

**What predicts online disinhibition? Examining perceptions of protection and control
online and the moderating role of social anxiety**

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Abstract

With the pervasive nature of social media and internet use among young adults, researchers have begun to explore experiences of online disinhibition, defined as reductions in restraint in online versus face-to-face settings. In contributing to this literature, the current study aimed to test whether perceptions of the internet as a place where one has the ability to be invisible, anonymous, and exercise control over interactions promotes greater online disinhibition. A sample of Australian young adults ($N = 687$; 59.8% female; $M_{\text{age}} = 19.45$ years, $SD = 2.07$) were included in the study. The sample was split to enable exploratory and confirmatory factor analyses on the measures of internet perceptions, with results finding two subfactors; (1) perceptions of the ability to be protected, invisible or feel safe online (labelled *protection*), and (2) perceptions of control over interactions and self-presentation online (labelled *control*). Links between perceptions of protection and control, and online disinhibition were then examined, before testing social anxiety as a moderator of these links. Results demonstrated that perceptions of protection, but not control, significantly predicted online disinhibition in young adults. Further, this relationship was moderated by social anxiety such that young adults high in both social anxiety and perceptions of protection reported the highest online disinhibition. The current study highlights novel perceptions of online contexts, illustrates their links with online disinhibition, and demonstrates how social anxiety may interact with perceptions of protection in predicting online experiences.

What predicts online disinhibition? Examining perceptions of protection and control online and the moderating role of social anxiety

Internet use is integral in the lives of young adults (aged 17-to-25), with this age group reporting the highest prevalence of internet use and accessing multiple social media platforms (e.g., Facebook, Instagram, and Snapchat¹). Indeed, over 90% of Australian young adults report using the internet multiple times per day², and almost 50% of American young adults report that they are ‘almost constantly’ online³. With the pervasiveness of young adults’ internet use comes questions about the opportunities and risks of lives lived online, how young adults engage in different behaviors online, and the impact of digital technologies on cognition, affect, and behavior. The current study contributes to an emerging area of research concerning young adults’ perceptions of digital environments and online disinhibition.

Perceptions of Digital Contexts and Online Disinhibition

A variety of features and affordances of online settings have been proposed as fostering distinct interpersonal contexts that may transform the thoughts and behaviors of young people online^{4,5}. Importantly, and relevant to this study, anonymity, invisibility, and controllability are key affordances of online settings that are suggested to change behavior⁵⁻⁷, or act as antecedents of online disinhibition⁸.

Online disinhibition is defined as experiences or perceptions of reductions in restraint online, whereby individuals think, act, and feel differently online, as compared to offline⁹. Experiences of online disinhibition are associated with a range of personal and behavioral outcomes, including harmful online behaviors such as cyber aggression, trolling and inauthentic self-presentation^{9,10}. Although some internet affordances have been proposed as antecedents of online disinhibition, little research has empirically examined these relationships, with a much larger literature focusing on the outcomes of online disinhibition.

In the current study, we posit that it is not simply the affordances of online settings, but rather, individuals' *perceptions* of the digital context that encourage disinhibition online. Past research has similarly suggested that perceptions of internet affordances, rather than the affordances themselves, predict psychological experiences and online behaviors¹¹.

A variety of measures and methods have previously been used to examine the large range of proposed internet features and affordances^{8,11-14}. For example, Schouten and colleagues¹¹ measured the perceived relevance of nonverbal cues and controllability online, and Kamalou et al.¹⁵ examined control over self-presentation and personal information as features of online settings that may contribute to perceptions of online safety. However, available measures tend to be brief, specific to instant messaging or particular online platforms, and are thus not suitable for generalized use. Further, some measures fail to separate individuals' perceptions of digital environments from their resulting behaviors, or from disinhibition (e.g., "It is easier to communicate online because you can reply anytime you like"¹⁴), and thus confound the relationships between such constructs. This may be because the available literature on internet features and affordances lacks clarity, and 'features' and 'affordances' are terms often used interchangeably. We propose the following definitions: Internet *features* are static attributes unique to online environments – including reduced nonverbal cues and asynchronicity – that operate along a continuum and vary across platforms and tools within online communication^{4,16}. Internet *affordances* – including invisibility, anonymity, and control online – emerge from the dynamic interplay between an individual's characteristics, needs, and goals, and their perceptions of internet features^{16,17}. As such, affordances constitute perceived experiences or opportunities in digital settings that may modify or enable communication and behavior online. The current study aimed to explore young adults' perceptions of the internet as related to these affordances, and to test the relationships between perceptions of the internet and online disinhibition. We

