CYBERBULLYING IMPACTS ON USERS' SATISFACTION WITH TECHNOLOGY

CYBERBULLYING IMPACTS ON USERS' SATISFACTION WITH INFORMATION AND COMMUNICATION TECHNOLOGIES: THE ROLE OF PERCEIVED CYBERBULLYING SEVERITY

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Abstract

Cyberbullying is a term that encompasses aggressive behaviours performed through different information and communication technologies (ICT), with the intention to harm or cause discomfort to others. Cyberbullying has gained prominence due to reported cases of teenage suicides linked to cyberbullying. Researchers have studied the prevalence and outcomes of cyberbullying (e.g. truancy) and strategies used by victims to deal with cyberbullying (e.g. email address change). However, researchers have not taken into account victims' perceptions of the severity of the cyberbullying they experience and how those perceptions affect them at a personal level and their experience with ICT.

This study combines Transactional Theory of Stress and Coping with the Expectation-Confirmation Theory and proposes two research models that will aid in understanding (i) the contextual factors that affect victims' perceptions of cyberbullying, and (ii) the consequences of those perceptions on victims' satisfaction with the ICT through which cyberbullying occurs. In addition, this study proposes two secondary objectives aimed at (i) developing and validating a scale to measure victims' perception of cyberbullying severity and (ii) exploring its impact on victims' use of different coping mechanisms.

A survey-based study involving 229 cyberbullying victims is employed to empirically validate the proposed theoretical models, using structural equation modeling techniques. Results indicate that victims' perception of the severity of a cyberbullying episode affects her/him at a personal level and negatively impacts her/his ICT beliefs, which in turn, impact her/his satisfaction with ICT. The analysis of different contextual factors indicates that the harshness of the message(s) the victim receives, the importance of the ICT through which cyberbullying occurred to her/him, her/his self-esteem, and knowing who the bully is affect a victim's evaluation of the severity of a cyberbullying episode. Implications of these results for academics and practitioners, as well as limitations of this study, are discussed.

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Chapter 1: Introduction

The use of information and communication technologies (ICT) by young adults has increased dramatically over the last decade, driven by the availability of mobile devices (e.g. tablets, mobile phones) and the growing popularity of social networking sites (e.g. Facebook). While the widespread availability of these ICTs has allowed young adults to seek information ubiquitously and to maintain and control their social lives (Madell & Muncer, 2007), it has also exposed them more to new risks (e.g. privacy violations, stress derived from technology - technostress). Even though ICT users in general may be susceptible to these risks, young adults are particularly vulnerable to risks such as technology addiction and cyberbullying (Livingstone, Haddon, Görzig, & Olafsson, 2011). According to Statistics Canada, the General Social Survey (GSS) in 2009 revealed that 7% of Internet users aged 18 and older reported having been a victim of cyberbullying. In addition, cyberbullying has gained prominence due to reported cases of suicides linked to cyberbullying. There have been 41 identified cases of suicide involving cyberbullying since 2003, in Canada, the US, Australia, and the United Kingdom (CBC News, 2012). Between 2012 and 2013, at least 9 cases of teenage suicides were linked to cyberbullying (Broderick, 2013).

Researchers have not agreed upon a unique definition of cyberbullying. As it will be presented later, there is a debate around the elements that characterize a cyberbullying episode[1]. In this dissertation, cyberbullying is defined as hostile or aggressive behaviours

[1] In this study, a cyberbullying episode may consist of one action (e.g. a photo posted on a group wall) or multiple actions related to the same issue (e.g. several messages sent over a week)

performed through information and communication technologies (ICT) (e.g. email, mobile phones) that are intended to harm or inflict discomfort on others (Li, 2007; Tokunaga, 2010; Johnson, 2011).

1.1. Research Motivation

Cyberbullying is a phenomenon that can have varied consequences on a victim, such as low academic scores, social anxiety, social isolation, self-harm, low self-confidence, and depressive symptoms (Johnson, 2011; Juvonen & Gross, 2008; Šleglova & Cerna, 2011; Tokunaga, 2010). In extreme cases, and as it was mentioned previously, such consequences may lead the victim to commit suicide (Wenger, 2012). According to Hinduja and Patchin (2010), victims of cyberbullying are almost twice as likely as non-victims to have attempted suicide.

In Canada, the awareness around cyberbullying has increased since 2012, due in part to the suicide of two teenage girls in 2012 and 2013. In 2012, Canada's justice and public safety ministers discussed the issue of cyberbullying, and became interested in learning more about strategies that can be used to prevent cyberbullying or reduce its negative consequences (The Canadian Press, 2012). At the end of that year, the Standing Senate Committee of Human Rights released a report examining cyberbullying and its impacts on young Canadians. In this report, the Committee presented six recommendations (Standing Senate Committee on Human Rights, 2012). The first one was the development of a coordinated strategy to address cyberbullying among the different government levels (i.e. federal, provincial, and territorial). In this regard, the report highlighted the need of

developing a whole community approach (i.e. involving not only personnel at school, but also parents, social service providers, government officials, and businesses) to facilitate sharing best practices and research across provinces regarding the most appropriate initiatives that can be implemented to raise awareness and reduce the incidence of cyberbullying.

The second recommendation was the inclusion of a human rights and digital citizenship component in the education of children. In this point, the Committee also suggested the implementation of initiatives such as involving children in creating codes of conduct that could engage them in finding solutions to cyberbullying. The third recommendation was the promotion of restorative justice. Here, the Committee acknowledged the variation in severity of different cyberbullying episodes and considered restorative justice not only as an alternative to deal with individual cases of cyberbullying, but also as a means to change school cultures where bullying is tolerated (e.g. through educational programs). The fourth recommendation was a partnership between the government and industry stakeholders to improve safety on the Internet (e.g. monitoring and removing offensive content). In this regard, the Committee pointed out the need to have easy mechanisms in web sites for people to report cyberbullying and have offensive material removed. It also highlighted that privacy settings on social media networks should be set to the safest level by default for children (Standing Senate Committee on Human Rights, 2012).

The fifth recommendation was to explore the establishment of task forces coordinated by the government to establish a uniform definition of cyberbullying and a consistent manner to monitor it. In this regard, the Committee highlighted that the lack of a common definition of cyberbullying reduces the possibility of understanding the phenomenon completely (along with its causes and consequences), and of explaining clearly to adults and young people what cyberbullying entails. The final recommendation for the federal government was to support long-term research projects associated with cyberbullying, in order to understand better this phenomenon and the influence of ICTs on the emotional and social development of young people. In this recommendation, some research gaps were highlighted (e.g. relation between cyberbullying and suicide, and pervasiveness of this form of victimization in young people's lives). It was also pointed out that research results need to be disseminated and accessible for those that work with young people (e.g. teachers, parents) (Standing Senate Committee on Human Rights, 2012).

Besides the interest of legislators in cyberbullying, there have been local initiatives to address this phenomenon. One example of those initiatives is the mobile application launched last year by Hamilton's public school board (located in Hamilton, Ontario), known as TipOff. With this application, students can anonymously report (the phone number is scrambled by the app) when they are bullied (either traditionally or by electronic means) (Craggs, 2013a). The application, the first one in Ontario, was pilot tested in four schools for a period of three months. During that time, 132 calls and texts were received and about 7% of them were cases of cyberbullying. After the pilot test, the

school board expanded the application to 52 schools in the city of Hamilton (Craggs, 2013b). Despite the success claimed by the board due to the increased reporting of bullying episodes, critics argue that there are several shortcomings to this type of applications: (i) it is difficult to investigate an anonymous complaint, and the perpetrator can go unpunished; (ii) it is difficult to prove someone is guilty, as the alleged bully can find excuses to justify what happened (e.g. someone created a fake profile using her/his name); and (iii) the application by itself is not going to address the issue unless the school acts on the information provided by it (e.g. programs to encourage positive student behaviour, offering support for the bullies and their parents) (Sagan, 2013).

Interest in the fairly recent phenomenon of cyberbullying has also come from researchers in different areas such as Information Systems, Psychology, Sociology, Criminology, and Education (Cassidy, Faucher, & Jackson, 2013). In the area of Information Systems (IS), researchers have focused mainly on the prevalence of this phenomenon (see for example Calvete et al. 2010; Huang & Chou, 2010), and the potential motivations and antecedents of online aggression (e.g. gaining social status; Law, Shapka, Domene, & Gagné, 2012). Tokunaga (2010) conducted a meta-synthesis of the studies published in cyberbullying between 2004 and 2009 and found that on average, 20 to 40% of young people have experienced episodes of cyberbullying. According to this author, the variation in prevalence rates is explained by the diverse definitions and measures used by researchers. Moreover, Tokunaga (2010, p.283) found that "research on cyberbullying has been conducted largely in the absence of theory". The use of theory is critical in conducting research, as it brings about two benefits: (i) the accumulation of

knowledge in a systematic manner, and (ii) the utilization of this knowledge to inform professional practices (Gregor, 2006). In the cyberbullying domain, the use of well-established theories is important to gain a deeper understanding of this phenomenon and how it affects victims.

