experiment interviews, participants echoed these sentiments. Asked if the story they read made them want consume more financial news in the future, a 21-year-old female journalism student who read "The Nest Egg Game" said: "If I was reading more like that then yeah, absolutely, because kind of what I got from it is I feel like I could learn something and it made it easy to understand what I don't usually understand. So if they put out more content that was interactive like that and easy for people like myself who don't really do anything with finance, then yeah I actually totally would." Another 21-year-old female journalism student who read "What Is Your Secret Shopper Score" said: "Me personally, I wouldn't just read any finance article that I would ever see, that would not interest me. But it was kind of like a game or like a quiz or something, so I thought that was really cool. I thought that would get people maybe like me to interact with it more who really aren't interested in finance, but when you put it this way, I was kind of interested in it." And a 21-year-old male finance student who read "What Is Your Secret Shopper Score" said: "I liked it. I honestly never read a story like that before, so I kind of like the idea of having an interactive article where you kind of have to go through and see the different paths and have more of a personalized outcome aspect towards me, where I'm not just reading something super general where maybe not everything in the article is applicable to me."

Still, as alluded to by the finance student above, relevance proved to be an important factor no matter if the story was interactive or not. For example, a 34-year-old

journalism master's student who read "What Is Your Secret Shopper Score" said: "It would be more interesting for me to see that in an area that I actually shop in, like technology or how somebody tracks me with music. So that would be more interesting because those are the things I would buy...Does it make me want to read more? Not really. But if I saw it, would I read it? Probably. Like it's not something I would seek out but I thought it was interesting and I enjoyed the sort of the interactive nature of that story." And a 21-year-old female journalism student who read the non-interactive "For Young Savers..." said: "I thought the content itself was kind of interesting because it applied to me being a college student...It was relatively easy to understand, there was some jargon that I didn't quite understand at first that I had to go back and reread...[I would read more financial news about] that particular topic maybe, with college students, or things that are actually applicable to me – maybe not like general financial stories."

One interesting finding above is that higher understanding of business, financial, or economic concepts – referred to here collectively as Pecuniary Savvy – is positively correlated with higher enjoyment of consuming financial news content. This is backed up by the many open-ended responses of participants saying not being able to understand the content is a barrier to consuming financial news. Based on the above results, the type of interactive stories studied in this thesis may very well be a solution this, as the results showed they made financial, business, or economic concepts easier to understand than did the non-interactive story. Another interesting finding not reported in the results is that participants talking with their parents about planning financially for the future was positively correlated, if only weakly, with Financial News Consumption Frequency (0.21,

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significant at the 0.05 level) and Financial News Consumption Enjoyment (0.28, significant at the 0.01 level). Family income, meanwhile, was less related to frequency and enjoyment of financial news consumption.

Curiously, a perception bias seems to exist to a degree when it comes to how young people think about financial news (see Figure 1). Again, while the interactive stories scored more favorably among respondents, the non-interactive story also did not score poorly. So, no matter which story – each with different media elements and different topics – participants read, few seemed to have a bad experience. This despite respondents reporting very low enjoyment levels regarding financial news consumption, as well as very low consumption frequency. So, exposure to financial news content may lead to further financial news consumption. Figure 1 illustrates this cause and effect relationship.

Figure 1



Q72 (Before) – I enjoy consuming financial news content. (Mean: 3.68 on 1-7 scale)



Q82 (After) – After reading this story, I am interested in reading more business/ financial news (Mean: 4.7 on 1-7 scale) This phenomenon showed up in post-experiment interviews, too. A 19-year-old female journalism student who read "For Young Savers..." said: "It was just easier to understand than normal financial news. And it wasn't extremely boring -- I feel like that's the main reason I don't pay attention to financial stuff is cause it's boring. But it wasn't terrible." And a 21-year-old female journalism student who read "What Is Your Secret Shopper Score" said: "I kind of pigeonholed it as 'It's just guys in suits working on Wall Street'. Like that's what I always thought financial news was. I think it's interesting definitely to open it up and see other sides of it….It definitely made me more curious about other stories I could read."