hypothesized that young adults who perceived the internet as affording more opportunities for invisibility, anonymity, and control, would report greater online disinhibition (H1).

The Role of Social Anxiety

Although previous research indicates an association between internet affordances and online disinhibition, this relationship may not be the same for all young adults. Research highlights the importance of considering dispositional and social factors of media users as buffering or exacerbating the effects of online contexts on cognitions, attitudes, and behaviors¹⁸. One important characteristic emerging in the literature is social anxiety. Specifically, research suggests that young people higher in social anxiety may perceive digital environments as providing enhanced control over social interactions, reducing the risk of negative evaluation, and providing greater comfort and safety for social interaction online, relative to offline settings^{15,19,20}. Social anxiety also facilitates greater online disinhibition through perceptions of fewer nonverbal cues and controllability within online interactions¹¹. Therefore, we hypothesized a moderating effect whereby the positive associations between perceptions of the internet and online disinhibition would be significantly stronger for young adults higher in social anxiety, than for those lower in social anxiety (H2).

The Current Study

Young adults may perceive online contexts to offer novel opportunities to control their interactions and self-presentations, or to behave differently than they do offline. This study furthers research in this area by empirically testing the associations between perceptions of internet affordances and online disinhibition. More specifically, we aimed to (1) operationalize a measure of perceptions of the internet as related to invisibility, anonymity, and the ability to exercise control online, (2) test the hypothesized positive relationships between perceptions of the internet and online disinhibition, and (3) examine the role of social anxiety in moderating these associations.

Method

Participants and Procedure

A large sample of young adults ($N = 687$) was recruited from an Australian university. Participants were invited to complete the study as part of a first-year psychology course if they were aged between 17-to-25 years and were active social media users. Purposive sampling was employed to recruit a relatively even gender split; as women were overrepresented in the sample, the study purposively recruited male participants in the later stages of data collection. The final sample of young adults ($M = 19.45$ years, $SD = 2.07$), included 411 (59.8%) respondents who identified as female. The ethnicity of the sample was reported as 78.5% Caucasian (White), 10.9% Asian, 1.7% Indigenous Peoples (First Nations), 1.7% African, and 7.2% from other backgrounds.

Prior to data collection, ethical approval was obtained from the University Human Research Ethics Committee. After providing informed consent, participants completed an anonymous online questionnaire, approximately 30 minutes in duration, as part of a larger research project of young adults' internet use, friendships, and well-being (see Scott et al.²¹ for more information). Measures pertinent to this study are detailed below. Participants completed the questionnaire in their own time and received course credit for their involvement.

Measures

Internet Perceptions

An initial pool of 28 items that measured perceptions of the internet as related to invisibility, anonymity, and control online were developed from the literature^{4,5,11,14} and co-designed with a sample of university students⁹. Participants were asked to indicate their agreement with the items along a 5-point scale (1 = *Strongly disagree* to 5 = *Strongly agree*). Following exploratory and confirmatory factor analyses (see supplementary materials), two

factors emerged. Six items comprised **Protection** ($\alpha = .86$), with participants indicating the extent to which they perceived the ability to be protected, invisible or feel safe online.

Example items include “The internet allows me to be invisible,” and, “I feel protected online because I am physically removed from others.” Five items comprised **Control** ($\alpha = .85$), with participants indicating the extent to which they perceived control over their interactions and self-presentation online. Example items include “The internet allows me to reply to messages when I feel ready,” and “The internet allows me to control what information I present to others about myself.”

