UNIVERSITY of York

This is a repository copy of *"This Will Blow Your Mind" : examining the urge to click clickbaits*.

White Rose Research Online URL for this paper:
https://eprints.whiterose.ac.uk/168209/

Version: Accepted Version

Article:
Chua, Alton Y.K., Pal, Anjan and Banerjee, Snehasish orcid.org/0000-0001-6355-0470 (2021) "This Will Blow Your Mind" : examining the urge to click clickbaits. Aslib Journal of Information Management. pp. 288-303. ISSN 2050-3806

https://doi.org/10.1108/AJIM-07-2020-0214

Reuse
Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown
If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.

White Rose university consortium
Universities of Leeds, Sheffield & York

eprints@whiterose.ac.uk
https://eprints.whiterose.ac.uk/

"THIS WILL BLOW YOUR MIND": Examining the urge to click clickbaits

Journal:	*Aslib Journal of Information Management*
Manuscript ID	AJIM-07-2020-0214.R1
Manuscript Type:	Research Paper
Keywords:	Clickbait, Gratifications, Information richness, Information processing, Urge to click, Internet-related epistemic beliefs

SCHOLARONE™
Manuscripts

"THIS WILL BLOW YOUR MIND": Examining the urge to click clickbaits

Abstract

Purpose: Integrating the uses and gratifications (U&G) theory, the notion of information richness, and personal epistemology framework, the purpose of this research is to propose and empirically validate a framework which specifies Internet users' urge to click clickbaits.

Design/Methodology/Approach: The hypotheses in the proposed framework were tested using a between-participants experimental design (N=204) that manipulated information richness (text-only vs. thumbnail clickbaits).

Findings: Curiosity, perceived enjoyment, and surveillance were significant predictors of the urge to click. In terms of information richness, the urge to click was higher for thumbnail vis-a-vis text-only clickbaits. Internet-related epistemic beliefs moderated the relation between the gratification of passing time and the urge to click.

Originality/Value: This paper represents one of the earliest attempts to investigate Internet users' urge to click clickbaits. Apart from extending the boundary conditions of the U&G theory, it integrates two other theoretical lenses, namely, the notion of information richness, and personal epistemology framework, to develop and empirically validate a theoretical framework.

Keywords Clickbait, Gratifications, Information richness, Information processing, Urge to click, Internet-related epistemic beliefs.

Paper type Research paper

Aslib Journal of Information Management

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1. Introduction

1.1. Background and Problem Statement

The term 'clickbait' refers to sensationalized online headline such as "What These Dogs Are Doing Will Blow Your Mind" or "38 Things No Man Over 40 Should Own" presented through either a text or a thumbnail hyperlink (Das and Clark 2019). A form of content marketing strategy, it offers just sufficient information to pique Internet users' interest and whet their appetite for more. By exploiting this curiosity gap, the ultimate aim of the headline is to promote users' likelihood to click through and read the content on another webpage, which in turn drives traffic and boosts revenues (Blom and Hansen 2015; Loke et al., 2019; Pandey and Kaur 2018).

Still in its nascent state, the current literature on clickbaits predominantly focuses on detection. Prior studies have used classification algorithms to separate clickbaits from ordinary news feed (Bourgonje et al. 2017; Chakraborty et al. 2016; Geçkil et al. 2020). However, detecting clickbaits has become increasingly challenging because new bait phrases keep emerging. Furthermore, with clickbaits being packaged and personalized dynamically based on users' Internet browsing behaviors, it is difficult for algorithms to separate them from ordinary headlines. After all, clickbaits are purposefully designed with deceptive motives (Blom and Hansen 2015; Loke et al., 2019).

To tackle the problem, another possible line of research that has yet to be explored involves studying user's response. Most users do not usually set out to look for clickbaits (Agrawal 2016). But because clickbaits carry teasing headlines that appear unexpectedly, navigation on the Internet takes serendipitous turns when users seek to gratify their new-found urge. A possible way to understand why users gravitate toward clickbaits is to view the phenomenon through the lens of uses and gratifications (U&G).

Aslib Journal of Information Management

A classic theory of users' mass media use, the U&G theory was originally developed to explain how users' motivations as well as their social and psychological circumstances influence the way they use media (Katz et al. 1974). Subsequently, it was applied in a variety of contexts that range from the Internet (Helsper and Gerber 2012) to social media (Malik et al. 2016) and mobile applications (Aharony 2015). Given that gratifications predict online behaviors such as news browsing and photo sharing, the U&G theory is well suited to guide the current study.

The literature highlights two broad categories of gratifications associated with users' media use, and hence possibly clickbait consumption. These are experience-related and information-related (Choi and Shah 2016; Zhang and Zhang 2013). While the former is associated with deriving pleasurable experience through surfing the Internet, the latter is linked to informational utility gained from new content and updates.

In the context of clicking clickbaits, two additional lenses should be brought to bear. The first relates to information richness. Some clickbaits are text-only whereas others are supplemented by small-format pictures called thumbnails (Biyani et al. 2016; Chen et al. 2015). Those with thumbnails appear more visually captivating, and hence offer greater information richness than those that are purely text-based (Kim et al. 2015; Wang et al. 2016). Nonetheless, there have been no prior studies to confirm the role of information richness of clickbaits on users' urge to click.

The second perspective has to do with users' Internet-related epistemic beliefs. Users' decision on what to click and what to ignore on the Internet could be dictated by their epistemic beliefs (Hofer 2004), which include their perception of the nature of knowledge and the process of knowing. Viewing knowledge as something concrete that can be acquired easily on the Internet is considered naïve. In contrast, viewing knowledge as something dynamic and can be acquired online only through rigorous rules of inquiry is deemed robust

Aslib Journal of Information Management

(Kammerer et al. 2013). When presented with clickbaits, an epistemologically robust user is thus likely to be more skeptical vis-à-vis a naïve user. The perceived derivable gratifications and the information richness of clickbaits notwithstanding, how epistemic beliefs shape users' urge to click has, however, yet to be empirically investigated.

1.2. Research Questions and Significance

To explore factors that predict users' urge to click clickbaits, this research integrates three theoretical lenses, namely, the U&G theory, the notion of information richness, and the personal epistemology framework. Specifically, it investigates the following three research questions (RQs):

RQ 1: To what extent do gratifications predict users' urge to click clickbaits?

RQ 2: To what extent does information richness predict users' urge to click clickbaits?

RQ 3: To what extent do users' Internet-related epistemic beliefs moderate the relation between (a) gratifications and the urge to click clickbaits, (b) information richness and the urge to click clickbaits?

This paper holds both theoretical and practical significance. On the theoretical front, it represents one of the earliest attempts to understand Internet users' urge to click clickbaits while taking into account the roles of gratifications, information richness and Internet-related epistemic beliefs. In this way, it provides a deeper understanding of clickbait consumption compared with previous works that have primarily focused on clickbait detection. On the practical front, this paper encourages users to cultivate robust epistemic beliefs when dealing with alluring online content. The findings can help improve society's online resilience by bolstering individuals' defence mechanism against digital temptations (Rothrock, 2018; Thiel, 2018). The paper also strongly encourages content marketers not to misrepresent

Aslib Journal of Information Management

through clickbaits but to offer stories in consonance with what is promised in the headlines. Additionally, they could exercise creativity with wordplay and captivating thumbnails to appeal to users' need for gratifications.