Researchers in different areas have also explored the outcomes of cyberbullying, finding that this phenomenon impacts victims psychologically (e.g. creating negative emotions such as anger and anxiety; Beran and Li, 2005; Kowalski and Limber, 2013), academically (e.g. low marks; Beran & Li, 2007) and socially (e.g. altering victims' relationships with family members and friends; Price and Dalgleish, 2010; Šleglova & Cerna, 2011).[2] Interestingly, some authors have also found that certain victims are not affected by cyberbullying (e.g. Hinduja and Patchin, 2007; Ortega, et al., 2012). In addition, the EU Kids Online network conducted a qualitative study finding that perceptions and consequences of cyberbullying vary among victims. For example, they found that the same act (e.g. receiving sexual content) may provoke a different reaction (e.g. laughter or fear), depending on the victim; in the same vein, a written comment (e.g. name calling) may be perceived as a joke if coming from a friend, but as hurtful if coming from a stranger (Smahel & Wright, 2014). These findings highlight the importance of studying victims' perceptions of the severity of a cyberbullying episode when analyzing the impacts of cyberbullying on that victim's life. Such perceptions are likely to be influenced by a variety of contextual factors that characterize each

[2] A detailed overview of existing studies in cyberbullying is presented in Chapter 2 of this dissertation

cyberbullying episode (e.g. victim characteristics, nature of the cyberbullying message, presence of an audience, etc.).

Further, the EU Kids Online 2011 Report found that about 20% of the victims stopped using Internet applications for a while[3] when they experienced cyberbullying (Livingstone, Haddon, Görzig, & Olafsson, 2011). This indicates that cyberbullying not only affects victims at a personal level, but it may also have an impact on their experience with ICT. Although Sticca and Perren (2013) suggested that positive feelings derived from using ICTs may be reduced with cyberbullying, researchers in the Information Systems (IS) area have not investigated how cyberbullying episodes may affect users' experience with ICTs where cyberbullying occurs.

1.2. Research Objectives

This study addresses the above research issues and gaps, by trying to understand the mechanisms through which cyberbullying impacts users' satisfaction with the ICT through which cyberbullying occurred (henceforth to be referred to as cyberbullying medium, which includes Internet applications and/ or mobile phones) and by understanding the different aspects that affect the appraisal of a cyberbullying episode by a victim. The main research objectives of this study are as follows:

1. *To understand the influence of a victim's perception of the severity of a cyberbullying episode on her/his satisfaction with the cyberbullying medium.*

[3] The report does not provide details on how long participants stayed away from Internet applications.

2. *To understand the contextual factors that influence a victim's perception of the severity of a cyberbullying episode.*

In addition to these main objectives, this research also involves the following secondary objectives.

3. *To develop and/or validate measures for Perceived Cyberbullying Severity (PCS) and the factors that affect it.*
4. *To explore the influence of PCS on a cyberbullying victim's utilization of various coping mechanisms.*

1.3. Outline of Dissertation

The remainder of this dissertation document is organized as follows. Chapter 2 provides a literature review of the studies conducted in the area of cyberbullying. Chapter 3 presents the theoretical background for this research and details the research model and hypotheses that were tested with the research methodology described in Chapter 4. In Chapter 5, the results of data analyses conducted are presented. Finally, Chapter 6 provides a discussion of findings and outlines this study's contributions and limitations, as well as recommendations for future research directions.

Chapter 2: Literature Review

As mentioned in the previous chapter, researchers from different areas (e.g. Education, Psychology, IS) have dedicated their efforts to understand the cyberbullying phenomenon. The purpose of this chapter is to provide a review of the studies conducted in the area of cyberbullying, in order to understand the current state of research. To achieve this purpose, the chapter is organized as follows: Section 2.1 presents the elements that come from the definition of traditional bullying and how researchers have included them in the definition of cyberbullying. This section is supplemented by section 2.2, which describes the characteristics that researchers consider to be unique of this phenomenon. Section 2.3 presents the classifications created around the diverse forms of cyberbullying, and section 2.4 describes the measures used by cyberbullying researchers as well as the prevalence rates found. Section 2.5 outlines the main outcomes for victims of cyberbullying, and victims' coping mechanisms to deal with this phenomenon are presented in section 2.6. Finally, section 2.7 summarizes the findings of this literature review.

2.1 Definition of cyberbullying

Traditional bullying is considered to have taken place when the following three criteria are met (Olweus, 2013): (i) intentionality: the bully intends to inflict harm on the victim; (ii) repetition: the bully engages in this behaviour repeatedly; and (iii) power differential: a power imbalance exists between the bully and the victim (e.g. physical, social) to the benefit of the bully. These criteria distinguish traditional bullying from

other behaviours such as fights between friends or a singular act of aggression between peers (Pieschl, Porsch, Kahl, & Klockenbusch, 2013).

In defining cyberbullying, researchers have not agreed on how the above three criteria can be applied to this phenomenon. These are discussed below:

Intentionality: Some researchers argue that it is not easy to identify whether the bully intended to cause harm or discomfort to the victim. The nature of computer-mediated communication prevents individuals from using elements that in face-to-face communication would allow them to identify if another person is being ironic, teasing in a friendly way, or bullying them (e.g. body language, facial expressions, intonation of the voice) (Pieschl, Porsch, Kahl, & Klockenbusch, 2013). Along these lines, Langos (2012) proposed two alternatives for an observer to determine whether the intention to harm is present. First, when the bully sends messages directly to the victim (e.g. by instant messaging, text, or email), the repetition of this behaviour could indicate that this is not an isolated incident, and that the bully actually intended to cause harm to the victim. On the other hand, when the bully posts messages in a public area of cyberspace (e.g. a blog, YouTube, wall of a Facebook group), intentionality can be established if: (i) the bully makes the victim aware of the material (e.g. victim's name is tagged on a Facebook post) or (ii) the material posted is hostile or malicious (Langos, 2012).

However, other researchers argue that determining the intentionality of a cyberbullying episode should not consider what the bully aimed to do, but rather how a

victim perceives the episode (Nocentini, Calmaestra, Schultze-Krumbholz, Scheithauer, Ortega, & Menesini, 2010; Tattum, 1997).

Repetition: The behaviour can be conducted multiple times by the bully (e.g. she or he sends multiple e-mails or messages) (Slonje & Smith, 2008); in this case, the criterion of repetition can be directly applied to the notion of cyberbullying. However, some researchers point out that a single act carried out by a bully (e.g. posting a derogatory message on a web site) can result in continuous humiliation and ridicule for the victim, because others can view or resend the information (Dooley, Pyzalski, & Cross, 2009; Slonje, Smith, & Frisén, 2013; von Marées & Petermann, 2012). In this case, it can be considered that repetition occurs because the information is viewed, accessed, or shared multiple times (Langos, 2012). Due to the permanence of information posted on the Internet, and the possibility of having this information extensively disseminated, the repetition of behaviours may not be an important factor in cyberbullying (Fauman, 2008).

Power differential between the bully and the victim: Some authors argue that in cyberbullying such a differential arises from the bully's superior technical knowledge of ICTs and her/his ability to remain anonymous (Slonje, Smith, & Frisén, 2013; Vandebosch & Van Cleemput, 2008). However, Grigg (2010) states that there is no systematic research to demonstrate that cyberbullies have an actual advantage in terms of technological skills or knowledge over their victims. Other researchers argue that the power differential can be manifested by the victim's difficulty to control the cyberbullying behaviours and to remove material from the Internet (Dooley, Pyzalski, &

Cross, 2009; Langos, 2012; Cassidy, Faucher, & Jackson, 2013; Wong-Lo, Bullock, & Gable, 2011). Moreover, this power differential can be manifested through the perceived popularity of the bully (e.g. in terms of prestige, or dominance) (Pieschl, Porsch, Kahl, & Klockenbusch, 2013). In this view, and as argued by Olweus (2013), the power differential relies on a victim's perception and not on characteristics assessed by observers or the bully (e.g. technological skills).

2.2 Characteristics of cyberbullying

In addition to the elements from traditional bullying that are considered in establishing a widely accepted definition of cyberbullying, researchers have also investigated the characteristics that are unique to cyberbullying and that may increase its negative consequences for victims. First, cyberbullying can occur at any place and any time (Patchin & Hinduja, 2006; Kowalski & Limber, 2013; Kiriakidis & Kavoura, 2010). For example, although children and adolescents expect to feel safe at home (like they do in the case of traditional bullying), this phenomenon can happen around the clock and while victims are in class, in a family gathering, or even in their bedrooms (Mishna, Saini, & Solomon, 2009; Wong-Lo, Bullock, & Gable, 2011; Slonje, Smith, & Frisén, 2013; Cassidy, Faucher, & Jackson, 2013).

Second, in cyberbullying, the aggressors are able to remove themselves from the impact of their actions. Some of the bullies are anonymous, and this anonymity gives them possibilities such as creating new identities or impersonating a victim's friends (by accessing her/his account) (Kowalski & Limber, 2007; Wong-Lo, Bullock, & Gable,

2011). Anonymity may also generate fear in victims from the fact that the bullies know their identity while they are not aware of the true identity of the bully (Mishna, Saini, & Solomon, 2009). Anonymity may encourage cyberbullies to continue their behaviours, as it is easier for them to say or do things they would not in a face-to-face interaction (von Marées & Petermann, 2012; Kowalski & Limber, 2013). In this context, bullies are hard to identify and trace, which leaves them with little fear of repercussion or punishment (Slonje & Smith, 2008; Ybarra & Mitchell, 2004; Kiriakidis & Kavoura, 2010). In addition, when bullies are anonymous, victims may not be willing to report the cyberbullying episode as they may believe that it would not be possible to identify the bully (Mishna, Saini, & Solomon, 2009).