Social Anxiety

The 19-item Social Interaction Anxiety Scale²² was used to measure social anxiety and fears of face-to-face social interaction. Participants indicated the degree to which each of the items were true of them on a 5-point scale (0 = *Not at all true of me* to 4 = *Extremely true of me*). Example items include “I have difficulty making eye-contact with others”, and “I have difficulty talking with other people.” The measure demonstrated high internal reliability ($\alpha = .94$).

Online Disinhibition

The 12-item Measure of Online Disinhibition⁹ was used to measure whether individuals think, feel, and act differently in the online versus offline environment. Example items include “I act differently online than I do offline,” and “I say things on the internet that I would not say in person.” Responses were recorded along a 5-point scale from 1 = *Not at all like me*, to 5 = *Very like me*. The scores were averaged, and the scale demonstrated good internal reliability ($\alpha = .93$).

Time Online

Participants were asked two items about how many hours per day on average they used the internet for social interaction and leisure (entertainment) purposes, respectively.

Participants responded via a drop-down list, with response options that ranged from 0 to 24 hours. The average score of both items was used to assess *Time Online*.

Data Analysis Strategy

Data analyses were conducted using Mplus Version 8²³ and SPSS Version 27. Following exploratory and confirmatory factor analyses that established and validated the factor structure of the internet perceptions scales, reliability and descriptive statistics of the protection and control measures were calculated, and bivariate correlations with other measures were conducted. Finally, a moderated multiple regression model was conducted to test the hypotheses; that is, the associations between the internet perceptions of protection and control, and online disinhibition, as moderated by social anxiety. Covariates entered at Step 1 were gender, age, and time spent online. Participants were asked to report their gender by selecting one of four closed items: 1 = *Male*, 2 = *Female*, 3 = *Other*, 4 = *Prefer not to say*. One participant selected 'Prefer not to say' in response to the question and was listwise deleted from analyses when gender was transformed to a binary coded variable (0 = *Male*, 1 = *Female*). Step 2 included the main effects of protection and control, followed by social anxiety at Step 3. In Step 4, three two-way interaction terms between protection, control, and social anxiety were added to the model. Independent and moderating variables (protection, control, and social anxiety) were centered prior to analyses. Where interactions were found to be significant, these were examined by graphing and calculating simple slopes.

Results

Correlations and Descriptive Statistics

Bivariate correlations and descriptive statistics are presented in Table 1. The measures of protection and control were positively correlated and were each positively correlated with social anxiety and online disinhibition. Further, perceptions of protection, social anxiety, and online disinhibition were positively associated with time spent online.

Predictive Model: Online Disinhibition

At Step 1, 7.4% of the variance in online disinhibition was explained by gender, age, and time spent online, $F(3, 683) = 18.26, p < .001$ (Table 2). Time online was significantly positively associated with online disinhibition. Gender and age did not significantly contribute to the model. Step 2 explained an additional 24.4% of the variance in online disinhibition, $F_{chg}(2, 681) = 121.60, p < .001$. Perceptions of protection were significantly positively associated with online disinhibition, although control did not significantly contribute to the model. At Step 3, an additional 9.5% of the variance in online disinhibition was explained, $F_{chg}(1, 680) = 109.75, p < .001$. In this step, social anxiety was significantly positively associated with online disinhibition. Step 4; including the two-way interaction terms (protection \times control, protection \times social anxiety, and control \times social anxiety) explained an additional 0.9% of the variance in online disinhibition, $F_{chg}(3, 677) = 3.49, p = .02$. However, only the interaction between protection \times social anxiety was significant. A total of 42.2% of the variance in online disinhibition was explained by the final model, $F(9, 677) = 54.83, p < .001$.