Editorial Strategy Recommendations

Young people enjoy consuming news content and do so frequently but seem to be alienated from news focusing on finance or business (see Figure 2). Considering the findings in this thesis, financial news outlets might take into account a strategy along the lines of the following points if they seek to engage a younger audience. First, financial news outlets should produce more content that is engaging, such as the interactive digital stories here. This means including more clickable features, more animation, and more Scrollytelling in their stories targeted toward young people. Second, they should seek to make their stories light on jargon and explain concepts more simply. Third, financial news outlets should target younger people on the platforms they use to consume news – namely, social media sites, where a vast majority of respondents said they get their news content. On this, one 21-year-old female journalism said in a post-experiment interview that, "If people [in financial news] wanted to reach a broader market, to do more things

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like [The Nest Egg Game]. Because if I saw a link to that on Twitter or it popped up on Yahoo.com when they preview all the stories, and I saw something interactive and fun like that, then I totally would because it's not that I don't want to know about it because I know how important it is to know. It's just I've never been good at understanding it." This targeting might take different forms, from starting new social media accounts specifically labeled as being for young audiences, to paying for sponsored content pushed to young users of sites like Twitter and Facebook. Finally, and arguably most importantly, financial news outlets need to pick topics that are relevant to younger people. Based on open-ended responses to a question in the survey portion of the experiment asking about topics they would like to see covered by financial news content, participants mentioned subjects including financial planning; wealth disparity; student loans; how the environment relates to money; how business are changing technologically; budgeting; regional economic news; entering the workforce; fashion; poverty; and entrepreneurship.

Figure 2

Consumption Frequency – General News vs. Financial News

Q8 - During the typical week, how many days would you say you read, watch, or listen to news content?

Q10 - During the typical week, how many days would you say you read, watch, or listen to business or financial news content?





Societal Benefits of Increased Youth Readership in Financial News

If financial news outlets do indeed start to reach out to and engage with younger audiences successfully, the greater benefits to society have the potential to be substantial. Financial news has the capacity to act as a tool to improve financial literacy, according to the findings in this thesis. Greater financial literacy among young people would presumably have lasting knock-on effects such as: encouraging college students to save for retirement earlier; exposing people to financial concepts generally and heightening awareness about investment options and strategies; preventing people from making illinformed financial decisions; and allowing people to be more informed on financial and economic policy when voting. Many people, especially young people, feel they lack exposure to and education in financial concepts, and financial literacy rates back this up. U.S. participation in the stock market is also relatively low, with about 55% of Americans as of April 2019 reporting they own stocks either through an individual brokerage account, a mutual fund, or an account for retirement savings (Saad, 2019). Financial news, then, can play a role in educating and informing people, and the findings in this thesis show that it can play this role effectively.

Limitations and Future Research

This study provides valuable insight into youth engagement with financial news, its potential to have a positive impact on financial literacy rates, and its potential to connect with younger audiences. However, a few limitations are present. First, a larger and more diverse sample would have been more ideal – the participant pool skewed white, female, and suburban, and most participants were students in either the College of Communication or the College of Business. Second, the study does not measure longterm effects, like how often participants read financial news going forward. That said, future research should focus on long-term engagement with financial news, and what variables influence habitual consumption (i.e. owning securities). This study shows the importance of relevance as a motivator for consuming financial news content, so perhaps a future study which offers participants a sum of money to invest and looks at how this affects their financial news consumption habits would add insight into the relationship between young people and financial news. Controlling for financial literacy more concretely (i.e. students take a pre and post financial literacy test for a longer duration study) may also help to demonstrate the effectiveness of financial news content as an educator. Finally, as technology develops, future research should generally continue to

look at how financial news outlets incorporate interactivity into their content, and the evolution of how they approach their relationship with young people.

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Appendix A: Experiment Codebook

Q1 - How old were you on January 1st, 2020? (Type only in numbers. For example: "24" or "21" or "30")

Q2 - What gender do you identify with?

- 1 Male
- 2-Female
- 3 Other

Q83 - Please specify your ethnicity.

- 1 White
- 2 Hispanic
- 3 Latino
- 4 Black
- 5 African American
- 6 Native American
- 7 Asian or Pacific Islander
- 8-Other

Q84 - What level program are you currently in?

- 1 Undergraduate
- 2 Master's
- 3 PhD

Q3 - What is your major?

Q4 - Did you grow up in a rural, suburban, or urban setting?

- 1 Rural
- 2-Suburban
- 3-Urban
- 4 Multiple Settings

Q6 - What is your family's annual income?

- 1 \$0-\$24,999
- 2 \$25,000-\$49,999
- 3 \$50,000-\$99,999
- 4 \$100,000-\$149,999
- 5 \$150,000-\$199,999
- 6 \$200,000-\$249,999
- 7 Over \$250,000

8 - Unsure

9 - I do not wish to answer

Q78 - Do you have a disability?