2. Literature Review and Theory Development

2.1. Related Works

Research on clickbaits has mostly focused on clickbait detection (Chakraborty et al. 2016; Pandey and Kaur 2018; Potthast et al. 2018). It suggests that clickbaits can be distinguished from ordinary news feed using content-based features that range from hyperbolic words (e.g., breathtakingly, soul-stirring), punctuation patterns (e.g., ..., !!!), and possessive pronouns (e.g., its, you) to word length, headline length, and bait phrases (e.g., You Won't Believe, Will Blow Your Mind). While the textual characteristics of clickbaits are well studied, a more fundamental question has been overlooked hitherto: What compels users to click clickbaits?

In the digital media landscape, clicks are increasingly becoming important as they allow instant monitoring of audience responses to content (Karlsson and Clerwall, 2013; Kormelink and Meijer, 2018). Specifically, to understand clicking behavior, one of the most commonly studied constructs is intention to click. This is because actual behavior is strongly predicted by behavioral intention (Ajzen 1991; Davis 1989). Several works have studied behavioral intention to click online banner ads and social media advertising (Gauzente 2010; Idemudia and Jones 2015; Kim et al., 2019).

However, given that clickbaits appear serendipitously, this paper casts the spotlight on the urge to click rather than the behavioural intention to click. With limited attention span, most Internet users only engage in shallow information processing, and are open to task-switching possibilities in their online experience (Castillo et al. 2014; Hillesund 2010;

Aslib Journal of Information Management

Mangen 2008). Unable to ignore such new stimuli, their eyes tend to dart back and forth between the intended content and the alluring distraction (Hillesund 2010; Thiel, 2018). During this process, their perceived derivable gratification from clickbaits could arouse their urge to click.

Hence, guided by the literature (Castillo et al. 2014; Hillesund 2010; Mangen 2008), the paper conceptualizes the urge to click clickbaits as the willingness to give in to the promise of gratifying an unexpected information need. Regarded as a perverted form of banner ads, clickbaits manifest themselves in different forms ranging from fake news to false advertisements. With the overriding objective to drive web traffic, clickbaits are designed to lure users into clicking. Nonetheless, the urge to click clickbaits has yet to receive much scholarly attention.

2.2. Hypotheses for RQ 1: Uses and Gratifications

The U&G theory suggests that people use media to satisfy their affective (e.g., entertainment) and cognitive (e.g., informational) needs (Katz et al. 1974; Lee and Ma 2012; Rubin, 2002). Sufficiently robust, the theory has been popularly used to examine forces driving users' interaction with web and mobile applications (Aharony, 2015; Malik et al. 2016; Wei and Lu 2014; Zhang and Zhang 2013; Zhang et al. 2016). This paper uses the theory to unravel users' perceived derivable gratifications from clickbaits.

Existing U&G literature categorizes gratifications into two major dimensions, namely, experience-related and information-related. Experience-related gratifications are usually associated with users' usage experience such as the pleasure of being immersed in the content (Feng et al. 2016; Lin 2014). These gratifications include curiosity, passing time, and perceived enjoyment. Curiosity refers to the desire to explore new ideas through media use (Feng et al. 2016). Users can also use the media simply to pass time when they have nothing

Aslib Journal of Information Management

else to do (Lin 2014). Perceived enjoyment refers to the pleasure and excitement experienced by users from the media use (Wei and Lu 2014). Experience-related gratifications meet users' needs for pleasure and emotional release (Feng et al. 2016; Lin 2014). Users who are inherently curious or are distracted from the tasks at hand would find clickbaits attractive. In other words, when users have a penchant for the experience-related gratifications of curiosity, passing time, and perceived enjoyment, they are likely to click clickbaits. Hence, the following is hypothesized:

H1: Experience-related gratifications, namely, (a) curiosity, (b) passing time, and (c) perceived enjoyment relate positively to the urge to click clickbaits.

Information-related gratifications are contingent on information utility of the content (Choi 2016; Lee and Ma 2012; Zhang and Zhang 2013). These gratifications include surveillance and social utility. Surveillance refers to the satisfaction derived from being kept abreast of developments in various topics through media use (Choi 2016). Social utility refers to the benefits derived from using the media to foster relationships with others (Lee and Ma 2012). Users who view clickbaits as opportunities to know something that could be turned into a topic of discussion with others tend to fall for clickbaits. In other words, when users have a penchant for the information-related gratifications of surveillance and social utility, they are likely to click clickbaits. Hence, the following is hypothesized:

H2: Information-related gratifications, namely, (a) surveillance, and (b) social utility relate positively to the urge to click clickbaits.

2.3. Hypothesis for RQ 2: Information Richness

Information richness refers to the information-carrying capacity of a medium (Levy and Gvili 2015; Lo and Lie 2008). Compared with lean media such as texts, richer media such as images are more effective in grabbing the eyeballs and nudging decision-making

Aslib Journal of Information Management

(Tseng et al. 2017; Kahai and Cooper 2003). This is why promotional content often uses images along with texts to attract attention (Flores et al. 2014; Kim et al. 2015; Wang et al. 2016). By tapping into users' cognitive subsystems, pictures elicit positive affective responses promptly, and engender a favorable attitude towards the content (Flores et al. 2014; Pieters and Wedel 2004).

Meanwhile, clickbaits appear as either text-only or are supplemented with thumbnails. Since the latter has greater information richness, it could be more effective in attracting attention. In fact, research shows that users' likelihood to click through to news stories is heightened by the presence of pictures (Ulloa et al. 2015). This is because pictures facilitate relatively easy and quick sense-making (Keib et al. 2017). Hence, the following is hypothesized:

H3: Information richness of clickbaits (text-only vs. thumbnail) relates positively to the urge to click.

2.4. Hypothesis for RQ 3: Internet-Related Epistemic Beliefs

When using the Internet, users voluntarily make their own decisions about what to click (Bucklin and Sismeiro 2009; Gauzente 2010). These decisions could stem in part from the individual difference of Internet-related epistemic beliefs, which encompass users' perceptions about the Internet media in terms of the nature of knowledge and the process of knowing (BrÅten et al. 2005; Hofer, 2004; Kammerer et al. 2013). The nature of knowledge represents how knowledge from the Internet is perceived on a rigid-versus-fuzzy scale. The process of knowing represents how acquiring knowledge from the Internet is perceived on an easy-versus-difficult scale (Chua and Banerjee, 2017; Kammerer and Gerjets, 2012). Together, these perceptions shape individuals' digital literacy (Gross and Latham, 2012).

Aslib Journal of Information Management

According to the personal epistemology framework, users who believe knowledge is difficult to acquire, and must be justified through rules of inquiry are identified as being epistemologically robust. In contrast, those who believe knowledge is easy to acquire, and can be justified through intuition are epistemologically naïve (Hofer 2004; Kammerer and Gerjets, 2012). Nuances in people's worldview in terms of Internet-related epistemic beliefs could potentially foster digital inequality (Bol et al. 2018; Hofer, 2004; Kammerer and Gerjets, 2012; Rothrock, 2018). For example, previous works that dealt with health-related and education-related information (BrÅten et al. 2005; Chua and Banerjee 2017; Hofer 2004; Kammerer et al. 2013) found epistemologically robust users to be vigilant in processing information from online sources. These users are generally skeptical about information on the Internet, and hence rely on multiple sources to ascertain its veracity. Moreover, they are resistant to sharing fake news. On the other hand, epistemologically naïve users exercise little restraint online. They are seldom cautious in their information processing behaviors, and hence are usually the ones to spread hoaxes.