To probe the significant interaction, simple slopes analyses were conducted using the Process macro²⁴ in SPSS for low, moderate, and high levels of social anxiety using the pick-a-point technique of one standard deviation below the mean, the mean, and one standard deviation above the mean. A significant positive relationship was found between protection and online disinhibition, at low ($B = .32, p < .001$), moderate ($B = .40, p < .001$), and high ($B = .48, p < .001$), levels of social anxiety. The positive association between perceptions of protection online and online disinhibition was stronger for young adults higher in social anxiety (see Figure 1).

Discussion

This study aimed to contribute to available literature regarding young adults' experiences of online disinhibition by (1) characterizing young adults' perceptions of the internet, (2) examining the relationships between internet perceptions and online disinhibition, and (3) testing the role of social anxiety in moderating these associations. In addressing these aims, and in an extension of past research, we found that when measuring young adults' perceptions of the internet as related to invisibility, anonymity, and the ability to exercise control online, two key factors emerged: protection and control. Further, we demonstrated that young adults who reported higher perceptions of protection in online environments also reported higher levels of online disinhibition, and revealed an interaction between perceptions of protection online and social anxiety in predicting online disinhibition among young adults. Each of these key contributions are discussed below.

Perceptions of Protection and Control Online

Extending previous research on internet affordances, this study demonstrated that young adults perceive protection and control as two key affordances of digital environments. Consistent with past research, our measure of *control* considered individuals' perceptions of control over social interactions and self-presentation online, which are regarded as fundamental elements of computer-mediated communication (see Walther's²⁵ hyperpersonal model). However, contrary to more commonly investigated factors, we also found that *protection* emerged as a key component of internet perceptions. Although our measure of perceptions of protection in the online environment includes elements of invisibility (i.e., the ability to engage in communication in which one need not be directly seen or observed), it is novel and distinct from past conceptualizations of anonymity online. Specifically, the literature concerning anonymity is oriented towards the ability to conceal one's real name or *identity* online, such that online communication cannot be linked back to that specific individual¹², or is linked to invisibility and reduced nonverbal cues online (referred to as

audio-visual anonymity⁷). In this study, protection concerned participants' perceptions of the internet as affording the ability (of themselves or others) to be protected, invisible or feel safe online. Importantly, while the measures of protection and control online were initially developed from available literature by exploring factors such as invisibility, anonymity, and control, research into internet affordances has been predominantly theoretical. Through assessing individuals' perceptions of internet affordances, these new measures overcome a number of abovementioned limitations with existing instruments and operationalize long-standing theoretical constructs in a way that reflects contemporary online experiences.

Protection, Control, and Online Disinhibition

In testing the associations between internet perceptions and online disinhibition, we demonstrated three key findings. First, although control was positively associated with online disinhibition at the bivariate level, it was not significantly associated with online disinhibition when accounting for the other variables in the regression model. We suggest that the ability to strategically exercise control online may be more directly associated with specific online behaviors or activities (such as instant messaging) in which control over social interactions and self-presentation may be perceived as advantageous, rather than explaining young adults' disinhibited thoughts and feelings online. Second, the perceived ability to be protected and invisible online appears to play a more immediate role in fostering a sense of online disinhibition, and in reducing constraints online that are typically associated with concerns about self-presentation or judgement from others¹¹. Indeed, participants who reported higher perceptions of protection online reported higher levels of online disinhibition. This finding suggests that believing the internet affords the ability to be protected is an important contributing factor towards the disinhibition experienced by some young adults online.

There are both positive and negative outcomes associated with online disinhibition. As online disinhibition has been associated with harmful online behaviors^{9,10}, it is possible

that perceptions of being protected online may also predict negative outcomes. We propose that while distinct from anonymity, perceptions of protection online may be similarly associated with deindividuation effects and a reduced sense of personal responsibility, as being removed from others online may protect individuals from experiencing others' reactions to harmful online behaviors, or protect them from the consequences of their actions²⁶. Alternatively, we note that online disinhibition may enable individuals to express thoughts and feelings online that they feel unable to express offline^{5,6}, and highlight that online disinhibition has previously been associated with online self-disclosure¹¹, which itself has positive implications for social well-being. We suggest that future research should aim to extend the nomological network of these internet perceptions measures with other online outcomes.