However, and despite that anonymity may differentiate cyberbullying from other aggressive online behaviours, the majority of victims know who is cyberbullying them (e.g. the bully is part of their social group) (Cassidy, Faucher, & Jackson, 2013; Mishna, Saini, & Solomon, 2009). In both cases (i.e. bully is anonymous or known), bullies do not see their victims' reactions, something that in traditional bullying makes bullies realize the harm they are causing to the victim and may help to inhibit them from further bullying actions (Kiriakidis & Kavoura, 2010; Kowalski & Limber, 2007; Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Slonje, Smith, & Frisén, 2013; von Marées & Petermann, 2012).

The third characteristic of cyberbullying is the bully's ability to easily reach a large audience. In traditional bullying, the audience of a bullying episode is limited to the

people physically present where the episode occurs (e.g. classrooms, hallways) (Kowalski & Limber, 2007). In cyberbullying, the nature of the media through which the episodes happen makes it easy for the material posted by the bully (e.g. derogatory comments, embarrassing photos) to be viewed by a large online audience (Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Wong-Lo, Bullock, & Gable, 2011; Slonje, Smith, & Frisén, 2013). Using hypothetical scenarios, Sticca and Perren (2013) found that situations where material was posted in front of an audience (e.g. on a Facebook page) were perceived as more distressing by participants than those where the material was sent to a person privately (e.g. by e-mail).

2.3 Types of cyberbullying

In addition to the debate around the characteristics of traditional bullying that can be applied to cyberbullying (section 2.1), researchers also differ in whether they include in their definition (Kowalski, Giumetti, Schroeder, & Lattanner, 2014): (i) examples of the different ICTs through which cyberbullying can occur, such as text messages, instant messaging, or social networking sites (see for example Beckman, Hagquist, and Hellström, 2013; Langos, 2012); or (ii) the diverse forms that cyberbullying can take, such as sending offensive messages, or sharing personal information without a person's consent (see for example Bonanno and Hymel, 2013; Patchin and Hinduja, 2006).

In terms of the medium, Ortega, Elipe, Mora-Merchán, Calmaestra, and Vega (2009) distinguished two types of cyberbullying: aggression using mobile phone (e.g. abusive text messages, upsetting phone calls), and aggression via the Internet (e.g. threatening

emails, intimidation in chat rooms). Some authors have utilized specific Internet applications. Smith, et al. (2008) used what they called seven different media to investigate cyberbullying: mobile phone calls, text messages, use of pictures of videos, chat rooms, instant messaging, and the use of websites. Hinduja and Patchin (2010) also included Internet-based applications (e.g. chat rooms, and instant messaging), in addition to email and a social networking site (e.g. MySpace). However, and as the use of Internet-based applications continues to evolve (e.g. social networking sites have an increased popularity, applications are used on mobile phones), some authors argue that it is better to focus on behaviours rather on the specific media used for cyberbullying (Cassidy, Faucher, & Jackson, 2013; Topçu & Erdur-Baker, 2010).

In terms of behaviours, one of the most cited classifications is that provided by Willard (2006), who identified seven categories grouping common cyberbullying actions: (1) flaming, which includes sending angry, rude, or vulgar messages about a person to that person or to a group of people; (2) online harassment, which includes sending offensive and repetitive messages to a person (e.g. via text message or email); (3) cyber-stalking, which is a form of online harassment that includes threats of harm that are highly intimidating; (4) denigration, which involves sending harmful and untrue statements about a person to others or posting this information online; (5) masquerading, which involves impersonation in order to make a particular person look bad; (6) outing, which involves sending or posting sensitive, private, or embarrassing information about a person (e.g. pictures, secrets); and (7) exclusion, which involves excluding a person from an online group.

Mishna, Saini, and Solomon (2009) also described cyberbullying in terms of possible behaviours: (1) posting and coercion, which involves taking photos for someone as a result of threats of disclosing personal information, (2) backstabbing, which involves taking revenge on a friend after a fight, when the friend believes the fight is over and s/he can keep trusting her/his friend, and (3) masquerading, which involves concealing a person's actions under the identity of another person (e.g. a peer, a friend). Although masquerading is included in both typologies as a cyberbullying behaviour, Nocentini, et al. (2010) found that this behaviour is more associated with criminal acts (such as theft) and not with cyberbullying. This particular behaviour is an example that shows that these typologies do not necessarily consider the application of the three criteria of intentionality, repetition, and power differential in selecting the behaviours that are considered as types of cyberbullying. Therefore, this contributes to the lack of uniformity and agreement around the definition of cyberbullying and the type of behaviours that can be considered part of this phenomenon.

Using the specific medium or the type of behaviour involved in categorizing the different types of cyberbullying not only affects the definition authors provide in their studies, but also the measures chosen. The variability in definitions and measures also affects the determination of cyberbullying prevalence as shown in the next section.

2.4 Prevalence and measures of cyberbullying

Researchers in different areas have explored the prevalence of cyberbullying among children and adolescents and have found rates as low as 0.5% (Salmivalli, Sainio, &

Hodges, 2013) and as high as 72% (Juvonen & Gross, 2008). In college students, the prevalence rates vary from 8.6% (Beran, Rinaldi, Bickham, & Rich, 2012) to 59% (Turan, Polat, Karapirli, Uysal, & Turan, 2011). This variation in prevalence rates could be explained not only by the diverse definitions used by authors, as described previously, but also by the different measures employed in cyberbullying studies (Price, Chin, Higa-McMillan, Kim, & Frueh, 2013).

In measuring cyberbullying, researchers have employed mainly two alternatives: single-item measures or multi-item checklists (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). In using single-item measures, most authors provide a definition of cyberbullying, as well as some behavioural examples of what this phenomenon entails; then, they present participants with a global question that determines whether individuals have experienced cyberbullying (Campbell, Spears, Slee, Butler, & Kift, 2012). When this approach is utilized, authors have found prevalence rates as low as 0.5% (Salmivalli, Sainio, & Hodges, 2013) and as high as 58% (Beran & Li, 2007). Other researchers do not present a definition, and only provide participants with a global question to determine whether they have been cyberbullied. With this measure, authors have found prevalence rates between 4.5% (Campbell, Spears, Slee, Butler, & Kift, 2012) and 59% (Turan, Polat, Karapirli, Uysal, & Turan, 2011). Although some researchers point out that the use of single-item measures is sufficient where the topic of reference is easy to recognize and understand (Menesini & Nocentini, 2009), others indicate that prevalence rates obtained with single-item measures may be lower than the ones obtained with multiple-item

measures (Gradinger, Strohmeier, & Spiel, 2010; Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Pieschl, Porsch, Kahl, & Klockenbusch, 2013).

In the case of multiple-item measures, researchers usually include a list of behaviours and ask participants to indicate the frequency with which they have experienced those behaviours (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). When this approach is used, researchers have obtained prevalence rates varying from 6% (Aricak, et al., 2008) to 72% (Juvonen & Gross, 2008). Advocates of this type of approach highlight that those measures can be more reliable and valid for predictions (Menesini, Nocentini, & Calussi, 2011). Moreover, participants may be more willing to report whether they have experienced a specific set of behaviours than to label themselves as victims (as a single-item measure would require them to do) (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). However, those lists of behaviours do not include all possible cyberbullying behaviours. Moreover, the ones included vary in their level of severity and make it complicated to interpret summed scores derived from them (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). Table 2.1 below summarizes the different measures and corresponding ranges of prevalence rates found in previous cyberbullying studies.

Table 2.1 Measures of cyberbullying and prevalence rates

Type of cyberbullying measure used	Prevalence rates (ranges)	Reference
Definition of cyberbullying presented and global question regarding	Below 10%	(Beckman, Hagquist, & Hellström, 2013), (Bonanno & Hymel, 2013) (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009), (Price, Chin, Higa-McMillan, Kim, &

Type of cyberbullying measure used	Prevalence rates (ranges)	Reference
frequency of occurrence		Frueh, 2013), (Salmivalli, Sainio, & Hodges, 2013), (Sourander, et al., 2010), (Wachs, 2012)
	10% - 20%	(Cappadocia, Craig, & Pepler, 2013), (Kowalski & Limber, 2007), (Kowalski & Limber, 2013), (Kraft & Wang, 2012), (Olenik-Shemesh, Heiman, & Eden, 2012), (Schneider, O'Donnell, Stueve, & Coulter, 2012), (Slonje & Smith, 2008), (Walker, Sockman, & Koehn, 2011), (Wang, Nansel, & Iannotti, 2011)
	21% - 30%	(Dehue, Bolman, & Völlink, 2008), (MacDonald & Roberts-Pittman, 2010), (Patchin & Hinduja, 2006), (Smith P. K., et al., 2008)
	31% - 40%	(Hinduja & Patchin, 2008), (Huang & Chou, 2010)
	51% - 60%	(Beran & Li, 2007)
Global question (answer yes/no, frequency)	Below 10%	(Campbell, Spears, Slee, Butler, & Kift, 2012), (Schenk & Fremouw, 2012), (Wolak, Mitchell, & Finkelhor, 2007), (Ybarra & Mitchell, 2004)
	21% - 30%	(Cénat, et al., 2014), (Chapin, 2014), (Li, 2007)
	51% - 60%	(Hoff & Mitchell, 2009), (Lwin, Li, & Ang, 2012), (Turan, Polat, Karapirli, Uysal, & Turan, 2011)
List of behaviours (e.g. being insulted, being threatened, having photos displayed without consent, receiving unwanted sexual text message)	Below 10%	(Aricak, et al., 2008), (Schultze-Krumbholz, Jäkel, Schultze, & Scheithauer, 2012)
	10% - 20%	(Didden, et al., 2009), (Hinduja & Patchin, 2010), (Selkie, Kota, & Moreno, 2014) (Sharples, Graber, Harrison, & Logan, 2009)
	21% - 30%	(Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012), (Navarro, Serna, Martínez, & Ruiz-Oliva, 2013), (Topçu, Erdur-Baker, & Çapa-Aydin, 2008), (Wong, Chan, &

