

Association for Information Systems

AIS Electronic Library (AISeL)

BLED 2019 Proceedings

BLED Proceedings

2019

Gratifications and Credibility Judgment of Online Information for Task Completion – A Comparison of Students and Workers

Mathupayas Thongmak

Follow this and additional works at: <https://aisel.aisnet.org/bled2019>

This material is brought to you by the BLED Proceedings at AIS Electronic Library (AISeL). It has been accepted for inclusion in BLED 2019 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Gratifications and Credibility Judgment of Online Information for Task Completion – A Comparison of Students and Workers

MATHUPAYAS THONGMAK

Abstract This study aims to examine the impact of U&G determinants on intention to search online information and to investigate the effect of the intention to intention to evaluate quality of information and its corresponding behaviour between two user groups: students and workers who use the Internet information to complete their tasks. Structural equation modeling is utilized to assess the research model. Findings reveal U&G factors that are important to full-time students and full-time employees. The results also show the differences between the two groups in terms of the effect of a U&G factor and intention to search on its tentative dependent factor. The comparison between students and employees, the exploration of nascent dimensions of U&G theory, and the focus of the task-fulfillment purpose provide insights to educators, managers, and policy makers on how to enhance the credibility of information used in school or office works.

Keywords: • Internet Information Credibility • Uses and Gratifications • Theory of Planned Behaviour • Behavioural Intention • Credibility Judgment •

CORRESPONDENCE ADDRESS: Mathupayas Thongmak, PhD, Associate Profesor, Thammasat University, Thammasat Business School, Bangkok, Thailand, e-mail: mathupayas@tbs.tu.ac.th.

DOI <https://doi.org/10.18690/978-961-286-280-0.9>
Dostopno na: <http://press.um.si>

ISBN 978-961-286-280-0

1 Introduction

Information technology (IT) such as the Internet could improve both internal efficiency and personal productivity for a company (Antonelli, Almeida, Espejo, & Longhi, 2013). The Internet is not only used for work but is also used in school practices since it changes both formal and informal educational opportunities for students by providing greater autonomy in their learning tasks (Quintana, Pujol, & Romani, 2012). Information seeking is a purposive searching for information to satisfy some goals (Rieh & Hilligoss, 2008). Everyone has to understand how to search and apply relevant information for problem solving and decision making (Lu & Lee, 2012). For instance, students generally used the Internet largely for school purposes (Metzger, Flanagin, & Zwarun, 2003). Workers search and analyse information from multiple sources and use information to make decisions or generate new ideas (Silva, 2009). The Internet is a valuable e-resource for students as well as employees in their information seeking due to an abundance of information available online (Catalano, 2013; Shanahan, 2008). It is also a medium for course delivery to students and workers in need of lifelong learning (Cereijo, 2006). However, not all information on the web is high quality and the quality control of web content is generally insufficient. Thus, web credibility has drawn more attention from researchers (Liao & Fu, 2014; Quintana et al., 2012; Shanahan, 2008; Tanaka et al., 2010).

Individuals try to achieve efficient and effective performance in information seeking, according to information-foraging theory (Sharit, Taha, Berkowsky, Profita, & Czaja, 2015). But individuals with different backgrounds and intention use various approaches to interact with the web and face different problems in information seeking (Athukorala, Glowacka, Jacucci, Oulasvirta, & Vreeken, 2016; Zhou, 2014). For example, students' ability to search and retrieve information are varied widely (Zhou, 2014). They sometimes lack of ability to distinguish inaccurate or biased information from other credible sources (Metzger et al., 2003). People in Generation Y have high capabilities in technology, but have poor capacity to judge the credibility of Internet information (White & Kiegaldie, 2011). Young users frequently fail to express their needs of information and experience the difficulty in credibility judgment of Internet information (Rieh & Hilligoss, 2008). Older adults face difficulties in verifying the website credibility and recalling its source (Robertson-Lang, Major, & Hemming, 2011). Therefore, understanding online information behaviour,

particularly search and verification behaviour is important (Flanagin & Metzger, 2007; Metzger et al., 2003). Katz, Haras, and Blaszczyński (2010) also point that information literacy of college students and workers should be assessed to help instructors identify learners' information literacy need.

Information behavior is a set of activities engaged by a person when identifying the need of information, searching for information and using or transferring information (Catalano, 2013). Online information search process consists of identifying search goals, locating suitable information sources, selecting relevant information, and synthesizing information from multiple sources (Zhou, 2014). The Uses and Gratifications (U&G) theory explain the reasons that individuals choose a particular medium such as virtual community, e-book, and social network sites over others (Ifinedo, 2016; Liu, Cheung, & Lee, 2010; Shin, 2011). Uses and gratifications are appropriate to help understanding relationships between users and technologies, especially the Internet, because web users are goal-directed and are aware of the needs they trying to satisfy (Kaye & Johnson, 2004; Papacharissi & Rubin, 2000). Various components of the Internet such as bulletin boards, e-mail, and websites are functionally different from each other. Therefore, people's needs and gratifications of these components may be different (Ifinedo, 2016; Kaye & Johnson, 2004).

Although a number of studies in the literature have examined the U&G, recent adoption of U&G research to the Internet are incomplete, for instance, lacking of the exploration of an individual's perception of Internet information and credibility judgment across diverse information tasks. In addition, little prior research has investigated the information seeking and credibility judgment of young people (Rieh & Hilligoss, 2008). Only few studies have paid attention to credibility evaluation in the information-seeking process (Metzger et al., 2003; Rieh & Hilligoss, 2008). None of them has focused on the perceptions among different user groups or students in particular (Metzger et al., 2003). In addition, only four to five research has examined Thai people's behaviour on internet-related topics (Panjakajornsak et al., 2017). Therefore, this study explores the different aspects of the U&G framework with an important information seeking purpose: searching online information for task completion and tries to answer these research questions.

RQ1: How strongly do motivational constructs according to the uses and gratifications theory impact the information-searching intention of students and workers?,

RQ2: Do intention to search for Internet information directly and indirectly predict the students' and workers' credibility judgement behaviour (through information-judgment intention)?, and

RQ3: Do these key factors differently affect students' behaviours and workers' behaviours?