Applying these findings to the present context, two equally compelling but opposing line of arguments present themselves. One, epistemologically robust users would always resist clicking clickbaits whereas their naïve counterparts would base their clicking decisions on gratifications and information richness. If so, gratifications and information richness should relate to the urge to click more strongly among epistemologically naïve users vis-à-vis those who are robust. Alternatively, epistemologically robust users would make informed decisions whether to click clickbaits while those who are epistemologically naïve would make clicking decisions in an ad hoc manner. If so, gratifications and information richness should relate to the urge to click more strongly among epistemologically robust users vis-à-vis those who are naïve.

Aslib Journal of Information Management

Even though neither proposition has been empirically validated, it is clear that Internet-related epistemic beliefs can exert a moderating effect on the relations between gratifications and the urge to click as well as information richness and the urge to click. Hence, the paper posits the following non-directional moderating hypothesis:

H4: Internet-related epistemic beliefs moderate how gratifications and information richness of clickbaits (text-only vs. thumbnail) relate to the urge to click.

Overall, guided by the three research questions and their respective hypotheses, this paper relies on the U&G theory (Katz et al. 1974), the notion of information richness (Levy and Gvili 2015; Lo and Lie 2008), and the personal epistemology framework (Hofer 2004) to develop the theoretical framework shown in Figure 1.

Figure 1. Theoretical Framework.

3. Research Method

3.1. Research Design

Aslib Journal of Information Management

A between-participants online experiment was conducted to test the hypotheses in the theoretical framework. Two similar news websites on Apple Inc, the global technology giant that enjoys widespread popularity, were created. The main contents on the websites cover updates on Apple Inc. while the right margin shows a set of four clickbaits to ensure ecological validity (Flores et al. 2014). Informed by prior research (Chakraborty et al. 2016; Rony et al. 2017), the clickbaits were randomly chosen from Buzzfeed.com.

To manipulate information richness, one website presents the clickbaits as text-only hyperlinks (Figure 2) while the other as thumbnail hyperlinks (Figure 3). Whether a clickbait is text-only or includes a thumbnail is an objective difference. This obviated the need for a manipulation check (O'Keefe 2003). The effects of information richness will be revealed through the data analysis.

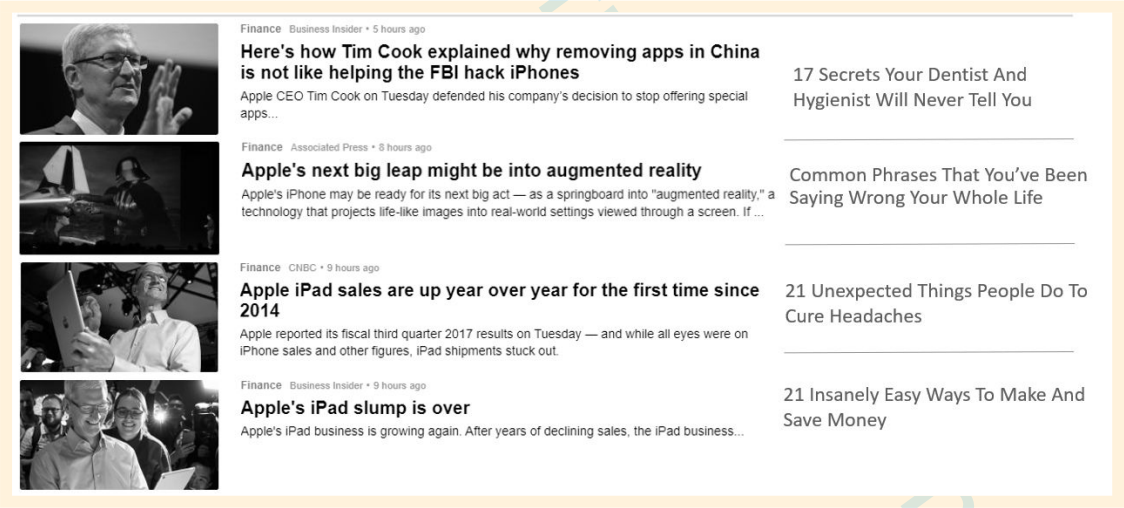


Figure 2. Clickbaits presented through text-only hyperlinks.

Aslib Journal of Information Management

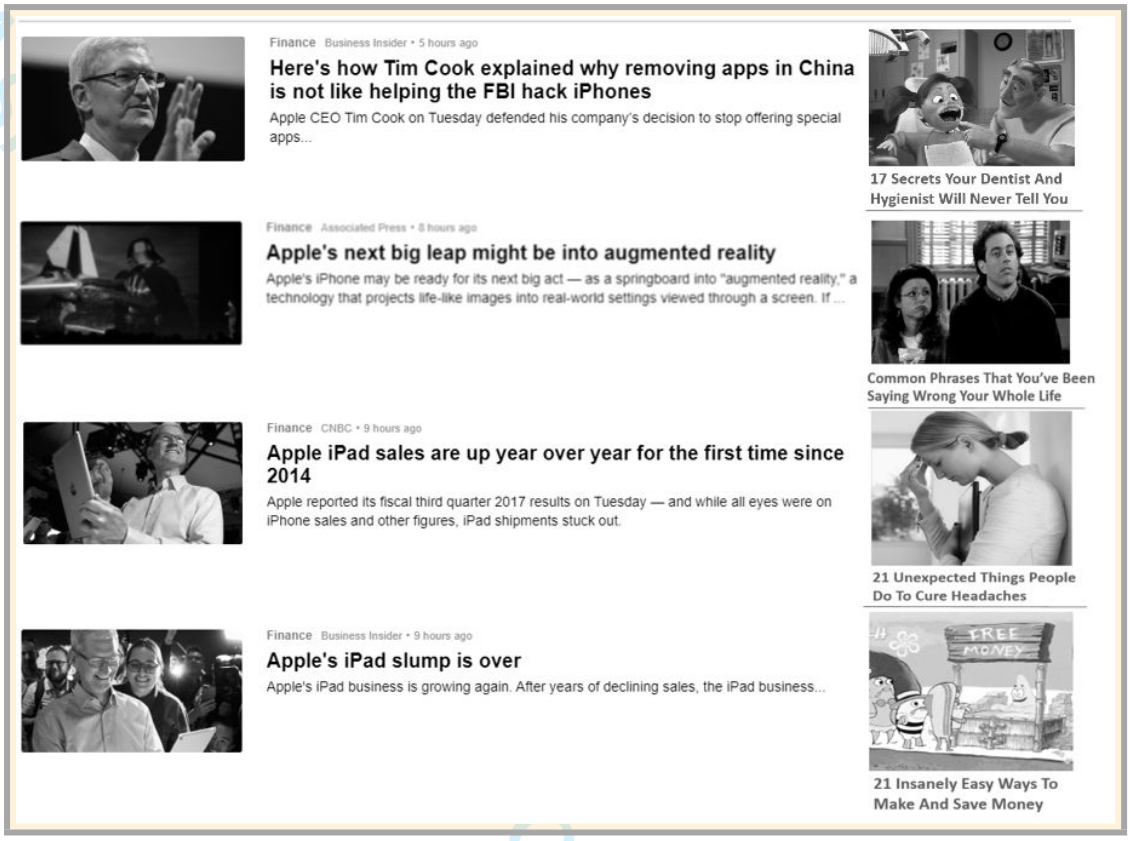


Figure 3. Clickbaits presented through thumbnail hyperlinks.