- 1 Yes
- 2 Not

$\mathbf{Q79}-(\mathbf{If}\;\mathbf{Yes})$ Please select all categories in which your disability/ies is/are associated

- 1 Autism
- 2 Deaf-Blindness
- 3 Deafness
- 4 Emotional Disturbance
- 5 Hearing Impairment
- 6 Intellectual Disability
- 7 Multiple Disabilities
- 8 Othopedic Impairment
- 9 Other Health Impairments
- 10 Specific Learning Disability
- 11 Speech or Language Impairment
- 12 Traumatic Brain Injury
- 13 Visual Impairment

Q8 - During the typical week, how many days would you say you read, watch, or listen to news content?

- 1 0 days a week
- 2 1-2 days a week
- 3 3-4 days a week
- 4 5-6 days a week
- 5 Every day (7 days a week)

Q71 - Please mark your level of agreement with the following statement. I enjoy consuming news content.

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q9 - Which news outlets do you frequently read/watch/listen to? If not applicable, mark N/A.

Q80 - Where do you normally find the news content that you read/watch/listen to? (i.e. social media, TV, Apple News, radio streaming, print newspaper, etc.). If not applicable, mark N/A.

Q10 - During the typical week, how many days would you say you read, watch, or listen to business or financial news content? (i.e. Content from The Wall Street Journal, Financial Times, Bloomberg, CNBC, Business Insider, etc.)

- 1 0 days a week
- 2 1-2 days a week
- 3 3-4 days a week
- 4 5-6 days a week
- 5 Every day (7 days a week)

Q72 - Please mark your level of agreement with the following statement. I enjoy consuming financial or business news content.

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q11 - Which financial news outlets do you frequently read/watch/listen to? If not applicable, mark N/A.

Q81 - Where do you normally find the financial news content that you read/watch/listen to? (i.e. social media, TV, Apple News, radio streaming, print newspaper, etc.). If not applicable, mark N/A.

Q17 - Why do you, or why do you not, read financial news?

Q60 - For the below statements please mark your level of agreement: How familiar would you say you are with basic business concepts?

- 1 Very unfamiliar
- 2 Unfamiliar
- 3 About average
- 4 Familiar

5 - Very familiar

Q69 - How familiar would you say you are with basic finance concepts?

- 1 Very unfamiliar
- 2 Unfamiliar
- 3 About average
- 4 Familiar
- 5 Very familiar

Q70 - How familiar would you say you are with basic economic concepts?

- 1 Very unfamiliar
- 2 Unfamiliar
- 3 About average
- 4 Familiar
- 5 Very familiar

Q75 - Have you talked about, planning for your future financially (i.e. saving for retirement) with your parents, guardians and/or mentors?

- 1 No
- 2 Yes
- 3 Unsure

Q67 - Please find the story listed below in one of the open Google Chrome tabs and read the news story. After you read the story, come back this page, click the answer and continue with the rest of the survey portion of the experiment.

Participants Read Story

Q20 - Which story did you read?

- 1 The Nest Egg Game
- 2 The Future of Arctic Shipping
- 3 What is Your Secret Shopper Score
- 4 For Young Savers Facing Subpar Returns, Think Long Term

Q21 – (If The Nest Egg Game) Which element in the story did you enjoy the most?

1 - Text

- 2 Photos
- 3 How the story unfolded while scrolling
- 4 Animation
- 5 The clickable answers

Q22 – (If The Future of Arctic Shipping) Which element in the story did you enjoy the most?

- 1 Text
- 2 How the story unfolded while scrolling
- 3 Animation

Q23 – (If What Is Your Secret Shopper Score) Which element in the story did you enjoy the most?

