Internet Use and Happiness

Richard H. Hall(✉)

Department of Business and Information Technology,
Missouri University of Science and Technology, Rolla, MO, USA
rhall@mst.edu

Abstract. In order to explore the relationship between happiness and Internet use, an Internet Use Scale (IUS) was developed and administered to college students along with the Flourishing Scale [1] and the Satisfaction with Life Scale [2]. A factor analysis of the IUS revealed three components of Internet use (time spent on the Internet; use of the Internet for information gathering; and use of the Internet for affective expression). Time spent on the Internet was negatively related to both happiness measures; information gathering was positively related to Flourishing scores; and affective expression was unrelated to happiness.

Keywords: Happiness · Internet

1 What Is Happiness?

For the most part, researchers agree that happiness is inherently subjective. In fact, the term is often used interchangeably with "subjective well-being" (SWB) [3]. Myers [4], one of the leading researchers in the area, stated that happiness is "…whatever people mean when describing their lives as happy." (p. 57). Despite the potential for ambiguity with such a definition, there is considerable agreement, at least across Western culture as to what happiness means [5]. Most people equate happiness with experiences of joy, contentment, and positive well being; as well as a feeling that life is good, meaningful, and worthwhile [6].

As a consequence, self-report measures have served as the primary measure of happiness. Examples include the Satisfaction with Life Scale (SLS), the Subjective Happiness Scale (SHS), and the Steen Happiness Index (SHI). Psychometric studies of these self-report measures indicate that they are, by and large, reliable over time, despite changing circumstances; they correlate strongly with friends and family ratings of happiness; and they are statistically reliable. Lyubomirsky [6] sums this up, "A great deal of research has shown that the majority of these measures have adequate to excellent psychometric properties and that the association between happiness and other variables usually cannot be accounted for by transient mood" (p. 239). These psychometric studies illustrate the general agreement among people as to what constitutes happiness.

One other interesting point regarding the definition of happiness and its measurement is that mean happiness is consistently above a mid-line point in most populations sampled [3]. For example, three in ten Americans say they are "very happy", only 1 in

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ten report that they are “not too happy”, and 6 in 10 say they are “pretty happy” [4]. Therefore, there appears to be a positive set-point, where most people appear to be moderately happy, and this is independent of age and gender [4].

2 Happiness and the Internet

Studies that have examined the relationship between the Internet and happiness have been conducted at least since the relatively early days of the World Wide Web. Most of these have focused on communication/collaborative activities and the Internet. As we mentioned, these types of activities have been found in non-internet studies to be strongly related to happiness.

2.1 The Internet Paradox

In 1998 Kraut and colleagues reported the results of a reasonably extensive study of early World Wide Web users where they followed the activity of mostly first time Internet users over a period of years. Researchers administered periodic questionnaires and server logs indicating participant activity on the web. (Participants were provided with free computers and internet connections) [7].

Over all, the results showed that the Internet had a largely negative impact on social activity in that those who used the Internet more communicated with family and friends less. They also reported higher levels of loneliness. Interestingly, they also found that email, a communication activity, constituted the participants main use of the Internet. The researchers coined the term “internet paradox” to describe this situation in which a social technology reduced social involvement.

These researchers speculated that this negative social effect was due to a type of displacement, in which their time spent online displaced face-to-face social involvement. Although they note that users spent a great deal of time using email, they suggest that this constitutes a low quality social activity and this is why they did not see positive effects on well being [7]. They find further support for this supposition in a study reported in 2002, where they found that business professionals who used email found it less effective than face-to-face communication or the telephone in sustaining close social relationships [8].

Since the time that this Internet paradox was identified, a number of studies over the next twelve years have found, fairly consistently, results that contradict the Kraut et al. results. More recent studies have indicated the potential positive social effects of the Internet and their relationship to well being. Further, the effect appears to be getting stronger as the Internet and the users mature.

In fact, one of the first challenges to this Internet paradox was provided by Kraut himself when he published follow up results for participants in the original Internet-paradox study, including data for additional participants. In this paper, “Internet Paradox Revisited,” researchers report that the negative social impact on the original sample had dissipated over time and, for those in their new sample, the Internet had positive effects on communication, social involvement, and well being [5].

Therefore, it appears that the results of the original Kraut et al. study were largely due to the participants' inexperience with the Internet. Within just a few years, American society's experience with the Internet had increased exponentially. Further, the Kraut studies concentrated on email, whereas there are many other social communication tools available on the modern web.