3.2. Procedure of Data Collection

The study invitation was disseminated through an advertisement posted on notice boards in a large public university in Southeast Asia as well as the researchers' online social networks. The eligibility criterion was that participants must be interested in Apple Inc. From an initial pool of 250 who expressed interest, 226 participated in the study. With 22 dropping off mid-way, complete responses from the remaining 204 participants were admitted for analysis.

After obtaining informed consent, the participants were randomly assigned to one of the two websites, and thereafter guided through three steps. In the first step, they were asked to imagine they were looking for online news about Apple Inc, and had landed on the website (either Figure 2 or Figure 3).

Aslib Journal of Information Management

In the second step, participants were asked to recall their initial reaction to the website, particularly their perception about the clickbaits at the right margin. For each clickbait, they recalled their urge to click and thereafter the perceived gratifications that they hoped to derive from clicking. These were captured using an 18-item questionnaire adapted from the literature (Choi 2016; Idemudia and Jones 2015; Lee and Hong 2016; Lin 2014; Zhang and Zhang 2013). This sequence of measuring the urge to click prior to perceived gratifications was maintained to reduce demand effects (Pechmann, 1992). The questionnaire uses a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The first three items measure the urge to click while the next 15 measure the gratifications (5 gratifications x 3 items).

In the third step, participants' Internet-related epistemic beliefs were captured using another 18-item questionnaire adapted from the literature (BrÅten et al. 2005; Chua and Banerjee 2017). The questionnaire also uses a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Additionally, participants' demographic details including gender, age and highest educational qualification were also collected so that these could be controlled in the statistical analyses. Finally, a debriefing statement was provided to clarify that the focus of the research was not on news related to Apple Inc, but on clickbaits. Table 1 shows the items of the two questionnaires.

Table 1. Questionnaires.

18-item questionnaire for the second step of the experimental procedure	
Constructs	**Questionnaire Items**
The urge to click ($\alpha = 0.95$)	• I was inclined to click this headline. • I liked to click this headline. • I was compelled to click this headline.
Curiosity ($\alpha = 0.93$)	• I felt clicking this headline would give me new information. • I felt clicking this headline would allow me to collect interesting information. • I felt clicking this headline would enable me to pursue new information.
Passing time ($\alpha = 0.91$)	• I felt clicking this headline would enable me to pass time when I am bored. • I felt clicking this headline would help when I have nothing better to do.

Aslib Journal of Information Management

	• I felt clicking this headline would give me something to do to occupy my time.
Perceived enjoyment (α = 0.95)	• I felt clicking this headline would arouse me. • I felt clicking this headline would make me feel excited. • I felt clicking this headline would make me emotionally attracted.
Surveillance (α = 0.94)	• I felt clicking this headline would help me find out first-hand information to extend my knowledge. • I felt clicking this headline would trigger thoughts to extend my knowledge. • I felt clicking this headline would trigger reflections to extend my knowledge.
Social utility (α = 0.90)	• I felt clicking this headline would help me find out a topic to tell others. • I felt clicking this headline would allow me to discuss a new topic with others. • I felt clicking this headline would help me to keep up in conversation with people.

18-item questionnaire for the third step of the experimental procedure

Construct	Questionnaire Items
Internet-related epistemic beliefs (α = 0.83)	• The truth about almost every issue is available on the Internet. • Correct information about every issue can be found on the Internet. • On the Internet, many different sources provide correct information. • The Internet contains concrete information. • Most of what is true is available on the Internet. • The strength of the Internet is the vast amount of detailed information that is located there. • The Internet can provide me with most of the knowledge I need to know. • The most important aspect of the Internet is that it contains so many specific facts about any issues. • When I encounter difficult problems, I feel safe if I find information about them on the Internet. • On the Internet, the richness of detail about any issues is most prominent. • I often doubt if the Internet really is a good source for information. (R) • The Internet contains accurate information about the problems that I face. • I am most confident that I have understood something when I have used the Internet as a source of information. • On the Internet, there are more facts than speculations. • I evaluate information available on the Internet by checking more sources. (R) • To check the credibility of information available on the Internet, I try to compare multiple sources. (R) • I check if the information available on the Internet is logical. (R) • To check if the information available on the Internet is reliable, I evaluate it in relation to other knowledge I have. (R)

Note: R = Reverse-coded items

3.3. Data Analysis

Hierarchical-moderated multiple regression was used with the composite index measuring the participants' urge to click as the dependent variable. There are five hierarchical models of independent variables. Model 1 comprises three control variables, namely, gender, age and highest educational qualification. Model 2 and Model 3 include the composite

Aslib Journal of Information Management

indices corresponding to the experience-related gratifications (curiosity, passing time, and perceived enjoyment) and the information-related gratifications (surveillance and social utility) respectively. Next, Model 4 presents the information richness of clickbaits (1 = thumbnail, 0 = text-only). Finally, Model 5 includes the interaction variables to examine the moderating effects of Internet-related epistemic beliefs with gratification-related factors and information richness.

To create the interaction variables included in Model 5, two steps were followed. First, the participants were categorized as either epistemologically naïve or robust. For this purpose, a median-split was done based on their responses to the 18 questionnaire items measuring epistemic beliefs (cf. Table 2). Participants who scored above the median were deemed epistemologically naïve, while the rest were considered epistemologically robust. This was captured by Internet-related epistemic beliefs (IEB), a dichotomous variable.

Next, IEB was multiplied by each of the three variables for experience-related gratifications, two variables for information-related gratifications, and information richness. Regression is however sensitive to multicollinearity when a product term is added as an independent variable. Therefore, to minimize multicollinearity, all continuous variables were standardized prior to the multiplication (Aiken and West 1991). The values of variance inflation factor confirmed that multicollinearity was not a problem. The entire analysis was done using SPSS.

4. Results

4.1. Descriptive Statistics

Participants were randomly assigned to one of the two experimental conditions. In the text-only experimental condition (N=104), there were 58 males and 46 females. The average age was 28.02 years with a range from 21 years to 44 years. In terms of highest educational

Aslib Journal of Information Management

qualifications, 53 participants held a Bachelor's degree, 48 held a Master's degree, and three held a PhD degree. With respect to Internet-related epistemic beliefs, 44 were naïve while the rest were robust.

In the thumbnail experimental condition (N=100), there were 48 males and 52 females. The average age was 28.48 years with a minimum age of 21 years and a maximum age of 46 years. In terms of highest educational qualifications, 50 participants held a Bachelor's degree, 48 held a Master's degree, and two held a PhD degree. With respect to Internet-related epistemic beliefs, 61 were naïve while the rest were robust. Descriptive statistics of the variables for the two experimental conditions are shown in Table 2.