Finally, beyond establishing a link between perceptions of protection and online disinhibition, we demonstrated a significant moderation of this association by social anxiety. Specifically, the positive association between protection and online disinhibition was strongest for participants higher in social anxiety, suggesting that there are attributes of online settings that are both appealing to, and meaningful for, online outcomes among more socially anxious youth. Indeed, social anxiety has previously been linked to online disinhibition²⁷ and preferences for online communication²⁸, possibly because individuals higher in anxiety perceive reduced social threat during online versus offline interactions¹⁹. Thus, young adults higher in social anxiety may perceive the online environment as more protective, and when this is the case, report higher online disinhibition than their less-anxious counterparts. This finding has implications for clinical practice, whereby professionals delivering online interventions for socially anxious individuals should be aware of factors that might contribute to disinhibition within online settings, drive a reliance on the internet for social connection, or explain the association between social anxiety and problematic internet use¹⁹.

Future Directions

Strengths of the current study include the large sample size and relatively even gender distribution. Importantly, the measures of protection and control online are applicable to multiple online channels and distinct from past measures of internet perceptions and affordances in that they distinguish between individuals' perceptions of digital environments and online disinhibition. However, while acknowledging the novel contribution of the current research, there are also limitations that must be considered.

First, the data were cross-sectional and as such, causal links cannot be determined. It is possible that bidirectional relationships exist between internet perceptions and online disinhibition, and therefore, longitudinal work is needed to determine the directionality of these effects. Second, our measures of protection and control are yet to be broadly validated and exploratory and confirmatory analyses were conducted with distinct groups of participants from the same overall sample. Further, while our findings were in the expected directions, our sample was predominantly comprised of first-year psychology students from an Australian university and therefore has limited generalizability. Future research should seek to confirm the factor structure and assess reliability of the measures in diverse samples. We also suggest that future research should endeavor to explore other factors that were removed in the course of our factor analyses, such as perceptions of the ability to engage in inauthentic self-presentation online. Finally, although self-report measures are critical when assessing individuals' perceptions of internet affordances, future research should include behavioral measures and a focus on specific tools, platforms, and ways of interacting online that may elucidate additional outcomes of perceptions of protection and control online.

Conclusion

It is imperative that research understands the impacts of social media and internet use on the cognitions and behaviors of youth, particularly as young adults' lives are now

conducted almost seamlessly across online and offline contexts. This study has advanced the available literature and offers an enhanced understanding of young adults' experiences within online contexts by exploring perceptions of protection and control online and how they are related to self-reported changes in behavior and cognition in online as compared to offline contexts. We encourage further exploration of perceptions of protection and control online, and how social anxiety may interact with internet perceptions in predicting online or social experiences. Our findings suggest that although perceptions of protection online are generally a key factor in predicting online disinhibition among young adults, the link between protection and online disinhibition is strongest for young adults higher in social anxiety.

Table 1

Descriptive statistics and Pearson correlations amongst Internet Perceptions Measures, Social Anxiety, Online Disinhibition, and Covariates (N = 687)

	1.	2.	3.	4.	5.	6.	7.	Mean (SD)
1. Protection	-							2.50 (0.93)
2. Control	.30***	-						3.97 (0.77)
3. Social Anxiety	.29***	.15***	-					1.36 (0.83)
4. Online Disinhibition	.54***	.15***	.46***	-				2.09 (0.89)
5. Time Online	.19***	.03	.16***	.27***	-			3.34 (1.97)
6. Age	-.05	-.04	-.03	-.06	-.12**	-		19.45 (2.07)
7. Gender ^a	-.01	.19***	.16***	-.04	-.04	-.12**	-	

Note. ^a Gender: 0 = Male, 1 = Female. Time Online: Hours spent online for social and leisure purposes.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2