2 Related Research

Niehaves and Plattfaut (2014) studied elderly people's intention to use the Internet and its influencing factors using two alternative theories: the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Model of Adoption of Technology in Households (MATH). Findings revealed that constructs from both theories could explain more than 70 percent of Internet use intention variance. Liao and Fu (2014) conducted laboratory studies to investigate how credibility cues differently affects younger and older consumers of online health information. Findings indicated that credibility cues in user reviews or message contents could support credibility judgments of older adults. Sharit et al. (2015) investigated health information search via the Internet of adults with ages between 18 to 85 years old. Internet experience had no impact on search performance. In addition, older participants used longer search times and fewer amounts of search than younger participants. Chevalier, Dommes, and Marquié (2015) examined age-related differences in search performance and strategies using Google. Findings showed that older participants gained lower accurate and applied less efficient search strategies than younger counterparts did. Moreover, younger participants tried to improve their strategies more and more. Athukorala et al. (2016) explored indicators characterizing exploratory search behaviour. Three exploratory search tasks were comparison, knowledge acquisition, and planning. The indicators classifying exploratory search behaviour best were query length, maximum scroll depth, and task completion time. S. H. Wang (2017) studied the effects of technology attractiveness, medical credibility, and diversified medical information sources on people who had never used a web-based medical service for health information before. Perceived ease of use and perceived usefulness significantly increased users' behavioural intention. Bao, Hoque, and Wang (2017) tried to identify the antecedents of adult children's

intention to use Internet health information for their aged parents. Findings indicated that attitude, subjective norm, perceived behavioral control, and risk were significant determinants of intention to use online health information whereas trust was not. Sirdeshmukh, Ahmad, Khan, and Ashill (2018) proposed a conceptual model regarding search engine performance. Functional performance significantly influenced search engine value, but aesthetic performance did not affect search engine value.

3 The Research Hypotheses

3.1 Determinants of Online Information Search Intention

The U&G theory were applied variously in the literature. For example, Information, convenience, entertainment, and social interaction factors were applied to the Internet study, while convenient entertainment, convenient info seeking, co-viewing, and social interaction factors were adopted in the study about YouTube (Liu et al., 2010). The U&G factors such as information were also explored as influences (motivations) of TV viewing and online user-shared video use (Bondad-Brown, Rice, & Pearce, 2012). Convenient information seeking was a convenient and quick way to find an update or in-depth information about the interest topics. Internet technologies such as blogs also offered vast dimension of information and provided links to aggregate news or experts (Kaye, 2010). Students mostly used the web for doing research or getting information (Metzger et al., 2003). Information seeking was one of factors received the highest mean scores as computer-user motives to use the Internet. It also significantly affected e-mail use and web browsing. Convenience was a remarkable factor which was the only significant factor driving the duration of the Internet use. It significantly predicted newsgroup or bulletin board use as well (Papacharissi & Rubin, 2000). Purposive value in terms of accomplishing informational or helpful purposes were believed to be a positive driver of students' intention to use online social networking systems (Ifinedo, 2016). Information seeking and convenience were two factors tended to associate with the Internet resources for political information (Kaye & Johnson, 2004). According to the literature research, easy to use was one of the most influential factors for website adoption (Liu et al., 2010). Web reliance was significantly impacted by the convenience of using the web (Johnson & Kaye, 2002). Effort and speed were the most important factors in choosing information sources.

Electronic materials were therefore preferred if they were faster or easier to access (Catalano, 2013). Ease of use was proposed to be positively related to search effectiveness, user satisfaction, and perceived benefit of online information search (Kulviwat, Guo, & Engchanil, 2004). Consumers tended to find products more easily and more productive when they perceived the website to be easy to use (Panjakajornsak et al., 2017). Fast and easy to search information was also the search engine value which positively associated with users' satisfaction with search engine (Sirdeshmukh et al., 2018). Therefore, the following hypotheses were suggested.

Hypothesis 1a: A full-time student's convenient information seeking positively affects his/ her intention to search for online information to fulfil his/ her task.

Hypothesis 1b: A full-time worker's convenient information seeking positively affects his/ her intention to search for online information to fulfil his/ her task.

Anti-traditional media sentiment was a reason people connecting to IT such as blogs because they wanted to independent from distasteful or biased traditional media (Kaye, 2010). Consumers were more likely to try a new medium when they were not satisfied with the current media (Jung, Chan-Olmsted, Park, & Kim, 2012). Flanagan and Metzger (2000) proposed that highly experienced users greater perceived the Internet as a credible information source, compared to conventional media such as TV, newspapers, or magazines than users with lower Internet experience. Johnson and Kaye (2002) believed that the credibility of traditional media would be positively driven by users' reliance on the Web and convenience of using the Web. Moreover, they proposed that reliance on the Web would be positively impacted by reliance on the traditional media, and reliance on traditional media such as newspaper, radio would be affected by the convenience of using the Web (Johnson & Kaye, 2002). The gratifications of printed media users and users' perceived need of printed media were positively related to e-book readers' awareness, interests, and their intention to use (Jung et al., 2012). The internet could satisfy users more with its broadest niche on users' gratifications than the traditional media (Dimmick, Chen, & Li, 2004). Therefore, the following hypotheses were proposed.

Hypothesis 2a: A full-time student's anti-traditional media sentiment positively affects his/ her intention to search for online information to fulfil his/ her task.

Hypothesis 2b: A full-time worker's anti-traditional media sentiment positively affects his/ her intention to search for online information to fulfil his/ her task.

The attractiveness of technology was also positively related to the behavioral intention in the context of web-based medical services (S. H. Wang, 2017). Aesthetic performance in the aspect of design attractiveness was a second major driver of search engine value. Perceived aesthetic performance was also proposed to positively affect the search engine value (Sirdeshmukh et al., 2018). Internet ambiance, adapted from the blog ambiance of Kaye (2010), were the enjoyment of users affiliating with a specific content. People preferred the good writing of online content and they found the content interesting. Media such as the Internet provided a wide range of content and gratification opportunities. Perceived content was one of the attributes of a medium, presenting gratification opportunities. A medium offering a greater array of content types better provided gratification opportunities to its audience (Dimmick et al., 2004). Perceived content quality had a positive impact on e-book adoption (Shin, 2011). Perceived value was proposed to be a direct determinant of behavioral intention (Panjakajornsak et al., 2017). Relevance (content) was proposed to be a driver of the Internet usage in terms of total using hours and activity levels (Nayak, Priest, & White, 2010). Information quality gratification was a main determinant of a media usage according to U&G theory. Information quality significantly predicted behavioral intention to engage in social commerce (Sharma & Crossler, 2014). Content gratification in terms of disconfirmation of self-documentation and disconfirmation of information sharing significantly increased Twitter users' level of satisfaction (Liu et al., 2010). Therefore, the following hypotheses were postulated.

Hypothesis 3a: A full-time student's Internet ambiance positively affects his/ her intention to search for online information to fulfil his/ her task.

Hypothesis 3b: A full-time worker's Internet ambiance positively affects his/ her intention to search for online information to fulfil his/ her task.