Table 2. Descriptive statistics of the variables for the two experimental conditions.

	(N = 104) Text-only hyperlinks (M ± SD)	**(N = 100) Thumbnail Hyperlinks (M ± SD)**
The urge to click	2.64 ± 1.29	3.29 ± 1.16
Curiosity	3.20 ± 1.22	3.48 ± 1.17
Passing time	3.23 ± 1.26	3.02 ± 1.31
Perceived enjoyment	2.61 ± 1.13	3.03 ± 1.07
Surveillance	2.73 ± 1.12	3.06 ± 1.01
Social utility	2.84 ± 0.98	3.03 ± 0.83
Internet-related epistemic beliefs	2.72 ± 0.61	2.85 ± 0.39

4.2. Inferential Statistics

The regression results for the urge to click clickbaits are shown in Table 3, which included five hierarchical models of independent variables comprising control variables, experience-related gratifications, information-related gratifications, information richness, and variables for interaction effects respectively. Statistical inferences were drawn from the results of the final model (Model 5).

After accounting for the control variables, the experience-related gratifications explained an additional 76% of the variance in the dependent variable. Among these

Aslib Journal of Information Management

gratifications, participants' curiosity (β = 0.15, p < 0.01) and perceived enjoyment (β = 0.35, p < 0.001) were positively related to their urge to click. Hence, H1(a) and H1(c) were supported. On the other hand, participants' passing time was found to be non-significant. Hence, H1(b) was not supported.

Table 3. Hierarchical-moderated multiple regression results for the urge to click.

	The urge to click (β)				
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Control variables					
Gender	0.14*	-0.00	0.00	-0.00	-0.02
Age	-0.09	0.03	0.04	0.04	0.03
Highest educational qualification	0.13	0.04	0.03	0.03	0.03
Experience-related gratifications					
Curiosity		0.25***	0.15**	0.15**	0.15**
Passing time		0.01	-0.00	0.01	-0.07
Perceived enjoyment		0.70***	0.39***	0.37***	0.35***
Information-related gratifications					
Surveillance			0.41***	0.41***	0.49***
Social utility			0.06	0.05	0.01
Information richness					
Thumbnail vs Text-only				0.10***	0.12**
Interaction effects					
IEB x Curiosity					0.01
IEB x Passing time					0.15***
IEB x Perceived Enjoyment					0.02
IEB x Surveillance					-0.10
IEB x Social utility					0.02
IEB x Information richness					-0.02
Incremental R^2	**0.04**	**0.76**	**0.04**	**0.01**	**0.01**
Total R^2		**0.80**	**0.84**	**0.85**	**0.86**

Note. ***p < 0.001, **p < 0.01, *p < 0.05. IEB = Internet-related epistemic beliefs.

Next, the information-related gratifications explained another 4% of the variance in the dependent variable. Among these gratifications, surveillance (β = 0.49, p < 0.001) was positively related to participants' urge to click. Hence, H2(a) was supported. However, social utility was found to be non-significant. H2(b) was therefore not supported.

Aslib Journal of Information Management

After accounting for the control variables and the gratifications, information richness had a significant relationship with participants' urge to click ($\beta = 0.12$, $p < 0.01$). This result shows that the urge to click was higher for thumbnail vis-a-vis text-only hyperlinks. Hence, H3 was supported.

In terms of the interaction effects, participants' Internet-related epistemic beliefs significantly moderated the relationship between passing time and the urge to click ($\beta = 0.15$, $p < 0.001$). To delve deeper into the significant moderating relation, a correlation analysis was conducted. The results suggest that the relation between participants' passing time and the urge to click was not significant for epistemologically robust users ($r_{robust} = -0.06$, $p > 0.05$) but positively related for epistemologically naïve users ($r_{naive} = 0.40$, $p < 0.001$). However, Internet-related epistemic beliefs showed no moderating effects on curiosity, perceived enjoyment, surveillance, social utility, and information richness. Hence, the results lend partial support to H4. Overall, the proposed theoretical framework explained 86% of the variance in the urge to click.

5. Discussions and Conclusions

5.1. Key Findings

Four major findings can be gleaned from this research. First, in terms of experience-related gratifications, participants' curiosity and perceived enjoyment were positively related to their urge to click clickbaits. While previous research is categorical about the alluring nature of clickbaits (Blom and Hansen 2015; Chen et al. 2015; Pandey and Kaur 2018), this paper offers empirical evidence to identify specific factors that are related to users' urge to click. Clickbaits provide just enough information to rouse but not completely satisfy users' curiosity. Filling the curiosity gap is only a click away. Moreover, clickbaits seem to gratify users' needs for pleasure-seeking activities, and emotional release (Lin 2014; Zhang and

Aslib Journal of Information Management

Zhang 2013). Even though clickbaits are notorious in drawing users in and then disappointing them, they still offer the thrill for users to speculate the contents that lie beyond the hyperlinks. To tackle the problem of clickbaits, netizens clearly need better digital literacy skills (Gross and Latham, 2012; Rothrock et al., 2018; Thiel, 2018).

Second, in terms of information-related gratifications, surveillance was found to be significantly related to participants' urge to click. In fact, it was the strongest predictor of all the variables. This finding suggests that participants saw clickbaits as a way to satisfy their inquisitiveness for new information from the Internet. It corroborates the literature on online information browsing behaviors by casting the spotlight on the information utility aspect of clickbaits (Lee and Ma 2012; Zhang and Zhang 2013). However, social utility was found to be non-significant. Clearly, users' urge to click is fuelled by personal rather than social reasons.

Third, information richness of clickbaits was significantly related to participants' urge to click. This paper empirically shows that the urge to click was higher for thumbnail vis-a-vis text-only hyperlinks. This could be due to the power of images to elicit instinctive responses by activating "peripheral and pre-attentive processes that are automatic, parallel, fast and less effortful" (Pieters and Wedel 2004, p. 39). Previous works also suggest that pictorial messages elicit more affective response than text-only messages (Flores et al. 2014; Keib et al. 2017). Therefore, this finding lends support to the literature by showing that catchy headlines coupled with images can produce maximal effect in promoting users' urge to click (Tseng et al. 2017).

Finally, even though passing time had a non-significant relationship with the urge to click in the full sample, it significantly interacted with participants' Internet-related epistemic beliefs. In particular, a significant and positive relation between passing time and the urge to click was found only among epistemologically naïve participants. They seem to approach

Aslib Journal of Information Management

clickbaits merely as a means to pass time, unlike their robust counterparts who did not perceive clickbaits as a solution to boredom. However, in terms of the other gratification factors and information richness, naïve and robust participants did not differ in their urge to click. Thus, this research extends the literature on Internet-related epistemic beliefs (BrÅten et al. 2005; Kammerer et al. 2013) by suggesting while both types of users could potentially fall for clickbaits, epistemologically naïve users may sometimes lose their sense of purposefulness and are ready to wander off aimlessly when exposed to clickbaits.