Type of cyberbullying measure used	Prevalence rates (ranges)	Reference
		Cheng., 2014)
	31% - 40%	(Ybarra, Espelage, & Mitchell, 2007)
	50% - 60%	(Gámez-Guadix, Orue, Smith, & Calvete, 2013), (Kwan & Skoric, 2013), (Stewart, Drescher, Maack, Ebesutani, & Young, 2014), (Zhou, et al., 2013)
	71% - 80%	(Juvonen & Gross, 2008)
Not reported	9%	(Tomsa, Jenaro, Campbell, & Neacsu, 2013)

In some cyberbullying studies, researchers have focused on developing and validating multi-item scales to measure the extent to which individuals experience different forms of cyberbullying (see Çetin, Yaman, and Peker, 2011; Doane, Kelley, Chiang, and Padilla, 2013; Lam and Li, 2013; Tynes, Rose, and Williams, 2010). Other authors developed multi-item measures, without providing details on validation procedures (see Bauman, 2010; Menesini, Nocentini, and Calussi, 2011).

Table 2.2 below summarizes the type of behaviours included in the multi-item measures that have been employed in cyberbullying research.

Table 2.2 Behaviours included in cyberbullying measures

Behaviour included in the scale (where items reported)	Reference
Teasing, mocking	(Doane, Kelley, Chiang, & Padilla, 2013), (Lam & Li, 2013) (Çetin, Yaman, & Peker, 2011)
Deception	(Doane, Kelley, Chiang, & Padilla, 2013)
Exclusion	(Stewart, Drescher, Maack, Ebesutani, & Young, 2014),

Behaviour included in the scale (where items reported)	**Reference**
	(Tynes, Rose, & Williams, 2010)
Rumours	(Çetin, Yaman, & Peker, 2011), (Stewart, Drescher, Maack, Ebesutani, & Young, 2014), (Tynes, Rose, & Williams, 2010), (Ybarra, Espelage, & Mitchell, 2007)
Saying mean, nasty, rude things, calling names, insults	(Çetin, Yaman, & Peker, 2011), (Doane, Kelley, Chiang, & Padilla, 2013), (Hunt, Peters, & Rapee, 2012), (Lam & Li, 2013), (Menesini, Nocentini, & Calussi, 2011), (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009), (Price, Chin, Higa-McMillan, Kim, & Frueh, 2013), (Tynes, Rose, & Williams, 2010), (Ybarra, Espelage, & Mitchell, 2007)
Threats	(Hunt, Peters, & Rapee, 2012), (Lam & Li, 2013), (Menesini, Nocentini, & Calussi, 2011), (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009), (Selkie, Kota, & Moreno, 2014), (Stewart, Drescher, Maack, Ebesutani, & Young, 2014), (Ybarra, Espelage, & Mitchell, 2007)
Sharing content without permission (e.g. embarrassing photos), disclosing personal information	(Çetin, Yaman, & Peker, 2011), (Doane, Kelley, Chiang, & Padilla, 2013), (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009), (Stewart, Drescher, Maack, Ebesutani, & Young, 2014)
Sexual content (e.g. forced talk about sexual issues, unwanted sexual content, sexual images)	(Çetin, Yaman, & Peker, 2011), (Doane, Kelley, Chiang, & Padilla, 2013), (Selkie, Kota, & Moreno, 2014), (Tynes, Rose, & Williams, 2010), (Ybarra, Espelage, & Mitchell, 2007)
Violent pictures or videos	(Menesini, Nocentini, & Calussi, 2011), (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009)
Impersonation	(Çetin, Yaman, & Peker, 2011), (Selkie, Kota, & Moreno, 2014), (Stewart, Drescher, Maack, Ebesutani, & Young, 2014)

In addition to measuring and reporting the prevalence rates of cyberbullying (i.e. percentage of victims and percentage of bullies among participants), some researchers

have also reported the percentage of participants that have been involved in cyberbullying as both bullies and victims (i.e. bully-victims) (e.g. Didden, et al., 2009; Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012; Sourander, et al., 2010; Selkie, Kota, & Moreno, 2014).

Other researchers also measure whether participants have experienced traditional bullying (e.g. Campbell, Spears, Slee, Butler, & Kift, 2012; Låftman, Modin, & Östberg, 2013, Wachs, 2012). The rationale behind this measure is that traditional bullying occurs at higher rates than cyberbullying (Olweus, 2013) and thus, if traditional bullying is not measured, the prevalence rates of cyberbullying may be inflated. For example, a participant may report being a victim of cyberbullying because s/he does not have any other place to report that s/he has experienced traditional bullying (Kowalski, Giumetti, Schroeder, & Lattanner, 2014).

2.5 Outcomes of cyberbullying

In addition to the prevalence of cyberbullying, researchers have also investigated its outcomes for victims. There is evidence that cyberbullying makes victims experience negative emotions such as anger (e.g. Beran & Li, 2005; Campbell, Spears, Slee, Butler, & Kift, 2012), anxiety (e.g. Price, Chin, Higa-McMillan, Kim, & Frueh, 2013; Kowalski & Limber, 2013), and sadness (e.g. Price & Dalgleish, 2010). Other psychological outcomes that cyberbullying victims experience include feelings of loneliness (e.g. Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009; Olenik-Shemesh, Heiman, & Eden, 2012) and depressive symptoms (e.g. Machmutow, Perren, Sticca, & Alsaker,

2012; Gámez-Guadix, Orue, Smith, & Calvete, 2013). Some authors have found that cyberbullying increases victims' depressive symptoms over and beyond the impact of traditional bullying (e.g. Bonanno & Hymel, 2013; Machmutow, Perren, Sticca, & Alsaker, 2012).

Cyberbullying can also create problems in diverse areas of victims' lives. This phenomenon can affect victims physically, making them feel ill (e.g. headaches, stomach aches; Låftman, Modin, & Östberg, 2013), have poor appetite (e.g. Kowalski & Limber, 2013), or gain weight (e.g. Šleglova & Cerna, 2011). In addition, victims of cyberbullying may experience academic problems such as low marks and truancy (e.g. Beran & Li, 2007; Katzer, Fetchenhauer, & Belschak, 2009), as well as behavioural problems such as alcohol intake (e.g. Hinduja & Patchin, 2007) and substance use (e.g. Gámez-Guadix, Orue, Smith, & Calvete, 2013).

Cyberbullying can also affect victims socially, creating problems in their relationships with friends and family (e.g. Price & Dalgleish, 2010). Cyberbullying may also increase suicidal ideation among victims (Kowalski & Limber, 2013), who are almost twice as likely as non-victims to have attempted suicide (Hinduja & Patchin, 2010). Lastly, it is important to note that researchers have also found that some victims are not bothered by cyberbullying[4] (e.g. Ortega, et al., 2012; Topçu, Erdur-Baker, & Çapa-Aydin, 2008). Table 2.3 below summarizes the impacts produced by cyberbullying on victims.

[4] The percentage of victims that report not being affected by cyberbullying varies between 7% and 35%.

Table 2.3 Impacts of cyberbullying

Type of impact	Impact	Reference
Academic	Poor concentration, low marks, truancy, low school attachment, low academic achievement	(Beran & Li, 2007), (Beran, Rinaldi, Bickham, & Rich, 2012), (Dehue, Bolman, & Völlink, 2008), (Katzer, Fetchenhauer, & Belschak, 2009), (Kowalski & Limber, 2013), (Kraft & Wang, 2012), (Schneider, O'Donnell, Stueve, & Coulter, 2012)
Behavioural	Drinking alcohol, smoking marijuana, problematic internet use	(Dredge, Gleeson, & de la Piedad Garcia, 2014), (Hinduja & Patchin, 2007), (Gámez-Guadix, Orue, Smith, & Calvete, 2013)
Negative emotions	Anger, sadness, frustration, anxiety, fear	(Beran & Li, 2005), (Beran, Rinaldi, Bickham, & Rich, 2012), (Campbell, Spears, Slee, Butler, & Kift, 2012), (Dehue, Bolman, & Völlink, 2008), (Dredge, Gleeson, & de la Piedad Garcia, 2014), (Hinduja & Patchin, 2007), (Hoff & Mitchell, 2009), (Juvonen & Gross, 2008), (Kowalski & Limber, 2013), (Kraft & Wang, 2012), (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009), (Ortega R. , et al., 2012), (Price, Chin, Higa-McMillan, Kim, & Frueh, 2013), (Price & Dalgleish, 2010), (Schenk & Fremouw, 2012), (Spears, Slee, Owens, & Johnson, 2009) (Topçu, Erdur-Baker, & Çapa-Aydin, 2008), (Turan, Polat, Karapirli, Uysal, & Turan, 2011), (Ybarra & Mitchell, 2004)
Physical	Health (e.g. gaining weight, headaches, upset stomach)	(Låftman, Modin, & Östberg, 2013), (Kowalski & Limber, 2013), (Šleglova & Cerna, 2011)
Psychological	Depression, feelings of loneliness	(Baker & Tanrikulu, 2010), (Bonanno & Hymel, 2013), (Cénat, et al., 2014), (Didden, et al., 2009), (Gámez-Guadix, Orue, Smith, & Calvete, 2013), (Machmutow, Perren, Sticca, & Alsaker, 2012), (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009), (Ortega R. , et al., 2012), (Olenik-Shemesh, Heiman, & Eden, 2012), (Price, Chin, Higa-McMillan, Kim, & Frueh, 2013), (Schenk & Fremouw, 2012),