3.2 Online Information Search Intention and Credibility Judgement Intention

Students should be able to search and retrieve information from appropriate resources and evaluate obtained information, particularly information from the Internet (Shanahan, 2008). Credibility played a mediator role between technology attractiveness and patients' behavioural intention with regard to a web-based medical service (S. H. Wang, 2017). According to goal-sub goal relationships, plans were subject to hierarchical processes in which events happened in sequences: information search intention and intention to use the Internet to purchase, for instance. Intention to use the Internet to search product information also strongly lead to a positive purchase intention and mediated the relationships between purchase intention and other factors such as attitude toward online shopping, perceived behavioural control, and previous Internet shopping experience (Shim, Eastlick, Lotz, & Warrington, 2001). After people sought for information resources as the result of a predictive judgment, they would perform an evaluative judgment. For instance, they evaluated that whether the content was interesting, relevant, or trustworthy, how reliable or good Internet information appeared to be, or whether the website was official. This process would be repeated until the evaluative judgment met the expectation about the predictive judgment (Rieh & Hilligoss, 2008). Common criteria for credibility judgments were information itself (e.g. organization, content, breadth, depth, type), source (e.g. reputation), and presentation (e.g. design, layout, graphics, navigability, functionality, readability) (Rieh & Hilligoss, 2008). Therefore, the following hypotheses were developed.

Hypothesis 4a: A full-time student's intention to search for online information positively affects his/ her intention to judge online information to fulfil his/ her task.

Hypothesis 4b: A full-time worker's intention to search for online information positively affects his/ her intention to judge online information to fulfil his/ her task.

3.3 Determinants of Credibility Judgement Behavior

The Theory of Planned Behaviour (TPB) posited that intention to perform a behaviour caused a behaviour (Shim et al., 2001). Behavioural intention was the most important construct in predicting the decision to perform a certain behaviour (Al-Debei, Al-Lozi, & Papazafeiropoulou, 2013). It also was a

significant motivator of continuance participation behaviour on Facebook (Al-Debei et al., 2013). Behavioural intention also had a significant impact on adult children's behaviour to adopt online health information for their aged parents (Bao et al., 2017). Motivation to search was proposed to be a positive influence of online information search (Kulviwat et al., 2004; Liao & Fu, 2014). The searching for information and the judgment of retrieved information were two core information processes (Chaxel, Russo, & Kerimi, 2013). Evaluating obtained information from the Internet was complex, including multiple criteria. The increase of multiple evaluation criteria for Internet information could raise the likelihood students using high quality information sources (Shanahan, 2008). Information, source, and presentation played the most vital role in credibility judgment that could be identified from participants' behavior and experience (Rieh & Hilligoss, 2008). Therefore, the following hypotheses were posited.

Hypothesis 5a: A full-time student's intention to search for online information positively affects his/ her credibility judgement behaviour.

Hypothesis 5b: A full-time worker's intention to search for online information positively affects his/ her credibility judgement behaviour.

Hypothesis 6a: A full-time student's intention to judge online information positively affects his/ her credibility judgement behaviour.

Hypothesis 6b: A full-time worker's intention to judge online information positively affects his/ her credibility judgement behaviour.

3.4 Differences between Full-Time Students and Full-Time Workers

When comparing between the student and employee groups, the impact (path coefficients) of perceived hedonic usefulness on intention to use IT was different across the two groups (Gu, Fan, Suh, & Lee, 2010). Compared to the non-student group, students perceived that all information channels were more credible than non-student samples (Metzger et al., 2003). NetGen respondents had the highest and Old Boomer respondents had the lowest means across all online users-shared video (OUSV) motivations. The overall OUSV motivations in the younger generations (NetGen and GenX) were generally higher than Old Boomers. Regarding TV viewing, information motivation of Silent/ GI generation was higher than information motivation of GenX (Bondad-Brown et al., 2012). There was a significant negative association between the age of adopters and non-adopters and broadband adoption. In addition, there was a

significant correlation between the type of occupation (household occupation) of adopters and non-adopters and broadband adoption (Dwivedi & Lal, 2007).

Age was negatively related to awareness, interest, and intention to use e-book, while education was positively related to awareness, interest, and intention to use e-book (Jung et al., 2012). Age was significantly and negatively determined the use of websites for convenience, the use of bulletin boards or e-mailing list for entertainment/social needs and for guidance purposes. Education significantly and positively associated with the motivations to use Internet resources such as website, bulletin board, e-mailing list, and chat for political information (Kaye & Johnson, 2004). There were significant differences in age and education means regarding technophobia and technophilia except for technophilia about education. Younger people had a high probability of being the Internet users, compared to older people. Education also had a strong influence on the Internet usage (Donat, Brandtweiner, & Kerschbaum, 2009). Younger people viewed these media more credible than older people. Moreover, respondents who were less educated and had lower incomes believed online radio news more credible (Johnson & Kaye, 2002). Young people aged 18 to 34, computer owners, well-educated, and with English language skills had more possibility to access the Internet (Panjakajornsak et al., 2017).

Hypothesis 7: Antecedent factors affecting credibility judgment behaviour will result in several differences between full-time students and full-time workers.

4 Methodology

4.1 Questionnaire Development

Table 1. Sources of questionnaire items.

Construct	An Example Question	Sources
U&G Convenient Information Seeking	I use online sources because... to get information quickly (5- point Likert-type scale)	Adapted from Kaye (2010)

Construct	An Example Question	Sources
U&G Anti-traditional Media Sentiment	I use online sources because... to avoid conservative sources bias (5-point Likert-type scale)	Adapted from Kaye (2010)
U&G Internet Ambiance	I use online sources because... because of the good writing of Internet information (5-point Likert-type scale)	Adapted from Kaye (2010)
Intention to Search for Information	Please specify your level of intention when searching information from the Internet... Searching for new learning materials (5-point Likert-type scale)	Adapted from Lee and Tsai (2011) and Limberg and Sundin (2006)
Intention to Judge Online Information	Please specify your level of intention when verifying information from the Internet... Evaluate information factor (content quality) before use (5-point Likert-type scale)	Adapted from Rieh and Hilligoss (2008), Lee and Tsai (2011), Limberg and Sundin (2006) and (Flanagin & Metzger, 2000)
Credibility Judgement Behavior	Regarding information for studying/ working purposes, how many times have you checked the quality of information from 10 times lately? (ratio scale)	Adapted from Kaye and Johnson (2004), Metzger et al. (2003), (Nayak et al., 2010)

The online questionnaire was divided into four sections. The first section was designed to ask about the uses and gratifications of information from the Internet. The second section was designed to ask about searching for online information. The third section was designed to ask about the credibility judgment of the Internet information before use. The last section collected demographic data of respondents. The details and references of questionnaire development were described in Table 1.