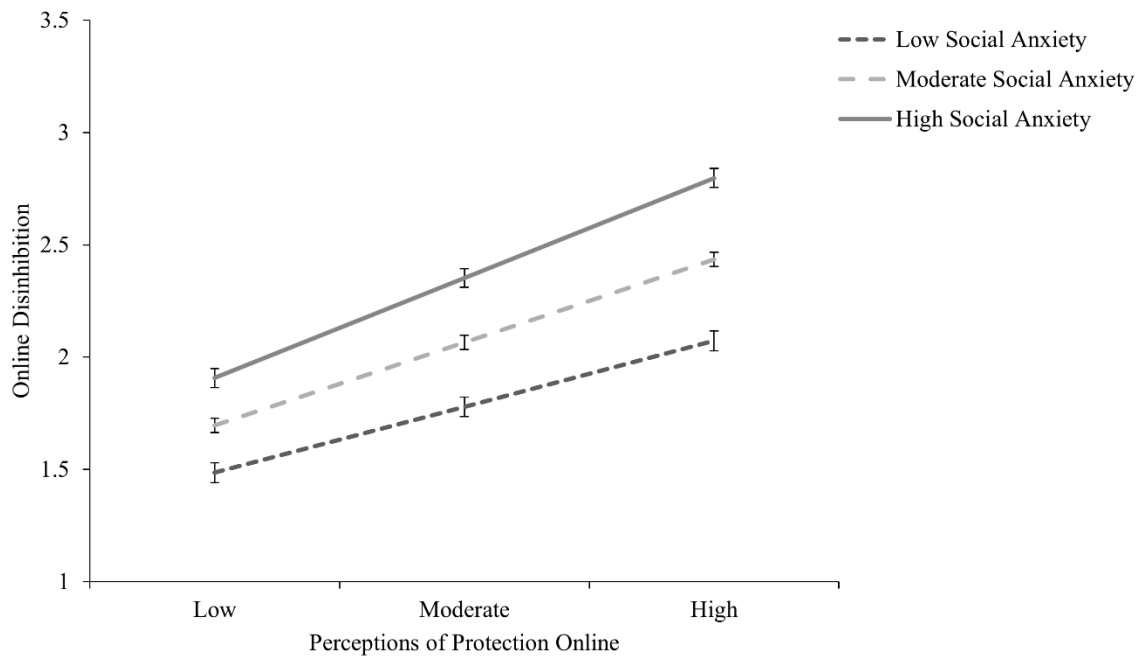
Summary of Moderated Multiple Regression Analysis, Testing the Effects of Social Anxiety on the Association between Internet Perceptions and Online Disinhibition (N = 687)

Variable	Step 1					Step 2					Step 3					Step 4				
	B	SE	β	t	p	B	SE	β	t	p	B	SE	β	t	p	B	SE	β	t	p
Gender ^a	-0.07	.07	-.04	-1.00	.320	-.06	.06	-.03	-0.97	.331	-.15	.05	-.09	-2.80	.005	-.15	.05	-.09	-2.85	.005
Age	-.02	.02	-.04	-0.96	.336	-.01	.01	-.02	-0.71	.478	-.01	.01	-.03	-0.93	.351	-.01	.01	-.03	-1.06	.290
Time online	.12	.02	.26	7.08	.000	.08	.02	.17	5.20	.000	.06	.01	.13	4.29	.000	.06	.01	.12	4.02	.000
Protection						.49	.03	.50	14.90	.000	.40	.03	.42	12.84	.000	.40	.03	.42	12.73	.000
Control						.00	.04	.00	-0.11	.914	-.02	.04	-.02	-0.47	.641	-.01	.04	-.01	-0.27	.788
Social Anxiety											.35	.03	.33	10.48	.000	.35	.03	.32	10.22	.000
Protection × Control																-.01	.04	-.01	3.01	.003
Protection × Social Anxiety																.10	.03	.09	0.35	.724
Control × Social Anxiety																.02	.05	.01	-0.32	.748
R ²	.074					.318					.413					.422				

Note. ^a Gender: 0 = Male, 1 = Female. Time online: Hours spent online for social and leisure purposes. Significant effects are presented in bold text.