Type of impact	Impact	Reference
		(Schultze-Krumbholz, Jäkel, Schultze, & Scheithauer, 2012), (Schneider, O'Donnell, Stueve, & Coulter, 2012)
Social	Friendships, family relationships, distrust of other people, social isolation, problems with peers	(Price & Dalgleish, 2010), (Šleglova & Cerna, 2011), (Sourander, et al., 2010), (Spears, Slee, Owens, & Johnson, 2009)
Suicide	Suicidal ideation, suicide attempts	(Bonanno & Hymel, 2013), (Gini & Espelage, 2014), (Hinduja & Patchin, 2010), (Kowalski & Limber, 2013), (Schenk & Fremouw, 2012)
No impact		(Beran, Rinaldi, Bickham, & Rich, 2012), (Dredge, Gleeson, & de la Piedad Garcia, 2014), (Hinduja & Patchin, 2007), (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009), (Ortega, et al., 2012) (Topçu, Erdur-Baker, & Çapa-Aydin, 2008)

2.6 Coping with cyberbullying

Along with the outcomes of cyberbullying, researchers have also focused on the strategies that victims use to deal with this phenomenon. Perren, et al. (2012) conducted a review on responses to cyberbullying and found that the coping mechanisms used by victims (or suggested by non-victims) can be grouped in four categories. The first one is the use of solutions that involve technology, in which there are suggested alternatives such as blocking the bully's contact (e.g. Juvonen & Gross, 2008), changing accounts or e-mail addresses (e.g. Kraft & Wang, 2012), contacting server/website administrators and reporting the bully (e.g. Šleglova & Cerna, 2011), and deleting the offensive material (e.g. Zhou, et al., 2013).

The second group comprises actions aimed at confronting the bully. In this group, there are actions that involve retaliation (e.g. Dehue, Bolman, & Völlink, 2008) and also direct confrontation to make the bully stop (e.g. Price & Dalgleish, 2010). In a study conducted by Dooley, Shaw, and Cross (2012), it was found that the use of confrontation by victims could lead them to engage in negative behaviours (e.g. fights).

The third group of strategies used by victims to deal with cyberbullying is seeking social support. With this strategy, victims often try to find someone with authority (e.g., parents, police) to put an end to the cyberbullying episode or to obtain advice on how to deal with this situation (Parris L. , Varjas, Meyers, & Cutts, 2012). Some victims tell their parents or teachers about the cyberbullying situation (e.g. Dooley, Shaw, & Cross, 2012) or look for help with counselling agencies (e.g. Kids Helpline; Price and Dalgleish, 2010). To a lesser extent, victims go to administrative personnel at school (e.g. counsellors; Kraft & Wang, 2012) since they generally believe that administrative personnel would not take the situation seriously, would not handle it confidentially, or would do nothing to help the student reporting it (Hoff & Mitchell, 2009). In addition to figures with authority, victims go to their friends or classmates for help (e.g. Topçu, Erdur-Baker, & Çapa-Aydin, 2008; Zhou, et al., 2013).

The last group of coping mechanisms involves avoiding or ignoring the situation. Some victims may pretend the cyberbullying episode did not happen (e.g. Dehue, Bolman, & Völlink, 2008). Others may stay away from the ICTs where the cyberbullying episode occurred (e.g. website, social networking site) (Dooley, Shaw, & Cross, 2012;

Parris L. , Varjas, Meyers, & Cutts, 2012). Finally, some victims decide to ignore the cyberbullying episode or do nothing about it (e.g. Zhou, et al., 2013) or may use other activities as diversion tactics (e.g. practicing sports, eating excessively; Šleglova & Cerna, 2011).

In their review of the coping studies conducted in the area of cyberbullying, Perren et al. (2012) found that although some studies have examined whether victims have used certain coping mechanisms, others have used hypothetical cyberbullying scenarios to evaluate the extent to which participants would employ any coping mechanisms. In addition, it is important to note that cyberbullying researchers have not delved into the motivations behind the use of a particular type of coping mechanism by victims. Table 2.4 below summarizes the studies that have investigated the use of coping mechanisms in cyberbullying episodes.

Table 2.4 Coping strategies employed in cyberbullying

Coping strategy reported	Reference
Confronting the bully (e.g. telling the bully to stop, retaliating)	(Aricak, et al., 2008), (Bauman, 2010), (Smith P. K., et al., 2008), (Machmutow, Perren, Sticca, & Alsaker, 2012), (Pieschl, Porsch, Kahl, & Klockenbusch, 2013), (Wong, Chan, & Cheng., 2014)*
	(Dehue, Bolman, & Völlink, 2008), (Dooley, Shaw, & Cross, 2012), (Hoff & Mitchell, 2009), (Price & Dalgleish, 2010), (Schenk & Fremouw, 2012), (Šleglova & Cerna, 2011), (Stacey, 2009) (Zhou, et al., 2013)
Using technology (e.g. changing usernames, blocking the bully, contacting service provider)	(Aricak, et al., 2008), (Pieschl, Porsch, Kahl, & Klockenbusch, 2013), (Smith P. K., et al., 2008)*
	(Juvonen & Gross, 2008), (Kraft & Wang, 2012), (Price & Dalgleish, 2010), (Šleglova & Cerna, 2011), (Stacey, 2009), (Zhou, et al., 2013)
Seeking social support (e.g.	(Aricak, et al., 2008), (Bauman, 2010), (Machmutow K. ,

Coping strategy reported	Reference
telling friends, siblings, parents, or a teacher)	Perren, Sticca, & Alsaker, 2012), (Pieschl, Porsch, Kahl, & Klockenbusch, 2013), (Smith P. K., et al., 2008), (Stacey, 2009)*
	(Dooley, Shaw, & Cross, 2012), (Hoff & Mitchell, 2009), (Kraft & Wang, 2012), (Parris L. , Varjas, Meyers, & Cutts, 2012), (Price & Dalgleish, 2010), (Schenk & Fremouw, 2012), (Šleglova & Cerna, 2011), (Topçu, Erdur-Baker, & Çapa-Aydin, 2008), (Völlink, Bolman, Dehue, & Jacobs, 2013), (Zhou, et al., 2013)
Avoiding/ignoring the situation	(Aricak, et al., 2008), (Bauman, 2010), (Machmutow, Perren, Sticca, & Alsaker, 2012), (Wong, Chan, & Cheng., 2014)*
	(Dehue, Bolman, & Völlink, 2008), (Dooley, Shaw, & Cross, 2012), (Parris L. , Varjas, Meyers, & Cutts, 2012), (Šleglova & Cerna, 2011), (Zhou, et al., 2013)

* The upper part of each row includes studies where hypothetical cyberbullying scenarios were used or where participants (not necessarily victims) were asked what they would recommend as a strategy to deal with a cyberbullying episode.

2.7 Summary of the literature review

The literature review presented above leads to three conclusions. First, the high variation in prevalence rates of cyberbullying due to the different definitions and measures adopted by researchers pinpoints the need of using alternative measures when evaluating cyberbullying experiences. In the selection of an appropriate alternative measure, two elements need to be considered. First, individual differences affect persons' beliefs, attitudes, and behaviours (Devaraj, Easly, & Crant, 2008). Second, it is likely that the degree to which victims are affected depends on their own perceptions of a particular cyberbullying episode (e.g. whether the victim perceives the message sent by the bully intended to cause harm). Therefore, an alternative measure to employ when analyzing the

cyberbullying phenomenon needs to consider victims' perceptions. Specifically, a construct to measure a victim's perception of the severity of a cyberbullying episode is introduced in this study as it is considered suitable to capture how victims evaluate a particular cyberbullying episode. It is worth noting that a previous study by Bastiaensens, Vandebosch, Van Cleemput, DeSmet, & De Bourdeaudhuij (2014) explored the perceptions of severity of participants in their study by using an index with five items (differential scale with the terms problem, severe, amusing, hurtful, and funny) to evaluate hypothetical cyberbullying scenarios. However, this study did not ask participants to rate the severity of those scenarios as the victims in those situations; the study was interested in their perceptions as bystanders of those scenarios (i.e. members of an audience). The appropriateness of developing and using a measure of victims' perceived cyberbullying severity is also supported by the finding that some victims are not affected at all by cyberbullying episodes (as mentioned in section 2.5). Evaluating the perception of severity of a cyberbullying episode may be useful in explaining the diverse range of outcomes that victims of cyberbullying may experience.