4.2 Data Collection

This study is a sub-project of a project titled INFORMATION VERIFICATION. The online questionnaire was pre-tested and revised. The final questionnaire was sent to full-time students less than 35 years of age and full-time workers more than or equal 20 years of age. Two research assistants and their teams helped to collect the data using the Google form. Finally, four hundred and fifty three questionnaires were ready for further analysis. Of all data, 243 questionnaires were gathered from full-time students and 210 questionnaires were collected from full-time workers.

5 Data Analysis

5.1 Descriptive Statistics

Table 2. Sample demographics.

	Full-Time Students (n=243)	Full-Time Workers (n=210)
Gender		
Male	80 (32.9%)	59 (28.1%)
Female	163 (67.1%)	151 (71.9%)
Age (years old)		
< 15	10 (4.1%)	0 (0.0%)
15 – 19	86 (35.4%)	0 (0.0%)
20 – 24	142 (58.4%)	16 (7.6%)
25 – 29	5 (2.1%)	76 (36.2%)
30 – 34	0 (0.0%)	71 (33.8%)
35 – 39	0 (0.0%)	28 (13.3%)
>=40	0 (0.0%)	19 (9.0%)
Educational Level (Studying/ Graduated)		
Junior high school	17 (7.0%)	20 (9.5%)
Senior high school	17 (7.0%)	

	Full-Time Students (n=243)	Full-Time Workers (n=210)
High vocational certificate	6 (2.5%)	
Bachelor degree	193 (79.4%)	105 (50%)
Master degree	10 (4.1%)	85 (40.5%)
Doctoral degree		0 (0.0%)
Post-doctoral degree		0 (0.0%)
Internet Access Device		
Mobile phone	208 (85.6%)	193 (91.9%)
Tablet	66 (27.2%)	76 (36.2%)
Notebook/ Netbook	188 (77.4%)	147 (70.0%)
Desktop computer	109 (44.9%)	123 (58.6%)
Frequency of Judging Internet Information Credibility (from 10 times)		
Mean	5.05	5.93
SD	2.721	2.930

The demographics, presented in Table 2, showed that there were more females than males in both groups (full-time students and full-time workers). The majority of full-time students were in age between 20 and 24 years old, while the majority of full-time workers were at age between 30 and 34 years old. Full-time students were studying at the bachelor level. Full-time workers were graduated from the bachelor degree. The main devices that both full-time students and workers used to access the Internet was their mobile phones. From 10 times of acquiring information from the Internet, the average credible judgments of online information were slightly more frequent among full-time workers than full-time students.

5.2 Measurement Model

A Confirmatory Factor Analysis (CFA) was conducted to validate the convergent and discriminant validity of latent variables and corresponding items from literature. Convergent validity was evaluated by checking each item loadings for each corresponding factor was above the recommended value of 0.50 (Dubihlela & Dhurup, 2015; Dunn, Seaker, & Waller, 1994). For both university student sample and full-time worker sample, factor loadings were above 0.50 and were significant at the 0.001 level. The internal consistency of each factor was evaluated by Cronbach's alpha. As shown in Table 3 and Table 4, the results demonstrated acceptable internal consistency, based on the ideal threshold of 0.7 and an acceptable threshold of 0.5 (Tillmann & Silcock, 1997) or 0.6 (Churchill Jr, 1979; Rahimnia & Hassanzadeh, 2013). Composite reliability (CR) exceeded the suggested threshold of 0.7 (Dubihlela & Dhurup, 2015; Horng & Chen, 1998; Jum, 1978) and minimum threshold of 0.6 (Bagozzi & Yi, 1988; Fornell & Yi, 1992; Jahanshahi, Rezaei, Nawaser, Ranjbar, & Pitamber, 2012; Tsao & Chang, 2010) for factors in both samples.

As indicated in Table 3 and Table 4, the average variance extracted values (AVEs) were above the recommended cut-off value of 0.6 (Bagozzi & Yi, 1988; Tsao & Chang, 2010) and acceptable cut-off value of 0.4 (Adeleke, Bahaudin, & Kamaruddeen, 2015; Dubihlela & Dhurup, 2015; Li, Zhao, Tan, & Liu, 2008; Mohamed & Anisa, 2012), showing reliability for all items of each factor. Discriminant validity was assessed by comparing AVEs of two factors with the squared correlation estimates to evaluate whether constructs differ from each other. For all comparisons in both samples, AVEs were higher than the square of correlations as presented in Table 3 and Table 4, indicating good discriminant validity. In addition, common benchmark criteria were satisfied by the goodness-of-fit measures (Bentler, 2006; Bollen, 1987; Hooper, Coughlan, & Mullen, 2008; Kline, 2010; Lomax & Schumacker, 2004; Schermelleh-Engel, Moosbrugger, & Müller, 2003; Schreiber, Nora, Stage, Barlow, & King, 2006; Y. S. Wang, Wu, & Wang, 2009), showing the adequate fit of the research model, as described in Table 5.

Table 3. Results of the confirmatory factor analysis and inter-construct correlation matrix for full-time students

Construct	No. of items	CR	AVE	Cronbach's alpha	Mean	SD	UG_CIS	UG_AT	UG_IA	LS	LJ
U&G Convenient Information Seeking	3	0.852	0.657	0.803	4.34	0.69	0.811				
U&G Anti-traditional Media Sentiment	3	0.866	0.684	0.801	2.98	0.93	0.112	0.827			
U&G Internet Ambiance	3	0.676	0.416	0.573	3.49	0.69	0.521	0.523	0.650		
Intention to Search for Information	3	0.787	0.553	0.770	3.73	0.64	0.548	0.259	0.647	0.744	
Intention to Judge Online Information	3	0.856	0.665	0.832	3.73	0.66	0.354	0.285	0.516	0.638	0.815

Table 4. Results of the confirmatory factor analysis and inter-construct correlation matrix for full-time workers

Construct	No. of items	CR	AVE	Cronbach's alpha	Mean	SD	UG_CIS	UG_AT	UG_IA	I_S	I_J
U&G Convenient Information Seeking	3	0.893	0.737	0.879	4.54	0.62	0.858				
U&G Anti-traditional Media Sentiment	3	0.905	0.762	0.867	3.10	1.01	-0.034	0.873			
U&G Internet Ambiance	3	0.779	0.541	0.685	3.73	0.70	0.449	0.470	0.736		
Intention to Search for Information	3	0.809	0.585	0.762	3.97	0.61	0.500	0.120	0.465	0.765	
Intention to Judge Online Information	3	0.871	0.693	0.848	3.84	0.70	0.349	0.216	0.335	0.659	0.832