2.2 Displacement Versus Stimulation Hypothesis

More recently, researchers have examined the relationship between on-line communication and users' over all social networks, explicitly addressing the question of whether or not on-line communication "displaces" higher quality communication, or "stimulates" it. Presumably, the former would negatively effect well being, while the latter would enhance it [9].

In this large scale study, over 1000 Dutch teenagers were surveyed regarding the nature of their on line communication activities, the number and quality of friendships, and their well being.

They found strong support for the stimulation hypothesis. More specifically, these researchers developed a causal model, which indicated that instant messaging lead to more contact with friends, which lead to more meaningful social relationships, which, in turn, predicted well being. Interestingly, they did not find this same effect for chat in a public chat room. They attributed this finding to the fact that participants reported that they interacted more with strangers in the chat room as compared to their interaction with friends with instant messaging [9].

2.3 The Internet and Social Connectedness

Despite studies, such as the one just mentioned, which have found a relationship between internet use and positive outcomes, there is still a great deal of press suggesting that the internet can effect users negatively, causing social isolation, and shrinking of social networks. This is purported to be especially true for adolescents [10].

Researchers with the Pew Internet and Daily Life Project set out to examine this concern directly in one of the most comprehensive studies of the effect of the Internet on social interaction, reported in 2009 [10]. Contrary to fears, they found that:

- A variety of Internet activities were associated with larger and more diverse core discussion networks.
- Those who participated most actively with social media were more likely to interact with those from diverse backgrounds, including race and political view.
- Internet users are just as likely as others to visit a neighbor in person, and they are more likely to belong to a local voluntary organization.
- Internet use is often associated with local activity in community spaces such as parks and restaurants, and Internet connections are more and more common in such venues.

Although these outcomes did not explicitly include happiness, they do support the contention that Internet activities can enhance the amount and quality of social relationships, which has been implicated in a number of studies as a strong and consistent predictor of happiness.

3 Research Overview

In this study we address the relationship between Internet use and happiness by re-examining the Internet paradox and the displacement-versus-stimulation hypothesis. We ask users about their overall amount of internet usage, and assess the relationship with happiness. We will also extend past research by exploring different types of internet usage through an Internet Usage Scale currently under development. In this way we can better explore the role of context in the relationship between Internet usage activities and happiness.

4 Questions

4.1 Internet Use Scale

How are the items of the Internet Use Scale related to one another and to what extent are these factors related to the five factors the scale was intended to measure?

4.2 Relationship Between Internet Use and Happiness

Are the Internet Use Scale factors related to happiness? If so, which factors and in what direction?

5 Research Method

5.1 Participants

Twenty-eight students enrolled in an undergraduate course in digital media at a small Midwestern technological research University served as the participants in this study.

5.2 Measures

Twenty-five statements were developed to represent five factors in Internet use, with five items representing each factor. The factors the items were intended to represent were: Time spent on the internet; Use of the Internet for Social Interaction; Use of the Internet for Affective Expression; Use of the Internet for Gaming; and Use of the Internet for Information Gathering.

In addition The Flourishing Scale (FS) [1], and the Satisfaction with Life Scale (SWLS) [2] were administered to represent happiness.

5.3 Procedure

Participants completed a survey on-line that consisted of the items from the IUS, FS, and SWLS. The items were presented in the form of a statements and participants responded with a number from 1–7 representing the degree of agreement.

6 Results

6.1 IUS Factor Analysis

In order to compare the relationship of the items of the IUS scale with the proposed/predicted factors a confirmatory factor analysis was carried out on all items. This was a Principal Components Analysis with a Varimax rotation with a five factor forced solution, to represent the five factors proposed. The items, proposed factors, computed factors, and primary loadings are presented in Table 1.