Second, multiple aspects of the context need to be integrated into theory development to generate insights about a particular phenomenon (Hong, Chan, Thong, Chasalow, & Dhillon, 2014). In the context of cyberbullying, factors that are specific to this phenomenon may be relevant in determining its impacts on victims' lives. For example, it is worth exploring whether a victim is more affected when a bully is anonymous or when the bully is known to her/him. In addition, and since cyberbullies can reach a large audience, it is worth studying how the presence of an audience impacts

how a victim experiences a cyberbullying episode. The evaluation of those and other contextual characteristics of cyberbullying (e.g. characteristics of the messages a victim receives during an episode) would help in understanding how each of these contextual factors impacts a victim's perception of severity of a cyberbullying episode.

Finally, and as discussed earlier in section 2.6, studies that have evaluated coping mechanisms to deal with cyberbullying episodes have not explored victims' motivations in using a particular coping mechanism or a set of them. This warrants studying how a victim's perception of the severity of a cyberbullying episode affects their utilization of different coping mechanisms.

The next chapter discusses the development of the research models proposed in this study to address the above issues and their associated hypotheses in detail.

Chapter 3: Theoretical development

To address the main research objectives of this study, this chapter presents and builds on appropriate theories to develop two theoretical models. In the first model, the impact of perceived cyberbullying severity (PCS) on victims' satisfaction with the cyberbullying medium is explored through two paths: personal impacts of cyberbullying and impacts on ICT beliefs. The second model accounts for the relevant factors of the cyberbullying context that affect a victim's evaluation of cyberbullying severity. Section 3.1 explains the relevant theoretical background of these models. Sections 3.2 and 3.3 present the proposed theoretical models, along with their associated hypotheses and theoretical support. Finally, section 3.4 summarizes this chapter.

3.1 Theoretical Background

When individuals become victims of cyberbullying, they exhibit symptoms of stress such as irritability, constant thinking about the cyberbullying episode, and loss of interest in other things (Campfield, 2006). As such, cyberbullying can be considered a stressful situation that can lead to varied outcomes for a victim's life (e.g. frustration, psychosocial problems) (Tokunaga, 2010). Considering the stressful nature of a cyberbullying episode and the need to incorporate victims' perceptions when analyzing a particular cyberbullying episode, this study drew on the Transactional Theory of Stress and Coping (Lazarus & Folkman, 1984) to analyze the effects of an episode on a victim. This theory allows studying the consequences of a particular stressful situation (e.g. a cyberbullying episode), by considering how the individual experiencing it appraises that situation.

Sticca and Perren (2013) suggest that a cyberbullying episode can also affect a victim's experience with the ICT through which cyberbullying occurs (i.e. cyberbullying medium), by reducing the positive feelings or pleasure the victim may derive from using it. Therefore, a theory to evaluate users' experiences with ICT after adoption is needed to understand the impact of a cyberbullying episode on victims' experiences with the cyberbullying medium. Therefore, Expectation-Confirmation Theory (Oliver, 1980), a theory that has been used to study consumers' satisfaction with products (e.g. information systems) after purchase, is also employed in this study to understand how the victims' beliefs around a particular ICT (cyberbullying medium) may change as a result of cyberbullying. A brief review of these theories is presented below.

3.1.1 Transactional Theory of Stress and Coping (TTSC)

Lazarus and Folkman (1984) proposed a transactional approach of the stress process. The authors defined psychological stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding her/his resources and endangering her/his well-being" (Lazarus & Folkman, 1984, p. 19). This definition highlights the fact that although there are objective conditions that can be considered as stressors (e.g. natural disasters, taking an important examination, having an argument with a spouse), individuals will vary in the degree and type of reaction to these stressors. In order to understand the varying reactions of individuals when facing the same stressful situation, it is necessary to understand the cognitive processes that take place between the stressor and the reaction. TTSC proposes cognitive appraisal as this

intervening process, which can be understood as "the process of categorizing an encounter, and its various facets, with respect to its significance for well-being" (Lazarus & Folkman, 1984, p. 31). Cognitive appraisal mediates reactions and reflects the changing relationships between individuals with certain characteristics (e.g. values, thinking style) and an environment that must be predicted and interpreted (Lazarus & Folkman, 1984).

TTSC includes two types of cognitive appraisal: a primary appraisal of the stressor and a secondary appraisal of the coping mechanisms available to reduce the effects of the stressor (Perrewé & Zellars, 1999). In the primary appraisal phase, individuals determine if and how the situation is relevant to their goal attainment or well-being. Individuals in the primary appraisal phase may ask themselves 'Am I in trouble, now or in the future, and in what way?' (Lazarus & Folkman, 1984, p. 31). There are three types of possible outcomes of this primary appraisal phase (Lazarus & Folkman, 1984). The first one is when the stressor is deemed as irrelevant, because the situation has no implications for an individual's well-being, and the person has nothing to lose or gain in the situation. In this case, stress is not aroused. The second type is when the stressor is deemed as benign-positive, where the outcome of the situation is seen as positive (e.g. it may enhance well-being). In those situations, the appraisal is characterized by pleasurable emotions (e.g. joy, love, peacefulness). The third type is when the stressor is deemed as stressful, and it occurs when the situation affects negatively goals and/or well-being. It is in this last type of outcome that individuals move to the secondary appraisal phase, where they evaluate if anything can be done to deal with the stressful situation (Lazarus, 2001).

The secondary appraisal phase is a complex mental process, where the individual needs to determine the coping mechanisms that are available to her/him, the likelihood that any of them will accomplish what it is supposed to do, and whether the individual can apply a particular coping mechanism effectively (Lazarus & Folkman, 1984). The interaction of the primary and secondary appraisal phases shapes the degree of an individual's stress, as well as the strength of her/his emotional reaction to a stressful situation. Furthermore, these two phases of appraisal determine the extent to which a situation is appraised as harm, a threat, or a challenge (Folkman, 2008). Harm refers to damage that has already occurred (e.g. injury or illness, recognition of damage to self-esteem, loss of a valued person), and threat refers to a future potential damage (e.g. consequences of a disease that do not affect the individual at the present time, but will affect her/him in the future) (Lazarus & Folkman, 1984). Finally, challenge focuses on potential gains in the future and produces a positive motivation in individuals to overcome obstacles (Lazarus, 2001).

The appraisal of a stressful situation is affected by some situational characteristics. In particular, TTSC identifies three factors that can affect an individual's identification of a situation as harmful or threatening that are relevant in the context of this study. The first factor is novelty, which refers to situations with which the individual has no experience. Although completely novel situations are rare, as individuals may have information about situations from others, a novel situation will be considered stressful only if it is previously associated with harm or danger (e.g. based on others' experiences). The second factor is uncertainty, which refers to an individual's confusion about the meaning

of a situation. Uncertain situations are considered highly stressful. The final factor is duration, which refers to how long a stressful event persists. Enduring or chronic stressful situations may affect an individual psychologically and physically (Lazarus & Folkman, 1984).

According to Folkman (2008), coping processes are initiated in response to the appraisal of the stressful situation. TTSC does not view coping as a trait, that is, as a property of individuals that dispose them to react consistently in certain ways. Instead, this theory follows a process-oriented approach to coping. This process-oriented approach has three main characteristics: (1) the assessment of coping alternatives is concerned with what the individual actually does or thinks, as opposed as to what s/he should or would do; (2) coping mechanisms are directed to particular situations, and therefore, it is important to understand the situation the individual is coping with, in order to evaluate the coping mechanisms employed; and (3) the coping mechanisms available may change as the stressful situation unfolds (e.g. one coping mechanism may be effective at one point in time, but not in another) (Lazarus & Folkman, 1984).

There are at least two major functions of coping (i.e. the purpose of a particular coping mechanism): The first one is problem-focused coping, whose function is to "change the troubled person-environment relationship by acting on the environment or oneself" (Lazarus, 1993, p. 238). As such, problem-focused mechanisms are directed at defining the problem, generating alternative solutions, choosing among them, and acting (Lazarus & Folkman, 1984). Examples of mechanisms that can be considered problem-

focused are action coping (i.e. taking actions aimed at solving the stressful situation) and instrumental support (i.e. involving others to address the stressful situation) (Duhachek, 2005). The second function is called emotion-focused coping, which is aimed at regulating emotions tied to the stressful situation (e.g. avoid thinking of the situation) (Lazarus, 2001). As such, emotion-focused coping leads to a change in the way the situation is interpreted without changing it (Lazarus & Folkman, 1984). Examples of emotion-based coping are emotional support (i.e. seeking out others for comfort) and avoidance coping (i.e. distancing psychologically or physically from the stressful situation). In general, problem-focused coping is used when the appraisal process indicates that the situation is amenable to change; on the other hand, emotion-focused coping is used when the appraisal indicates there is nothing that can be done to modify harmful or threatening situations (Folkman & Lazarus, 1985). However, and depending on the situation individuals are facing, they may also use a combination of these mechanisms (Lazarus & Folkman, 1984).