5.2 Structural Equation Model Analysis

Table 5. Fit indices for measurement models and structural models

Goodness-of-fit measure	Recommend Value	Measurement Model of Full-Time Students	Measurement Model of Full-Time Workers	Structural Model of Full-Time Students	Structural Model of Full-Time Workers
χ^2/df	$\leq .3$	1.502	1.230	1.449	1.280
SRMR	$\leq .08$	.0527	.0550	.0529	.0572
GFI	$\geq .9$	.942	.946	.936	.935
AGFI	$\geq .9$	.908	.917	.905	.905
NFI	$\geq .9$	.920	.935	.909	.923
TLI	$> .9$	.960	.983	.960	.976
IFI	$> .95$	.972	.987	.970	.982
CFI	$> .95$	.971	.987	.969	.982
RMSEA	$< .06$	.046	.033	.043	.037
<i>p-value</i> for test of close fit	$.05 \leq p \leq .10$	<i>p-value</i> = .651	<i>p-value</i> = .906	<i>p-value</i> = .755	<i>p-value</i> = .880
HOTLER	> 200	229	240	230	225

A structural model was applied to examine causal relationships among the theoretical constructs. The fit statistics for final models were good, as shown in Table 5. The overview of structural equation model results is shown in Figure 1.

For the full-time students, four of six paths were significant. The model accounted for 12.7% of the variance in the credibility judgment behaviour of students. Intention to search for online information and intention to judge online information significantly affected full-time students' credibility judgment behaviour with path coefficients of -0.236 ($p < 0.005$) and 0.462 ($p < 0.001$), respectively. Intention to search information online of students explained 42.6% of the variance in their intention to evaluate online information with a path coefficient of 0.652 ($p < 0.001$). One U&G factor that was Internet ambience

positively predicted students' intention to seek online information with the path coefficient of 0.690 ($p < 0.01$), and the variance was 0.545.

For the full-time workers, four of six links were significant. The model explained for 18.6% of the variance in the credibility judgment behaviour of students. Intention to judge online information significantly affected full-time workers' credibility judgment behaviour with a path coefficient of 0.433 ($p < 0.001$). Intention to search information online of workers accounted for 45.0% of the variance in their intention to evaluate online information with a path coefficient of 0.671 ($p < 0.001$). Two U&G factors: convenient information seeking and Internet ambiance, positively determined workers' intention to search information from the Internet with path coefficients of 0.382 ($p < 0.001$) and 0.275 ($p < 0.005$) respectively, accounting for 32.7% of the variance in the intention. Therefore, there were enough evidences to conclude the statements in hypotheses *H1b*, *H3a*, *H3b*, *H4a*, *H4b*, *H5a* (negative impact), *H6a*, and *H6b*.

For the student group, the significant paths were UG_IA- I_S, I_S- I_J, I_S- J_B, and I_J- J_B. On the contrary, for the worker group, the significant paths were UG_CIS-I_S, UG_IA- I_S, I_S- I_J, and I_J- J_B. The path coefficient for convenient information seeking and intention to search online information was not significant for the full-time students, whereas the path coefficient for intention to search for online information and credibility judgment behaviour was not significant for the full-time workers. Consequently, there was an empirical evidence to not reject the statement in Hypothesis *H7*.

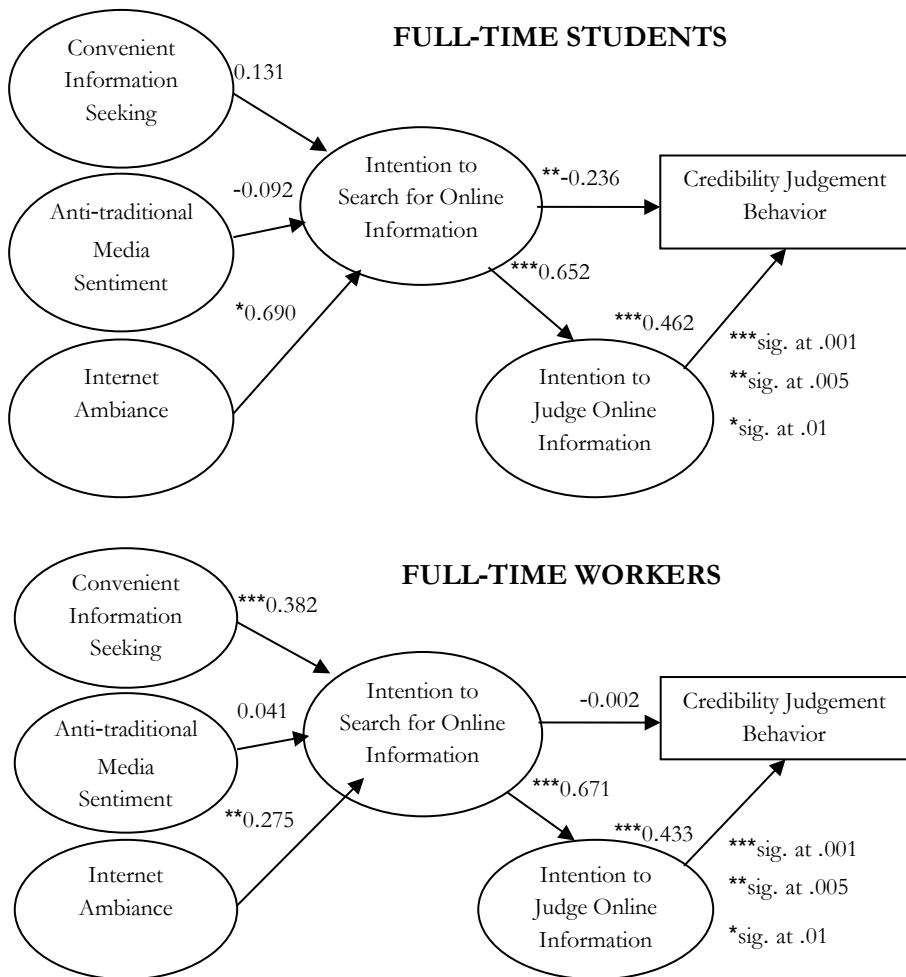


Figure 1. Standardized estimates for SEM of full-time students and full-time workers

5.2 Discussion of Findings

For full-time workers, their convenient information seeking and Internet ambiance motivations positively affect their intention to search for online information to fulfil their tasks. That intention positively drives their intention to judge the retrieved information. The intention to evaluate online information finally leads to their credible judgment behaviour. For full-time students, their Internet ambiance motivation positively influence their intention to search for

online information to fulfil tasks. The intention to search later determines their intention to judge Internet information. Their intention to judge online information drives full-time students to evaluate the information quality. Antecedent factors of credibility judgment behaviour are different between full-time students and full-time workers. These findings conform to the literature research as explained in the section 3.