- 1 Text
- 2 Animation
- 3 Clickable Answers

Q13 - For the below statements please mark your level of agreement: I enjoyed this this content's format

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q14 - I learned something new about business, finance and/or economics by reading this story

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q15 - After reading this story, I would like to engage with more content like this in the future

1- Strongly disagree

- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q16 - This story made financial and/or economic concepts easier to understand

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q82 - After reading this story, I am interested in reading more business/financial news

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q19 - How much do you agree with the following statement? In comparison to traditional written articles (both print and online), I like this type of interactive content better

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

<u>User Engagement Scale - All answers on scale of 1(Strongly Disagree) to 7 (Strongly Agree)</u>

Aesthetics

Q27 - This news story is attractive

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q28 - This news story was aesthetically appealing

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q29 - I liked the graphics and images used in this news story

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q30 - This news story appealed to my visual senses

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q31 - The screen layout of this news story was visually pleasing

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral

- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Endurability

Q32 - Reading this news story was worthwhile

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q33 - I consider my experience a success

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q34 - Doing this task did not work out the way I planned

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q35 - My experience was rewarding

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q36 - I would recommend this news story to my family and friends

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Focused Attention

Q37 - I lost my self in this task

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q38 - I was so involved in the task that I lost track of time

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q39 - I blocked out things around me when I was reading this news story

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q40 - When I was doing this task, I lost track of the world around me

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral

- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q41 - The time I spend reading this news story just slipped away

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q42 - I was absorbed in the task

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q43 - During this experience I let myself go

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Felt Involvement

Q44 - I was really drawn into this news story

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q45 - I felt involved in this task

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q46 - This experience was fun

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Novelty

Q47 - I took my time with the news story out of interest

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q48 - Then content of the news story incited my curiosity

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q49 - I felt interested in the news story

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Perceived Usability

Q50 - I felt frustrated while reading this news story

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q51 - I found this news story confusing to read

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q52 - I felt annoyed while reading this news story

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q53 - I felt discouraged while reading this news story

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q54 - Reading this type of news story was mentally taxing

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q55 - This experience was demanding

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q56 - I felt in control of the experience

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q57 - I could not do some of the things I needed to do to read this news story

- 1- Strongly disagree
- 2- Disagree
- 3- Somewhat disagree
- 4- Neutral
- 5- Somewhat agree
- 6- Agree
- 7- Strongly agree

Q58 - What topics might you like to see covered by financial/business news outlets?

Q59 - Anything you'd like to add that I am missing?

Q61 - Would you like to participate in a more in-depth (5-10 minutes) interview with the researcher about the experiment? Interviews will be face-to-face. If so, please leave your contact information in the box below.

Appendix B: Post-Experiment Interview Questions

William Edwards Ohio University and Universität Leipzig

Master's Thesis

Participant Info:

| Age: Ma | jor:] | Location of Upbringing: | Gender: |
|----------------|----------|-------------------------|---------|
| Family Income: | Parents' | Occupations: | |

1. Do you typically read financial news – why or why not?

2. Does the type of interactive story in the experiment make you want to read more financial news in the future – why or why not?

3. What was your exposure to financial concepts growing up?

4. Anything else you would like to talk about?

Appendix C: Screen Grabs of Stories Used in Experiment *Group 1: The Nest Egg Game*



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The Future of Arctic Shipping Russia's Northern Sea Route gets more tanker traffic, but it remains a risky endeavor By Yaryna Serkez, Renée Rigdon and Costas Paris Published Oct. 24, 2018 at 5:30 a.m. ET As Arctic ice melts, the Northern Sea Route will stay navigable for longer periods, a result that could drastically change international trade and shipping. In February, China announced its "Polar Silk Road" plan that encourages Chinese companies to build infrastructure and conduct commercial trial voyages in the Arctic. By 2030, Russia plans to invest billions of dollars to develop infrastructure along the Northern Sea Route to facilitate ships traveling from Asia to Europe. Arctic traffic in 2018 All traffic in the Northern Sea Route(through Sept. 30) More ships are sailing through Arctic waters than ever before This map shows the change in Arctic

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traffic over recent years. Nearly ice-free navigation in the summer months and the opening of the Yamal project, a major natural-gas production site, increased traffic in the Northern Sea Route by 80% from January to August over the yearearlier period, to about 10 million metric tons, according to Norway's Nord University.

Arctic traffic in 2018 through Sept. 30

REENLA



Traffic related to the oil and gas industry, excluding cargo ships

Ice extent in 2018

These orange lines represent traffic related to the oil and gas industry. The majority of ships are crude-oil and natural-gas tankers, along with icebreakers and general cargo ships, associated with the first phase of the Yamal project, which began exporting natural gas last year. Only two container ships and five bulk carriers — out of a total of 130 vessels — had crossed the Northern Sea Route by the end of September this year.

Group 3: What Is Your Secret Shopper Score?



Group 4: For Young Savers Facing Subpar Returns, Think Long Term



The question of how much to save for retirement depends on factors including your age, income, and expectations for future stock and bond returns.



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