Transactional Theory of Stress and Coping has been applied in diverse contexts, such as coping with disruptive ICT-related events at the workplace (e.g. Beaudry & Pinsonneault, 2005), competitive sports (e.g. Nicholls, Polman, & Levy, 2012), organizational mergers (e.g. Amiot, et al., 2006), stress in caregivers (e.g. Fitzell & Pakenham, 2010; Quine & Pahl, 1991), stress in school teachers (e.g. Spilt, Koomen, & Thijs, 2011), stress in university employees (e.g. Mark & Smith, 2012), and gambling (e.g. Tang, Chua, & Wu, 2011). This theory offers a suitable framework to study the impacts of cyberbullying episodes on victims. Cyberbullying episodes are situations that

may be appraised as harmful or threatening to certain extents, depending on the characteristics of the situation (e.g. the message received by the victim, the medium through which the message is sent, knowing the bully, and having an audience witnessing the episode) and the characteristics of the victim. The appraisal of these episodes as stressful will negatively affect the victims (e.g. negative emotions, low school performance) and will lead them to possibly employ coping mechanisms (e.g. ask someone for help) to counteract these stressful situations.

3.1.2 Expectation-Confirmation Theory

The Technology Acceptance Model (TAM) (Davis, Bagozzi, & Warshaw, 1989) is a well-established framework for studying ICT acceptance, which focuses on two key antecedents to individuals' intention to use an ICT (i.e. perceived usefulness and perceived ease of use). However, after initial adoption and when users gain experience with the ICT, the effect of perceived ease of use on the intention to use the ICT is weaker (Venkatesh & Bala, 2008). Moreover, after initial adoption, some users may discontinue their ICT use and this phenomenon cannot be explained using the TAM variables alone (Bhattacherjee, 2001). Given the importance of continuous ICT use for the success of IS at the organizational level, as well as the business to consumer (B2C) e-commerce applications, IS researchers (e.g. Bhattacherjee, 2001) have relied on the Expectation-Confirmation Theory (Oliver, 1980) to explain the factors that determine individuals' intentions to continue using ICTs.

The Expectation-Confirmation Theory (ECT) is drawn from the consumer behaviour literature and has been used to study consumers' satisfaction and their post-purchase behaviour (e.g. repurchase) (see Figure 3.1). ECT describes a process where consumers that do not have experience with a particular product, but are interested in buying it, rely on advertisement and consumer guides to acquire information about that product. This information conveys the benefits and drawbacks of the product and provides consumers with specific expectations about that product's likely performance (Oliver, 2010). After consumers buy and use the product for a period of time, they develop perceptions about its performance. These perceptions are compared with the initial expectations consumers held, resulting in a judgment of better-than-expected, same-as-expected, or worse-than-expected. This summary judgment is referred to as confirmation of expectations. As a result of a cognitive appraisal as to whether their initial expectations were confirmed, consumers develop an affective state called satisfaction. At the end, satisfied consumers will be more likely to form a repurchase intention (Oliver, 1980).

Expectation-Confirmation Theory has been applied in IS studies examining users' satisfaction and intentions to continue using ICTs in the contexts of online communities (Jin, Zhou, Lee, & Cheung, 2013), blogs (Hsieh C.-C. , Kuo, Yang, & Lin, 2010) and e-commerce (Kim, Ferrin, & Rao, 2009; Kim, 2012). One of the most widely adopted versions of this theory in the context of satisfaction and IS continuance is the Expectation-Confirmation Model of IS Continuance developed by Bhattacherjee (2001). This model has been used in the contexts of e-commerce (e.g. Dai, Huang, & Yi, 2005; Brown & Jayakody, 2008), mobile Internet services (e.g. Deng, Turner, Gehling, &

Prince, 2010; Kim, 2010; Thong, Hong, & Tam, 2006), e-learning (e.g. Lee, 2010; Liao, Chen, & Yen, 2007; Roca, Chiu, & Martinez, 2006), and organizational applications (e.g. ERP systems, document management systems; Bhattacherjee, Perols, & Sanford, 2008; Hsieh & Wang, 2007; Sorebo & Eikebrokk, 2008).

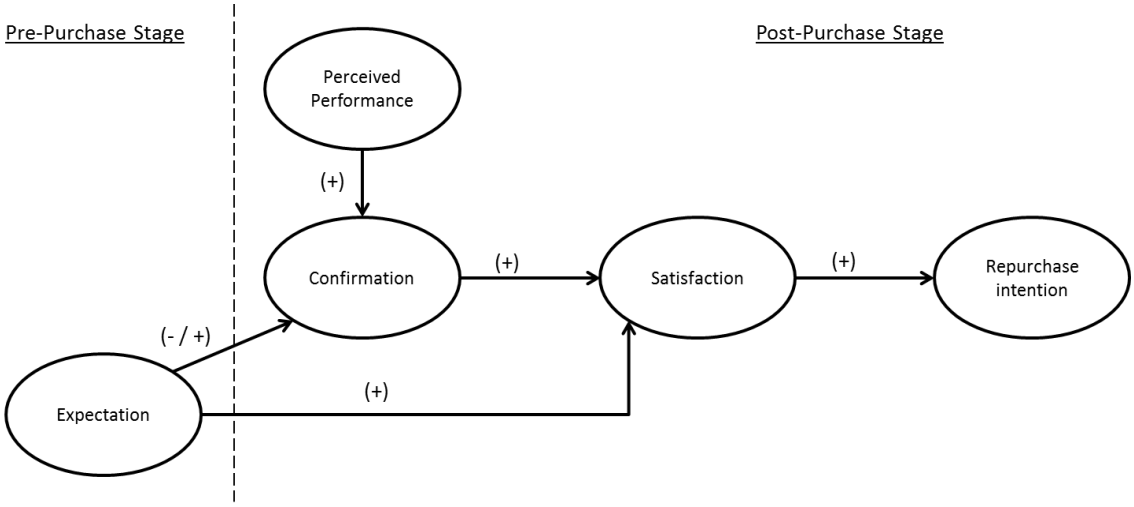

Figure 3.1 Expectation-Confirmation Theory (Source: Kim, 2012)

In the context of this research, Expectation-Confirmation Theory is deemed to be particularly useful in understanding how a particular cyberbullying episode may impact the experience of a victim with ICTs. In particular, it is expected that the severity of a cyberbullying episode will impact victims' satisfaction with the ICT through which they experienced cyberbullying (i.e. cyberbullying medium). The set of constructs considered by this theory are appropriate for this study as victims had expectations before starting to use the cyberbullying medium; after using it, they could evaluate the cyberbullying medium performance (e.g. utilitarian benefits they obtain from their interaction with it) and form judgements around their satisfaction with this medium.

3.2 Research model I – PCS impacts on Satisfaction

The combination of theoretical lenses from different domains is deemed as a critical aspect to advance the understanding of unexplained phenomena (Okhuysen & Bonardi, 2011). Therefore, by combining the theories presented above, the first proposed theoretical model concentrates on how perceived cyberbullying severity impacts a victim's satisfaction with the cyberbullying medium (Research Objective 1). It is worth noting that this study will focus on Facebook as the cyberbullying medium for two reasons: (1) this site is the most used social networking media among adults, with 86% of young adults using this site (Pew Research Center, 2013); and (2) it is also one of the media most utilized for cyberbullying others (Kids Help Phone, 2012; Ditch the Label, 2013). The first proposed model, henceforth to be referred to as the *Satisfaction model*, is presented in Figure 3.2. The constructs and hypotheses included in the model, along with their appropriate support, are described below.

3.2.1 Satisfaction

Satisfaction refers to a consumer's judgments about how well a product or service provides fulfillment (Oliver, 2010). As an affective construct, satisfaction is potentially influenced not only by cognitive appraisals (e.g. perceived usefulness, confirmation), but also by experience-based emotions (Oliver, 1993). This construct is chosen as the endogenous construct of the theoretical model because satisfaction is "an affective response derived from prior IT usage experiences, and can therefore be viewed as an experiential response to IT usage" (Bhattacherjee & Lin, 2014, p. 3). Experiencing a

negative situation such as a cyberbullying episode is deemed to affect a user's overall experience with an IS (i.e. the cyberbullying medium) and thus, satisfaction is deemed a useful construct to capture this phenomenon.

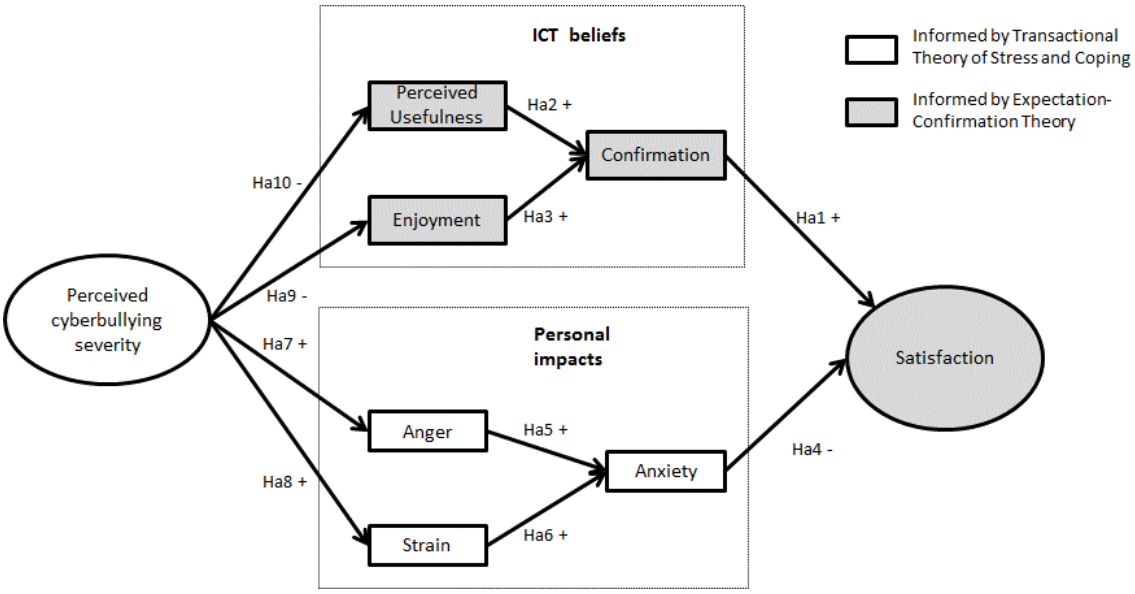

Figure 3.2 Research model I – Satisfaction model

3.2.2 Confirmation

Confirmation measures the extent to which expectations are matched with the performance of the ICT during its usage (Bhattacherjee & Lin, 2014). This confirmation of expected benefits is positively related to satisfaction with ICT, a relationship that has been supported by several authors (see for example Bhattacherjee, 2001; Hong, Thong, & Tam, 2006; Hsieh, Kuo, Yang, & Lin, 2010). Although the Expectation-Confirmation Theory has a direct link between pre-purchase (i.e. pre-adoption) expectations and satisfaction, this latter construct may be dominated by confirmation only when individuals are familiar with a product and its features, and their expectations are