Figure Legend:**Figure 1**

The Conditional Relationship between Perceptions of Protection Online and Online Disinhibition (controlling for covariates) at Low, Moderate, and High levels of Social Anxiety (N = 687). Error bars represent standard errors.



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Supplementary Materials

An initial pool of 28 items that measured perceptions of the internet as related to invisibility, anonymity, and the ability to exercise control online were developed from the literature and then co-designed with a sample of university students (citation omitted for review). The prompt to the items was: “The following statements relate to features of online digital environments that might allow people to think, feel and act differently online compared to offline.” Before conducting the following analyses, the data were subject to a random split into two sub-samples. Using the first sub-sample, Exploratory factor analysis (EFA) was conducted to determine the underlying factor structure of the internet perceptions measure, identify the number of factors to be retained, and reduce the number of items. For the EFA, maximum likelihood estimation and oblique (oblim) rotation were applied. Next, the second sub-sample was used to perform Confirmatory factor analyses (CFA) in Mplus to test the fit of the measures and to further reduce redundancy.

Exploratory Factor Analyses

To assess the structure of the internet perceptions measure, an EFA was conducted on the 28 affordances items, using the exploratory subsample ($n = 343$). See Table 3 for all items included in the initial EFA. The EFA initially yielded a 5-factor solution with eigenvalues greater than 1.0, explaining a total of 61.17% of the variance. Throughout the course of the EFA, two items were initially removed as they did not load onto any factors, and 11 items were removed on the basis of low factor loadings, cross-loading between factors or causing a lack of clarity in the factors and cross-loading of other items. The model was re-run after each individual item was removed. The remaining 15 items produced a 3-factor solution that

explained 60.72% of the variance. The first factor, labelled *Protection*, explained 37.89% of the variance and comprised of seven items (Eigenvalue = 5.68, $\alpha = .86$) that reflected opportunities to be protected, invisible or feel safe online. The second factor, labelled *Control*, explained 15.39% of the variance and included six items (Eigenvalue = 2.31, $\alpha = .86$) that reflected perceived control over their interactions and self-presentation online. Finally, the third factor, labelled *Inauthenticity* comprised two items and explained 7.44% of the variance (Eigenvalue = 1.11, $\alpha = .70$). The two items were: “On the internet, I can choose to present myself differently to how I am in real-life,” and “The internet allows me to post photos online that are not realistic.” However, this factor was removed from the model due to the two-item nature of the measure.

The final 13-item, 2-factor solution explained 57.57% of the variance. *Protection* explained 39.87% of the variance and *Control* explained 17.70% of the variance. The pattern matrix for the final EFA solution is presented in Table 4. The factors that emerged were consistent with and extended upon past theoretical and quantitative research and have been labelled in accordance with this work.

Confirmatory Factor Analyses

In the second stage of the analysis a Confirmatory Factor Analysis was conducted on the confirmatory sub-sample ($n = 344$) using Mplus version 8 (Muthén & Muthén, 2017). The first model tested all 13 items loading onto two distinct factors. The model demonstrated reasonable fit ($\chi^2(64) = 171.86$, $p < .001$, CFI = .94, RMSEA = .07 [0.06, 0.08], SRMR = .06), and no factor loadings were below .5 on any factor. Modification indices used to assess misfit suggested that two items, “I feel in control online because I can change my privacy settings,” and “I can choose to hide identifying information about myself online,” were cross-loading and had covariances with other items. These items were removed one at a time, respectively, and the model re-run. There was a significant improvement in model fit at each

step ($\Delta\chi^2(11) = 30.45, p = .001$, and $\Delta\chi^2(10) = 56.39, p < .001$). The final model comprised 11 items on two factors with good model fit ($\chi^2(43) = 85.02, p < .001$, CFI = .97, RMSEA = .05 [0.04, 0.07], SRMR = .04). See Table 5 for the Confirmatory factor analyses results and final internet perceptions measure.