One hypothesis (*H5a*) is statistically meaningful, but in the negative way. This could be explained by the findings of Metzger et al. (2003) indicating that students perceived the credibility of all traditional media differently from non-students, but they did not differ in their ratings of Internet credibility specifically. Both students and non-students reported that they evaluate online information rarely or occasionally. Non-students emphasized that they verified online information more than students did. The students also used the Web for entertainment purpose rather than for research, news, or business information. High school students did not use the credibility as a factor in assessing information. They paid higher attention to the graphics and multimedia of a website than the quality of information (Agosto, 2002). Young people would compromise their credibility judgement when faced the dilemma to select between quickly access resources or to select more credible but more time-consuming resources. These cases frequently occurred when they believed that the consequences of using that information were not critical (Rieh & Hilligoss, 2008). In addition, not all college students were confident in their credibility judgment of information. Some students said they could not know the credibility of information or the believability of some information sources until they using it (Rieh & Hilligoss, 2008). Moreover, when using the acquired information for the reference purpose, respondents gave credibility ratings to the Internet as a source more than other media, i.e. magazines, radio, and television (Flanagin & Metzger, 2000). Thus, after the student intended to search information online, they may not immediately perform the credibility assessment because of their trust on the Internet credibility.

The rejection of the hypothesis *H1a* could be explained by the study of Bondad-Brown et al. (2012) pointing that information was not a significant driver of television viewing. The purposive value to accomplish something with specified informational purpose did not positively influence students' intention to use social networking systems (Ifinedo, 2016). Use motivations in term of

convenience and information seeking did not correlate with the number of online activities (Kaye & Johnson, 2004). Ease of use did not significantly impact the Internet usage (Nayak et al., 2010). The perceived ease of use was also found to be stronger for older people than younger people (Pan & Jordan-Marsh, 2010). The rejection of hypotheses *H2a* and *H2b* could be explained by the study of Johnson and Kaye (2002) stating that reliance on traditional media did not predict reliance on the Web. Moreover, the credibility of other media (online newspapers, television news, radio news, and news magazines) was not predicted by reliance on the Web (Johnson & Kaye, 2002). Internet users did not significantly perceive the Internet to be a more trusted information source in relation to traditional media (Flanagin & Metzger, 2000). The rejection of the hypothesis *H5b* may be because intention to search did not directly determine credibility judgment behaviour, but indirectly affect the behaviour through intention to verify online information. The judging credibility of information was not always explicitly concerned every time a participant picking up an information source (Rieh & Hillgoss, 2008). In addition, there was a negative relationship between self-reported and real information evaluation behaviour (Flanagin & Metzger, 2007).

6 Implications for Theory and Practice

This study presents a noteworthy contribution to the literature to explore different aspects of the uses and gratifications theory as predictors of people's intention to search online information to complete their tasks. This study also investigates the direct and indirect influence of two wills: intention to search and intention to verify online information, on actual credibility judgment behavior. The strong point of the study lies in the extension of the established TPB framework with a novel view of the motivations and intention and the comparison between two groups: full-time students and full-time workers who may have different tasks to fulfill. The research model has a meaningful explanatory power, which could be extended to study individuals' information seeking and verifying behavior in other contexts in the futures such as searching Internet information and using it for other purposes.

The findings of this study have practical implications for educators, managers, and policy makers who support the use of the Internet for searching information to improve productivity. Firstly, the quality of information is critical. It should

be evaluated during online information search process. Secondly, the credibility judgment behavior of individuals is driven by their intention to evaluate information from the Internet. Credibility judgment intention could be aimed at assessing information itself, such as organization and content, its source, such as reputation and credibility of sources, or its presentation, such as design and layout. Educators, managers, and policy makers should guide their students, employees, and citizens about how to judge the online information quality. Thirdly, in terms of intention to search online information, students' intention to search for new learning materials, to read and understand the content carefully, and to organize and to synthesize founded materials or information from various sources negatively drives their credibility judgment behavior. This may happen because students plan to put some efforts in the information-seeking phase, so they possibly neglect to verify the quality of online information suitably. However, teachers or instructors should emphasize the importance of credibility evaluation to students. Intention to search online information directly affects intention to assess that information, and indirectly enhances the credibility judgment behavior. This result points that when students or employees conduct any information search for their tasks, they always consider about evaluating the content, source, and presentation of Internet information. Therefore, educators, managers, and policy makers should increase knowledge and enhance the experiences of students and workers regarding searching for new Internet materials, skimming and scanning the retrieved information, and synthesizing information from different online channels. Lastly, to understand why students start an online search for task completion, they search from the Internet because of Internet ambiance. They like the good content/ writing of online content. They think that online content is interesting. They also want to access new content from new content providers or specific topics. Employees are driven to search online information to fulfill their tasks due to the Internet ambiance as well. In addition, they access the Internet content because they want to get information quickly, to access information anywhere, anytime, and to reach a wide variety of information. Educators and managers should give some advices about objectives before search and clearly specify the seriousness of information credibility used to accomplish their school/ working tasks, to make students and workers properly trading off between speed and quality.

7 Conclusion and Future Research

This exploratory study introduces a research model of constructs that are possibly affect intention to seek for online information. The intention to search information to complete studying or working tasks together with the intention to assess the online information quality are later posited to influence actual credibility judgment. The research model is developed based on the Theory of Planned Behaviour and the Uses and Gratifications theory. This study fills the gap by utilizing nascent U&G factors as the determinants of individuals' decisions to evaluate information for task fulfillment critically. Structural Equation Modelling (SEM) is used to test the formulated model, applying data collected from surveys of full-time students and full-time employees. Findings indicate associations between U&G factors and TPB factors. Data analysis supports 9 out of the 13 proposed hypotheses. This paper presents two sample sets of the model and suggests some guidance for teachers/ instructors, administrators, and policy makers to nurture credibility judgment to their students and workers.

Although this study shows some interesting results, it has some limitations. Firstly, the majority groups were females and people with Bachelor degree backgrounds. Secondly, the purpose of information search and verification focused only on fulfilling school/ working tasks. Thirdly, some constructs met the acceptable criteria even though they were adapted from the literature research. Therefore, it could not claim that the findings can be generalized to other countries with different environments.