Table 1. Proposed and computed factors of the internet use scale

Proposed factor	Item	Computed factor				
		1	2	3	4	5
Affective Expression	I often post online "rants"				.74	
	Interacting socially online tends to make me angry					.62
	Interacting socially on the internet tends to calm me down	.57				
	I do not like people who vent their anger online in social forums				−.88	
	I feel better when I vent my anger online				.60	
Social interaction	I get a lot of social support from interacting with people online		.57			
	I tend to write positive and supportive comments when I interact online					.87
	I rarely use the internet to post everyday things like what I had for lunch, or pictures of my pets			.51		
	When I want to socialize, I'd rather interact face-to-face than online	−.73				
	I use the internet to connect with people			.73		
Gaming	I spend more time playing on-line games than I do on social media sites like Facebook		.84			
			−.51			

(*Continued*)

Table 1. (*Continued*)

Proposed factor	Item	Computed factor				
		1	2	3	4	5
	I participate in fantasy sports on the internet					
	I spend a lot of time playing on-line games		.91			
	I would rather play a game/sport that requires physical activity and skill than play an on-line game	−.74				
	I like to participate in off-line competitive games/sports	−.64				
Information Gathering	I often use the internet for finding facts				.53	
	I often use the internet for checking facts		.61			
	I'm skeptical of the accuracy of information I find on the internet			.57		
	When I don't know the answer to something, I immediately look it up online			.78		
	I check reviews online before I make any serious purchase			.59		
Time	I spend more time on line than off	.79				
	I spend a lot of my waking hours on the internet	.76				
	The internet often distracts me from healthy physical activity like exercise	.62				
	I believe it is rude for someone to check a mobile device (e.g. read a text message) when they are participating in a face-to-face conversation			.48		
	My on-line activity helps support my off-line activity		.68			

The scale was modified based on this factor analysis by reducing the factors to three (Time, Information Gathering, and Affective Expression). In addition some items were eliminated and some were expected to load on different factors than those initially predicted. A second Principal Components analysis with a Varimax rotation was computed with a forced three-factor solution based on the remaining three factors. The items, the remaining factors, and primary loadings are displayed in Table 2.

Table 2. Factor analysis of modified internet usage scale

Proposed factor	Item	Computed factor		
		AE	IG	T
Affective Expression (AE)	I often post online "rants"	−.83		
	I do not like people who vent their anger online in social forums	.80		
	I feel better when I vent my anger online	−.76		
Info Gathering (IG)	I check reviews online before I make any serious purchase		.71	
	I rarely use the internet to post everyday things like what I had for lunch, or pictures of my pets		.70	
	I'm skeptical of the accuracy of information I find on the internet		.62	
	When I don't know the answer to something, I immediately look it up online		.61	
Time (T)	I spend more time on line than off			.83
	I spend a lot of my waking hours on the internet			.80
	I would rather play a game/sport that requires physical activity and skill than play an on-line game			−.79
	When I want to socialize, I'd rather interact face-to-face than online			−.66
	The internet often distracts me from healthy physical activity like exercise			.62
	I like to participate in off-line competitive games/sports			−.60

6.2 Relationship Between Internet Usage and Happiness

In order to assess the relationship of the three internet usage factors and happiness, three factor scores were created by computing the mean of the items loading on a given factor (Table 2) with items subtracted or added depending on the direction of their loading (negative or positive). Scores for affective expression were reversed such that high scores represented more use of the Internet for affective expression. High scores on the time factor represented more time spent on the Internet and high scores on the Information Gathering factor represented more use of the Internet for Information Gathering Purposes. A zero-order Pearson correlation with two-tailed significance test was computed for each factor score with the happiness scale scores. These results are presented in Table 3.

Table 3. Correlation between factor scores and happiness

Happiness	Factor		
	Affective Expression	Info Gathering	Time
Flourishing	−.087	.469*	−.540**
SWLS	−.312	−.185	−.587**

*p < .05; **p < .01

7 Conclusions

Consistent with the original Internet paradox, and the displacement hypothesis, the total amount of time users reported spending on the Internet was strongly and negatively related to measures of happiness. The only specific Internet usage factor that was significantly related to happiness was the degree to which users reported carrying out information gathering activities, which was significantly related to Flourishing, but not the Satisfaction with Life Scale. Further, use of the Internet for affective expression was not significantly related to perceived happiness measures.

While these results are interesting as an exploratory study, including the development of an Internet Usage measure, the study has limitations, which can be addressed in future research. First, the sample size of 26 was quite small, resulting in weak statistical power. Second, the scale items will need to be further modified and categorized based on further psychometric analyses with larger sample sizes. Third, some important factors, such as social interaction on the Internet, could not be properly examined due to the lack of predicted relationship among scale items. More psychometrically sound items of important constructs, such as social interaction, will need to be developed for examination in future studies of the relationship between internet usage and happiness.

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