Table 3*Original Items for the Internet Perceptions Measure with Final Scales and Stage Removed*

Item	Factor
I feel protected online because I am physically removed from others	Protection
The Internet allows me to feel safer online than in real-life	Protection
The Internet allows me to feel safe to express my thoughts and feelings online	Protection
The Internet allows me to act without concern of my personal insecurities	Protection
The Internet protects me from the judgement of others when they can't see me	Protection
The Internet allows me to be invisible	Protection
The Internet allows me to choose who I share content with online	Control
The Internet allows me to choose who I talk to and when to reply to messages	Control
The Internet allows me to control what information I present to others about myself	Control
The Internet allows me to control what I post online	Control
The Internet allows me to reply to messages when I feel ready	Control
Item	Stage Removed
The Internet allows me to physically hide behind a computer screen	Removed EFA
I can pretend that I am a different person online	Removed EFA
The Internet allows me to choose to be anonymous	Removed EFA
The Internet allows me to hide my true identity	Removed EFA
The Internet allows me time to think about what I want to say when talking to others online	Removed EFA
The Internet allows me to create an image for myself online	Removed EFA
The Internet hides the immediate, visible reactions of others when communicating online	Removed EFA
I can choose to share the most appealing and attractive parts of my life online	Removed EFA
The Internet allows me to avoid real-time interactions with others	Removed EFA
I can choose how to present myself online	Removed EFA
I share content online based on what receives the most positive feedback	Removed EFA
My online behaviors are motivated by receiving reactions (e.g., likes) from others	Removed EFA
The Internet allows me to create anonymous profiles	Removed EFA
On the Internet, I can choose to present myself differently to how I am in real-life	Inauthenticity, Removed EFA
The Internet allows me to post photos online that are not realistic	Inauthenticity, Removed EFA
I feel in control online because I can change my privacy settings	Removed CFA
I can choose to hide identifying information about myself online	Removed CFA

Table 4*Maximum Likelihood Pattern Matrix and Communalities of the Internet Perceptions Measure (N = 343)*

Item	Factor 1	Factor 2	Communalities
The internet allows me to feel safer online than in real-life	.80		.64
The internet protects me from the judgement of others when they can't see me	.78		.56
I feel protected online because I am physically removed from others	.75		.58
The internet allows me to feel safe to express my thoughts and feelings online	.68		.43
The internet allows me to act without concern of my personal insecurities	.64		.46
I feel in control online because I can change my privacy settings	.53		.40
The internet allows me to be invisible	.50		.31
The internet allows me to choose who I share content with online		.79	.61
The internet allows me to choose who I talk to and when to reply to messages		.72	.52
The internet allows me to reply to messages when I feel ready		.72	.49
The internet allows me to control what I post online		.70	.57
The internet allows me to control what information I present to others about myself		.64	.57
I can choose to hide identifying information about myself online		.54	.38
Eigenvalues	5.18	2.30	

Note. Factor loadings less than .3 are not presented.

Table 5

Confirmatory Factor Analyses Results and Final Measure of Internet Perceptions with Descriptive Statistics of Items (N = 344)

Item	Protection	Control	Mean (SD)
I feel protected online because I am physically removed from others	.81		2.31 (1.15)
The internet allows me to feel safer online than in real-life	.79		2.33 (1.18)
The internet allows me to be invisible	.72		2.32 (1.24)
The internet protects me from the judgement of others when they can't see me	.70		2.41 (1.20)
The internet allows me to act without concern of my personal insecurities	.68		2.46 (1.18)
The internet allows me to feel safe to express my thoughts and feelings online	.63		2.66 (1.16)
The internet allows me to choose who I talk to and when to reply to messages		.78	4.06 (0.97)
The internet allows me to reply to messages when I feel ready		.78	4.12 (0.98)
The internet allows me to control what information I present to others about myself		.73	3.71 (1.08)
The internet allows me to choose who I share content with online		.72	3.85 (0.97)
The internet allows me to control what I post online		.69	3.96 (0.98)

Note. Factor loadings less than .3 are not presented