Future research should conduct the study with some more samples from other countries, different comparison groups such as undergraduate students versus graduate students, professionals versus trainees, various information seeking purposes such as for personal pleasure, and task types, to increase generalizability. More antecedents of information search and judgment should be investigated, drawing from other theories such as Behavioral decision theory. Relevant factors impacting credibility judgment behavior should be added such as knowledge for credibility verification. Socioeconomic factors relating to information-seeking process such as gender and occupation should be explored. Qualitative study should be conducted to enhance understanding about information-seeking process. Longitudinal study should be explored to expand

conclusive information. More studies are needed to understand why some uses and gratifications constructs were not significant such as anti-traditional media sentiment. The measurement items for some constructs such as Internet ambiance should be further refined to meet the ideal threshold.

References

- Adeleke, A., Bahaudin, A., & Kamaruddeen, A. (2015). A Partial Least Square Structural Equation Modeling (PLS SEM) Preliminary Analysis on Organizational Internal and External Factors Influencing Effective Construction Risk Management among Nigerian Construction Industries. *Rev. Téc. Ing. Univ. Zulia*, 38(143), 143-155.
- Agosto, D. E. (2002). A model of young people's decision-making in using the Web. *Library & Information Science Research*, 24(4), 311-341.
- Al-Debei, M. M., Al-Lozi, E., & Papazafeiropoulou, A. (2013). Why people keep coming back to Facebook: Explaining and predicting continuance participation from an extended theory of planned behaviour perspective. *Decision Support Systems*, 55(1), 43-54.
- Antonelli, R. A., Almeida, L. B. d., Espejo, M. M. d. S. B., & Longhi, F. L. (2013). Business professionals' perceptions related to the influence of information technology in individual work. *JISTEM-Journal of Information Systems and Technology Management*, 10(1), 41-60.
- Athukorala, K., Glowacka, D., Jacucci, G., Oulasvirta, A., & Vreeken, J. (2016). Is exploratory search different? A comparison of information search behavior for exploratory and lookup tasks. *Journal of the Association for Information Science and Technology*, 67(11), 2635-2651.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74-94.
- Bao, Y., Hoque, R., & Wang, S. (2017). Investigating the determinants of Chinese adult children's intention to use online health information for their aged parents. *International journal of medical informatics*, 102, 12-20.
- Bentler, P. M. (2006). EQS 6 structural equations program manual. In: Encino, CA: Multivariate Software, Inc.
- Bollen, K. A. (1987). Total, direct, and indirect effects in structural equation models. *Sociological methodology*, 37-69.
- Bondad-Brown, B. A., Rice, R. E., & Pearce, K. E. (2012). Influences on TV viewing and online user-shared video use: Demographics, generations, contextual age, media use, motivations, and audience activity. *Journal of Broadcasting & Electronic Media*, 56(4), 471-493.
- Catalano, A. (2013). Patterns of graduate students' information seeking behavior: A meta-synthesis of the literature. *Journal of documentation*, 69(2), 243-274.
- Cereijo, M. V. P. (2006). Attitude as predictor of success in online training. *International Journal on E-Learning*, 5(4), 623-639.

- Chaxel, A.-S., Russo, J. E., & Kerimi, N. (2013). Preference-driven biases in decision makers' information search and evaluation. *Judgment and decision making*, 8(5), 561.
- Chevalier, A., Dommes, A., & Marquié, J.-C. (2015). Strategy and accuracy during information search on the Web: Effects of age and complexity of the search questions. *Computers in human behavior*, 53, 305-315.
- Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 64-73.
- Dimmick, J., Chen, Y., & Li, Z. (2004). Competition between the Internet and traditional news media: The gratification-opportunities niche dimension. *The Journal of Media Economics*, 17(1), 19-33.
- Donat, E., Brandtweiner, R., & Kerschbaum, J. (2009). Attitudes and the digital divide: Attitude measurement as instrument to predict internet usage. *Informing Science: The International Journal of an Emerging Transdiscipline*, 12(1), 37-56.
- Dubihlela, J., & Dhurup, M. R. (2015). Determinants of, and barriers to, market orientation and the relationship with business performance among SMES. *Journal of Applied Business Research*, 31(5), 1667.
- Dunn, S. C., Seaker, R. F., & Waller, M. A. (1994). Latent variables in business logistics research: scale development and validation. *Journal of Business logistics*, 15(2).
- Dwivedi, Y. K., & Lal, B. (2007). Socio-economic determinants of broadband adoption. *Industrial Management & Data Systems*, 107(5), 654-671.
- Flanagin, A. J., & Metzger, M. J. (2000). Perceptions of Internet information credibility. *Journalism & Mass Communication Quarterly*, 77(3), 515-540.
- Flanagin, A. J., & Metzger, M. J. (2007). The role of site features, user attributes, and information verification behaviors on the perceived credibility of web-based information. *new media & society*, 9(2), 319-342.
- Fornell, C., & Yi, Y. (1992). Assumptions of the two-step approach to latent variable modeling. *Sociological Methods & Research*, 20(3), 291-320.
- Gu, J.-C., Fan, L., Suh, Y. H., & Lee, S.-C. (2010). Comparing utilitarian and hedonic usefulness to user intention in multipurpose information systems. *Cyberpsychology, Behavior, and Social Networking*, 13(3), 287-297.
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Articles*, 2.
- Horng, S.-C., & Chen, A. C.-H. (1998). Market orientation of small and medium-sized firms in Taiwan. *Journal of Small Business Management*, 36(3), 79.
- Ifinedo, P. (2016). Applying uses and gratifications theory and social influence processes to understand students' pervasive adoption of social networking sites: Perspectives from the Americas. *International Journal of Information Management*, 36(2), 192-206.
- Jahanshahi, A. A., Rezaci, M., Nawaser, K., Ranjbar, V., & Pitamber, B. K. (2012). Analyzing the effects of electronic commerce on organizational performance: Evidence from small and medium enterprises. *African Journal of Business Management*, 6(22), 6486-6496.
- Johnson, T. J., & Kaye, B. K. (2002). Webbelievability: A path model examining how convenience and reliance predict online credibility. *Journalism & Mass Communication Quarterly*, 79(3), 619-642.
- Jum, N. (1978). *Psychometric theory*. New York: McGraw-Hill.