5.2. Contributions and Implications

This paper makes a number of contributions to research. First, it represents one of the earliest attempts to understand Internet users' urge to click clickbaits, which is conceptualized as the willingness to give in to the promise of gratifying an unexpected information need. Specifically, the paper enriches existing literature which predominantly focuses on detection of clickbaits (Chakraborty et al. 2016; Geçkil et al., 2020; Potthast et al. 2018) by addressing a more fundamental question: What compels users to click clickbaits? This marks a shift in research focus from clickbait detection to clickbait consumption.

Second, this paper contributes to the U&G theory by extending its boundary conditions. Prior works have mostly applied the theory to study individuals' intention to engage in online communication behaviors that are anticipated or planned beforehand (e.g., Malik et al. 2016; Park et al. 2009). This paper however demonstrates the applicability of the U&G theory—specifically, the gratifications of curiosity, passing time, and surveillance—in the context of individuals' urge to click clickbaits, which usually appear serendipitously.

In addition, this paper integrates two other theoretical lenses, namely, the notion of information richness, and personal epistemology framework, to develop and empirically validate a theoretical framework of users' urge to click clickbaits. By taking into account the

Aslib Journal of Information Management

roles of experience-related and information-related gratifications, this research lends evidence that users' gratifications play a crucial role in enhancing users' likelihood to click clickbaits. While curiosity and perceived enjoyment emerged as significant predictors from the experience-related gratifications, surveillance was found to be the only significant predictor from information-related gratifications. With respect to information richness, this paper shows that the urge to click was higher for thumbnail vis-a-vis text-only hyperlinks. Furthermore, it demonstrates the moderating role of Internet-related epistemic beliefs on the urge to click clickbaits in terms of passing time. The framework explaining 86% of the variance in users' urge to click lends support to the underpinning perspective drawn from the U&G theory (Katz et al. 1974; Lee and Ma 2012; Rubin, 2002), the notion of information richness (Levy and Gvili 2015; Lo and Lie 2008), and the personal epistemology framework (Hofer, 2004) in the context of clickbaits.

On the practical front, this paper offers two suggestions for users seeking for information online. The first is to establish a set of clear goals and mentally track the progress. Lest they veer off from their tasks, users ought to practice click restraint and not fall for the curiosity trap surreptitiously set up by clickbaits. Attractive-looking headlines and thumbnails that appear out-of-the-blue rarely deliver what they promise. The second suggestion is to deliberately cultivate robust epistemic beliefs. This involves developing a healthy skepticism toward online contents, and asking questions such as who the content creator is, why the message is being distributed and what techniques have been used to make it attractive (Thiel, 2018). In so doing, users will retain a better sense of control over their time on the Internet and make their work more productive. These two suggestions could also be incorporated as part of digital literacy training programme, along with the installation of ad-blocking applications to reduce the emergence of clickbaits.

Aslib Journal of Information Management

As for content marketers, it is in their interest to protect their professional integrity rather than resorting to clickbaits to draw viewership. Once trust is broken, it would be difficult to win users back. Hence, so long as headlines are published in good faith, content marketers could consider creative wordplay or captivating thumbnail designs to appeal to users' need for experience-related and information-related gratifications. Such a corporate policy not only fulfils users' information-seeking expectations but restore confidence in bona fide online merchants.

5.3. Limitations and Future Directions

Two limitations in this paper must be acknowledged. First, as with prior studies (Gauzente 2010; Idemudia and Jones 2015; Lin 2014), it relies on self-reported data collected using a questionnaire. Future research could use tools such as eye-tracking devices and mouse tracking applications to measure users' response to clickbaits in real time more spontaneously. Second, participants were drawn from the university campus and the researchers' online social networks. Using different sampling frames with larger sample sizes would help improve the generalizability of the results.

This paper hopes to initiate a relatively new research direction focusing on clickbait consumption. Going forward, interested scholars may investigate the extent to which urgency and complexity of the task at hand could affect users' likelihood to fall for clickbaits. It would be worthwhile to explore whether prior experiences with clickbaits would feature in the equation. Future research could also investigate the extent to which this study could be replicated in other contexts such as binge watching on YouTube and Netflix prompted by video recommendations. Hopefully, research in these areas will strengthen users' defence mechanism against digital temptations in the long run.

Aslib Journal of Information Management

References

Aharony, N. (2015), "Why do students use What's App? – an exploratory study", *Aslib Journal of Information Management*, Vol. 67 No. 2, pp. 136-158.

Aiken, L. S. and West, S. G. (1991), *Multiple regression: Testing and interpreting interactions*, Newbury Park, Sage.

Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50, pp. 179–211.

Agrawal, A. (2016), "Clickbait detection using deep learning", *Proceedings of the IEEE International Conference on Next Generation Computing Technologies,* New York, NY, pp. 268-272.

Biyani, P., Tsioutsiouliklis, K. and Blackmer, J. (2016), "'8 Amazing Secrets for Getting More Clicks': Detecting clickbaits in news streams using article informality", *Proceedings of the AAAI Conference on Artificial Intelligence*, pp. 94-100.

Blom, J. N. and Hansen, K. R. (2015), "Click bait: Forward-reference as lure in online news headlines", *Journal of Pragmatics*, Vol. 76, pp. 87-100.

Bol, N., Helberger, N., & Weert, J. C. (2018), "Differences in mobile health app use: A source of new digital inequalities?", *The Information Society*, Vol. 34 No. 3, pp. 183-193.

Bourgonje, P., Schneider, J. M. and Rehm, G. (2017), "From clickbait to fake news detection: An approach based on detecting the stance of headlines to articles", *Proceedings of the EMNLP Workshop: Natural Language Processing meets Journalism*, pp. 84-89.

BrÅten, I., StrØmsØ, H. I. and Samuelstuen, M. S. (2005), "The relationship between Internet-specific epistemological beliefs and learning within Internet technologies", *Journal of Educational Computing Research*, Vol. 33 No. 2, pp. 141-171.

Bucklin, R. E. and Sismeiro, C. (2009), "Click here for Internet insight: Advances in clickstream data analysis in marketing", *Journal of Interactive Marketing*, Vol. 23 No. 1, pp. 35-48.

Castillo, C., El-Haddad, M., Pfeffer, J. and Stempeck, M. (2014), "Characterizing the life cycle of online news stories using social media reactions", *Proceedings of the ACM Conference on Computer supported Cooperative Work & Social Computing*, New York, NY, pp. 211-223.

Chakraborty, A., Paranjape, B., Kakarla, S. and Ganguly, N. (2016), "Stop clickbait: Detecting and preventing clickbaits in online news media", *Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, New York, NY, pp. 9-16.

Aslib Journal of Information Management

Chen, Y., Conroy, N. J., and Rubin, V. L. (2015), "Misleading online content: Recognizing clickbait as false news", *Proceedings of the ACM on Workshop on Multimodal Deception Detection*, New York, NY, pp. 15-19.

Choi, E. and Shah, C. (2016), "User motivations for asking questions in online Q&A services", *Journal of the Association for Information Science and Technology*, Vol. 67 No. 5, pp. 1182-1197.

Choi, J. (2016), "Why do people use news differently on SNSs? An investigation of the role of motivations, media repertoires, and technology cluster on citizens' news-related activities", *Computers in Human Behavior*, Vol. 54, pp. 249-256.

Chua, A. and Banerjee, S. (2017), "To share or not to share: The role of epistemic belief in online health rumors", *International Journal of Medical Informatics*, Vol. 108, pp. 36-41.