- Jung, J., Chan-Olmsted, S., Park, B., & Kim, Y. (2012). Factors affecting e-book reader awareness, interest, and intention to use. *new media & society*, 14(2), 204-224.
- Katz, I. R., Haras, C., & Blaszczyński, C. (2010). Does business writing require information literacy? *Business Communication Quarterly*, 73(2), 135-149.
- Kaye, B. K. (2010). Going to the blogs: Toward the development of a uses and gratifications measurement scale for blogs. *Atlantic Journal of Communication*, 18(4), 194-210.
- Kaye, B. K., & Johnson, T. J. (2004). A Web for all reasons: uses and gratifications of Internet components for political information. *Telematics and Informatics*, 21(3), 197-223.
- Kline, R. B. (2010). *Principles and practice of structural equation modeling* (3rd edition ed.): The Guilford Press.
- Kulviwat, S., Guo, C., & Engchanil, N. (2004). Determinants of online information search: a critical review and assessment. *Internet research*, 14(3), 245-253.
- Lee, S. W.-Y., & Tsai, C.-C. (2011). Students' perceptions of collaboration, self-regulated learning, and information seeking in the context of Internet-based learning and traditional learning. *Computers in human behavior*, 27(2), 905-914.
- Li, Y., Zhao, Y., Tan, J., & Liu, Y. (2008). Moderating effects of entrepreneurial orientation on market orientation-performance linkage: Evidence from Chinese small firms. *Journal of Small Business Management*, 46(1), 113-133.
- Liao, Q. V., & Fu, W.-T. (2014). Age differences in credibility judgments of online health information. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 21(1), 2.
- Limberg, L., & Sundin, O. (2006). Teaching Information Seeking: Relating Information Literacy Education to Theories of Information Behaviour. *Information Research: An International Electronic Journal*, 12(1), n1.
- Liu, I. L., Cheung, C. M., & Lee, M. K. (2010). Understanding Twitter Usage: What Drive People Continue to Tweet. *Pacis*, 92, 928-939.
- Lomax, R. G., & Schumacker, R. E. (2004). *A beginner's guide to structural equation modeling*: psychology press.
- Lu, H.-P., & Lee, M.-R. (2012). Experience differences and continuance intention of blog sharing. *Behaviour & Information Technology*, 31(11), 1081-1095.
- Metzger, M. J., Flanagin, A. J., & Zwarun, L. (2003). College student Web use, perceptions of information credibility, and verification behavior. *Computers & Education*, 41(3), 271-290.
- Mohamed, M. S., & Anisa, H. (2012). Relationship Between Organizational Commitment and Organizational Citizenship Behavior. *IUP Journal of Organizational Behavior*, 11(3).
- Nayak, L. U., Priest, L., & White, A. P. (2010). An application of the technology acceptance model to the level of Internet usage by older adults. *Universal Access in the Information Society*, 9(4), 367-374.
- Niehaves, B., & Plattfaut, R. (2014). Internet adoption by the elderly: employing IS technology acceptance theories for understanding the age-related digital divide. *European Journal of Information Systems*, 23(6), 708-726.
- Pan, S., & Jordan-Marsh, M. (2010). Internet use intention and adoption among Chinese older adults: From the expanded technology acceptance model perspective. *Computers in human behavior*, 26(5), 1111-1119.

- Panjakajornsak, V., Lin, M.-C., Chiu, Y.-P., Huang, C.-H., Wu, Y.-P., Liu, Z., . . . Yang, Y.-L. (2017). A Model of Thai Consumers' Behavioral Intention: A Study of Generations X and Y. *International Journal of e-Education, e-Business, e-Management and e-Learning*, 7 (4), 219, 229.
- Papacharissi, Z., & Rubin, A. M. (2000). Predictors of Internet use. *Journal of Broadcasting & Electronic Media*, 44(2), 175-196.
- Quintana, M. G. B., Pujol, M. C., & Romaní, J. R. (2012). Internet navigation and information search strategies: how do children are influenced by their participation in an intensive ICT project. *International Journal of Technology and Design Education*, 22(4), 513-529.
- Rahimnia, F., & Hassanzadeh, J. F. (2013). The impact of website content dimension and e-trust on e-marketing effectiveness: The case of Iranian commercial saffron corporations. *Information & Management*, 50(5), 240-247.
- Rieh, S. Y., & Hilligoss, B. (2008). College students' credibility judgments in the information-seeking process. *Digital media, youth, and credibility*, 49-72.
- Robertson-Lang, L., Major, S., & Hemming, H. (2011). An exploration of search patterns and credibility issues among older adults seeking online health information. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, 30(4), 631-645.
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of psychological research online*, 8(2), 23-74.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of educational research*, 99(6), 323-338.
- Shanahan, M. C. (2008). Transforming information search and evaluation practices of undergraduate students. *International journal of medical informatics*, 77(8), 518-526.
- Sharit, J., Taha, J., Berkowsky, R. W., Profita, H., & Czaja, S. J. (2015). Online information search performance and search strategies in a health problem-solving scenario. *Journal of cognitive engineering and decision making*, 9(3), 211-228.
- Sharma, S., & Crossler, R. E. (2014). Intention to engage in social commerce: uses and gratifications approach.
- Shim, S., Eastlick, M. A., Lotz, S. L., & Warrington, P. (2001). An online prepurchase intentions model: The role of intention to search. *Journal of retailing*, 77(3), 397-416.
- Shin, D.-H. (2011). Understanding e-book users: Uses and gratification expectancy model. *new media & society*, 13(2), 260-278.
- Silva, E. (2009). Measuring skills for 21st-century learning. *Phi Delta Kappan*, 90(9), 630-634.
- Sirdeshmukh, D., Ahmad, N. B., Khan, M. S., & Ashill, N. J. (2018). Drivers of user loyalty intention and commitment to a search engine: An exploratory study. *Journal of Retailing and Consumer Services*, 44, 71-81.
- Tanaka, K., Nakamura, S., Ohshima, H., Yamamoto, Y., Yanbe, Y., & Kato, M. P. (2010). Improving Search and Information Credibility Analysis from Interaction between Web1. 0 and Web2. 0 Content. *JSW*, 5(2), 154-159.
- Tillmann, M., & Silcock, J. (1997). A comparison of smokers' and ex-smokers' health-related quality of life. *Journal of Public Health*, 19(3), 268-273.

- Tsao, W.-C., & Chang, H.-R. (2010). Exploring the impact of personality traits on online shopping behavior. *African Journal of Business Management*, 4(9), 1800-1812.
- Wang, S. H. (2017). Web-based medical service: technology attractiveness, medical creditability, information source, and behavior intention. *Journal of medical Internet research*, 19(8).
- Wang, Y. S., Wu, M. C., & Wang, H. Y. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology*, 40(1), 92-118.
- White, G., & Kiegaldie, D. (2011). Gen Y learners: just how concerned should we be? *The clinical teacher*, 8(4), 263-266.
- Zhou, M. (2014). Gender difference in web search perceptions and behavior: Does it vary by task performance? *Computers & Education*, 78, 174-184.