Das, D. and Clark, A. (2019), "Construct of sarcasm on social media platform", *Proceedings of the IEEE International Conference on Humanized Computing and Communication*, New York, NY, pp. 106-113.

Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319–340.

Flores, W., Chen, J. C. V. and Ross, W. H. (2014), "The effect of variations in banner ad, type of product, website context, and language of advertising on Internet users' attitudes", *Computers in Human Behavior*, Vol. 31, pp. 37-47.

Geçkil, A., Müngen, A. A., Gündoğan, E., and Kaya, M. (2020), "Detecting clickbait on online news sites", In *Putting Social Media and Networking Data in Practice for Education, Planning, Prediction and Recommendation, Springer, Cham*, pp. 199-211.

Gauzente, C. (2010), "The intention to click on sponsored ads—A study of the role of prior knowledge and of consumer profile", *Journal of Retailing and Consumer Services*, Vol. 17 No. 6, pp. 457-463.

Gross, M., and Latham, D. (2012), "What's skill got to do with it?: Information literacy skills and self-views of ability among first-year college students", *Journal of the American Society for Information Science and Technology*, Vol. 63 No. 3, pp. 574-583.

Helsper, E. and Gerber, M. M. (2012), "The plausibility of cross-national comparisons of Internet use types", *The Information Society*, Vol. 28 No. 2, pp. 83-98.

Hillesund, T. (2010), "Digital reading spaces: How expert readers handle books, the Web and electronic paper", *First Monday*, Vol. 15 No. 4. doi:10.5210/fm.v15i4.2762

Hofer, B. K. (2004), "Epistemological understanding as a metacognitive process: Thinking aloud during online searching", *Educational Psychologist*, Vol. 39 No. 1, pp. 43–55.

Idemudia, E. C. and Jones, D. R. (2015), "An empirical investigation of online banner ads in online market places: The cognitive factors that influence intention to click",

Aslib Journal of Information Management

International Journal of Information Systems and Management, Vol. 1 No. 3, pp. 264-293.

Kahai, S. S. and Cooper, R. B. (2003), "Exploring the core concepts of media richness theory: The impact of cue multiplicity and feedback immediacy on decision quality", *Journal of Management Information Systems*, Vol. 20 No. 1, pp. 263-299.

Kammerer, Y., and Gerjets, P. (2012), "Effects of search interface and Internet-specific epistemic beliefs on source evaluations during Web search for medical information: An eye-tracking study", *Behaviour & Information Technology*, Vol. 31 No. 1, pp. 83-97.

Kammerer, Y., Bråten, I., Gerjets, P. and Strømsø, H. I. (2013), "The role of Internet-specific epistemic beliefs in laypersons' source evaluations and decisions during web search on a medical issue", *Computers in Human Behavior*, Vol. 29 No. 3, p. 1193-1203.

Karlsson, M., and Clerwall, C. (2013), "Negotiating professional news judgment and 'clicks': Comparing tabloid, broadsheet and public service traditions in Sweden", *Nordicom Review*, Vol. 34 No. 2, pp. 65-76.

Katz, E., Blumler, J. G. and Gurevitch, M. (1974), "Uses and gratifications research", *The Public Opinion Quarterly*, Vol. 37, pp. 509-523.

Keib, K., Espina, C., Lee, Y., Wojdynski, B.W., Choi, D. and Bang, H. (2018), "Picture this: The influence of emotionally valenced images, on attention, selection, and sharing of social media news", *Media Psychology*, Vol. 21 No. 2, pp. 202-221.

Kim, D. H., Spiller, L. and Hettche, M. (2015), "Analyzing media types and content orientations in Facebook for global brands", *Journal of Research in Interactive Marketing*, Vol. 9 No. 1, pp. 4-30.

Kormelink, T. G., and Meijer, I. C. (2018), "What clicks actually mean: Exploring digital news user practices", *Journalism*, Vol. 19 No. 5, pp. 668-683.

Kim, S., Youn, S. and Yoon, D. (2019), "Consumers' responses to native vs. banner advertising: Moderation of persuasion knowledge on interaction effects of ad type and placement type", *International Journal of Advertising*, Vol. 38 No. 2, pp. 207-236.

Lee, C. S. and Ma, L. (2012), "News sharing in social media: The effect of gratifications and prior experience", *Computers in Human Behavior*, Vol. 28 No. 2, pp. 331-339.

Lee, J. and Hong, I. B. (2016), "Predicting positive user responses to social media advertising: The roles of emotional appeal, informativeness, and creativity", *International Journal of Information Management*, Vol. 36 No. 3, pp. 360-373.

Levy, S. and Gvili, Y. (2015), "How credible is e-word of mouth across digital-marketing channels? The roles of social capital, information richness, and interactivity", *Journal of Advertising Research*, Vol. 55 No. 1, pp. 95-109.

Aslib Journal of Information Management

Lin, J. (2014), "The effects of gratifications on intention to read citizen journalism news: The mediating effect of attitude", *Computers in Human Behavior*, Vol. 36, pp. 129-137.

Lo, S. K. and Lie, T. (2008), "Selection of communication technologies—A perspective based on information richness theory and trust", *Technovation*, Vol. 28 No. 3, pp. 146-153.

Loke, C., Foo, S., & Majid, S. (2019). Derivations of design concepts for video search interfaces. *Aslib Journal of Information Management*, Vol. 71 No. 4, pp. 458-479.

Malik, A., Dhir, A. and Nieminen, M. (2016), "Uses and gratifications of digital photo sharing on Facebook", *Telematics and Informatics*, Vol. 33 No. 1, pp. 129-138.

Mangen, A. (2008), "Hypertext fiction reading: haptics and immersion", *Journal of Research in Reading*, Vol. 31 No. 4, pp. 404-419.

O'Keefe, D. J. (2003), "Message properties, mediating states, and manipulation checks: Claims, evidence, and data analysis in experimental persuasive message effects research", *Communication Theory*, Vol. 13, pp. 251–274.

Pandey, S. and Kaur, G. (2018), "Curious to click It?-Identifying clickbait using deep learning and evolutionary algorithm", *Proceedings of the IEEE International Conference on Advances in Computing, Communications and Informatics, New York, NY*, pp. 1481-1487.

Park, N., Kee, K. F. and Valenzuela, S. (2009), "Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes", *Cyber Psychology & Behavior*, Vol. 12 No. 6, pp. 729-733.

Pechmann, C. (1992), "Predicting when two-sided ads will be more effective than one-sided ads: The role of correlational and correspondent inferences", *Journal of Marketing Research*, Vol. 29, pp. 441–453.

Pieters, R. and Wedel, M. (2004), "Attention capture and transfer in advertising: Brand, pictorial, and text-size effects", *Journal of Marketing*, Vol. 68 No. 2, pp. 36-50.

Potthast, M., Gollub, T., Komlossy, K., Schuster, S., Wiegmann, M., Fernandez, E. P. G., ... and Stein, B. (2018), "Crowdsourcing a large corpus of clickbait on Twitter", *Proceedings of the ACL International Conference on Computational Linguistics*, pp. 1498-1507.

Rony, M. M. U., Hassan, N. and Yousuf, M. (2017), "Diving deep into clickbaits: Who use them to what extents in which topics with what effects?", *Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, New York, NY*, pp. 232-239.

Rothrock, R. A. (2018). Digital resilience: What you can do—Now. Retrieved October 5, 2020 from https://www.redseal.net/files/PDFs/DigitalResilience-WhatYouCanDoNow.pdf

Aslib Journal of Information Management

Rubin, A. M. (2002), "The uses-and-gratifications perspective on media effects", In: Bryant, J., Zillmann, D. (Eds.), *Media effects: Advances in theory and research* (2nd ed.), Erlbaum Association, New York, pp. 525-548.

Thiel, K. (2018). Avoiding clickbait. Cavendish Square Publishing.

Tseng, F. C., Cheng, T., Li, K. and Teng, C. (2017), "How does media richness contribute to customer loyalty to mobile instant messaging?", *Internet Research*, Vol. 27 No. 3, pp. 520-537.

Ulloa, L. C., Mora, M.C., Pros, R.C. and Tarrida, A.C. (2015), "News photography for Facebook: Effect of images on the visual behavior of readers in three simulated newspaper formats", *Information Research*, Vol. 20 No. 1, pp. 315–333.

Wang, Q., Cui, X. and Huang, L. and Dai, Y. (2016), "Seller reputation or product presentation? An empirical investigation from cue utilization perspective", *International Journal of Information Management*, Vol. 36 No. 3, pp. 271-283.

Wei, P. S. and Lu, H. P. (2014), "Why do people play mobile social games? An examination of network externalities and of uses and gratifications", *Internet Research*, Vol. 24 No. 3, pp. 313-331.

Zhang, K., Min, Q., Liu, Z. and Liu, Z. (2016), "Understanding microblog continuance usage intention: an integrated model", *Aslib Journal of Information Management*, Vol. 68 No. 6, pp. 772-792.

Zhang, L. and Zhang, W. (2013), "Real-time Internet news browsing: Information vs. experience-related gratifications and behaviors", *Computers in Human Behavior*, Vol. 29 No. 6, pp. 2712-2721.

Aslib Journal of Information Management

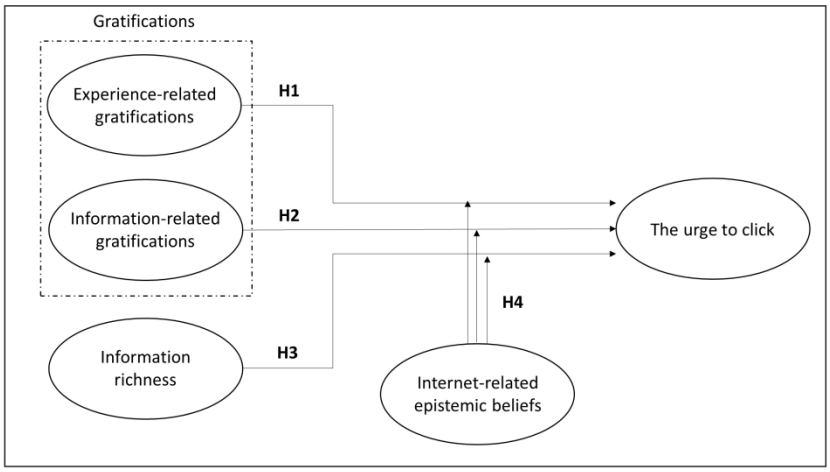
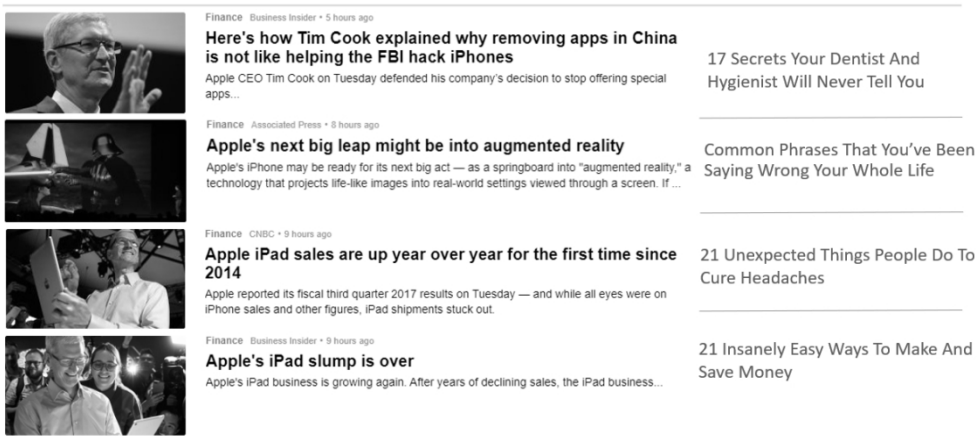
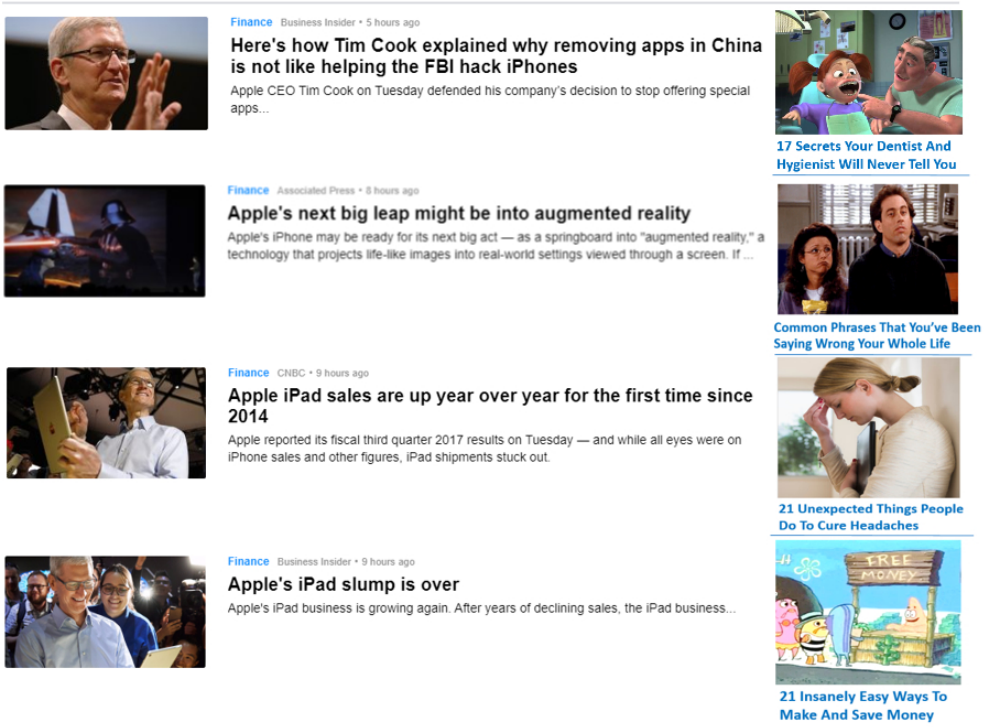


Figure 1. Theoretical Framework



Clickbaits presented through text-only hyperlinks



Clickbaits presented through thumbnail hyperlinks