overridden by that product's actual performance evaluation (Oliver, 2010). Such a situation can occur when users have had some experience with ICTs, as it is likely that their pre-adoption expectations are coloured by their experience. This is the case for participants in this study, who were experienced users of the cyberbullying medium (i.e. Facebook). Over time, individuals form enduring beliefs about a particular ICT (Bhattacherjee, Perols, & Sanford, 2008; Hernandez, Jimenez, & Martín, 2009) that may be challenged by a negative experience (e.g. a cyberbullying episode). Thus, it was deemed appropriate to use such a sample to study the effects of cyberbullying on victims' stable ICT beliefs. In particular, if those experienced users were asked to recall their expectations, they would rely on the most salient or recent moments (such as a cyberbullying episode) of their experience, a phenomenon known as "peak-end" recollection heuristic (Fredrickson & Kahneman, 1993). In summary, "it is not necessary to know precise expectation levels in order to form a judgment of better than/worse than expected and, corresponding with this, cognition appears to "best" affect [satisfaction] as time and product experience progress" (Oliver, 2010, p. 117). In light of the previous arguments, it is hypothesized that:

Ha1: Confirmation is positively related to satisfaction with the cyberbullying medium

3.2.3 Perceived Usefulness

Perceived usefulness has been defined as the extent to which a person believes that the use of a system will help her/him improve her/his job performance (Davis, Bagozzi,

& Warshaw, 1989). Before the adoption of a particular IS, perceived usefulness "essentially captures users' cognitive expectations about the performance of the system" (Venkatesh, Thong, Chan, Hu, & Brown, 2011, p. 528). After adoption, and with the passage of time, users' expectations are coloured by actual performance (i.e. users' perception of the quality or value of a product after it is used; Churchill & Surprenant, 1982). Therefore, the perception of usefulness after a user has had some experience with the IS can be considered as that user's performance evaluation of the IS. According to Expectation-Confirmation Theory, the perceived performance of a product is positively related to confirmation of expectations with that product (Oliver, 2010). In the IS context, Kim, Ferrin, and Rao (2009) found that perceived performance (understood as perceptions of usefulness) had a positive influence on confirmation. The cyberbullying medium chosen in this study (Facebook) provides users with utilitarian benefits such as initiating and maintaining relationships (Special & Li-Barber, 2012), organizing events (Tosun, 2012), and gaining acceptance and approval of other members (Cheung, Chiu, & Lee, 2011). In the context of usage of the cyberbullying medium, it is expected that perceived usefulness will also be a determining factor in forming their confirmation judgments. Thus, it is hypothesized that:

Ha2: Perceived usefulness is positively related to confirmation

3.2.4 Enjoyment

Enjoyment refers to the pleasure derived from using the technology in its own right, that is, without considering other beneficial utilitarian consequences (Carroll, 1988).

While most applications of the Expectation-Confirmation theory to the study of satisfaction and IS continuance only include post-adoption evaluations related to the performance of a system (i.e. perceived usefulness), there are several IS contexts where users are not only concerned with performance (e.g. online shopping, social networking sites) (Hassanein & Head, 2007). The cyberbullying medium chosen as the focus of this study (Facebook) is considered a hedonic system, since individuals may use it for fun in addition to achieving certain utilitarian benefits (e.g. networking with friends) (Baek, Holton, Harp, & Yaschur, 2011; Tosun, 2012). When hedonic systems have been studied by IS researchers, the set of beliefs from the original TAM (i.e. perceived usefulness and perceived ease of use) has been expanded to include enjoyment (see for example Thong, Hong, & Tam, 2006; van der Heijden, 2004). As enjoyment becomes one of the aspects users may evaluate from the cyberbullying medium (i.e. Facebook), it is likely that this construct will also have a positive effect on confirmation. Therefore, it is hypothesized that:

Ha3: Enjoyment is positively related to confirmation

3.2.5 Anxiety

Anxiety is a complex emotion that has been equated by some psychologists to fear, and considered by others as the uneasiness of expecting an uncertain threat (Lazarus, 1991). Studies in the area of cyberbullying have shown that anxiety is one of the most common negative emotions reported by victims (e.g. Campbell, Spears, Slee, Butler, & Kift, 2012; Price, Chin, Higa-McMillan, Kim, & Frueh, 2013; Šleglova & Cerna, 2011;

Schenk & Fremouw, 2012). In addition, anxiety is one of the most studied emotions in the IS literature, and researchers have found that it is negatively related to computer playfulness (Webster & Martocchio, 1992), and attitude towards use (Brown, Fuller, & Vician, 2004; Venkatesh V. , 2000). Satisfaction is similar in nature to the constructs of computer playfulness and attitudes towards use, as they all are affective constructs. Therefore, it is expected that satisfaction with the cyberbullying medium will be affected by this negative emotion. Thus, it is hypothesized that:

Ha4: Anxiety resulting from a cyberbullying episode is negatively related to satisfaction with the cyberbullying medium

3.2.6 Anger

Anger is defined as a feeling accompanied by a belief that a person one cares for (e.g. the self) has been disrespected (Fernandez & Turk, 1995). Researchers have found that when individuals experience anger and try to suppress their thoughts and feelings, this predicts the occurrence of anxious symptoms (Begley, 1994; Bridewell & Chang, 1997). In the case of cyberbullying, when individuals experience a cyberbullying episode and anger as a consequence of it (e.g. they have been offended by a bully), they may also perceive a threat in the future (e.g. the bully can attack them again). This potential threat may make them feel they do not have a control over the situation (i.e. the bully or her/his actions), something that may also prompt situational anxiety (Mirowsky & Ross, 2003). Accordingly, it is expected that cyberbullying victims experiencing anger will also have an increase in their levels of anxiety. Therefore, it is hypothesized that:

Ha5: Anger resulting from a cyberbullying episode is positively related to anxiety

3.2.7 Strain

Strain is defined as aversive, and potentially harmful, reactions of individuals to stressful situations (Beehr, Jex, Stacy, & Murray, 2000). Strain can be manifested in decreased productivity, somatic or affective problems, and problems with colleagues or family members (Osipow & Doty, 1985). Researchers in the stress literature have found that strain derived from occupational-related activities increases individuals' experiencing of anxiety (Kenny, Davis, & Oates, 2004; Mathiesen, Tambs, & Dalgard, 1999). In addition, Wadsworth and Compas (2002) found that family conflict (i.e. strain) derived from economic hardship (a stressor) was associated with anxiety in adolescents. This evidence suggests that strain derived from a stressful event, such as a cyberbullying episode, can increase individuals' levels of anxiety. Thus, it is hypothesized that:

Ha6: Strain resulting from a cyberbullying episode is positively related to anxiety

3.2.8 Perceived cyberbullying severity (PCS)

Victims of cyberbullying episodes show signs of stress triggered by these episodes (Campfield, 2006; Parris, Varjas, Meyers, & Cutts, 2012; Šleglova & Cerna, 2011), and as such, the episodes can be considered as stressful situations that will trigger the appraisal and coping mechanisms described by TTSC. In this study, PCS is a construct

introduced to measure a victim's appraisal of a cyberbullying episode[5]. As stated in TTSC, "people and groups differ in their sensitivity and vulnerability to certain types of events, as well as in their interpretations and reactions" (Lazarus & Folkman, 1984, p. 22). This highlights the importance of the appraisal process (i.e. evaluating the severity of the episode) when cyberbullying episodes occur. The assessment of a cyberbullying episode varies by the context of the situation (i.e. message, bully, medium, and audience) and the victim characteristics (Greif & Furlong, 2006), as explained below (see subsection 3.2.9). The degree of variability of the impact of a specific episode on an individual is consistent with the primary appraisal involved in TTSC (Lazarus & Folkman, 1984), whereby individuals evaluate whether the cyberbullying episode is relevant to their goals and/or well-being.

Assessing the perceived severity of a cyberbullying episode is relevant, as the perspective of a victim is critical to understand the impacts of the episode on her/his psychosocial functioning (Felix, Sharkey, Greif Green, Furlong, & Tanigawa, 2011). Moreover, and due to the diverse forms of cyberbullying (e.g. different behaviours, different ICTs used), it is important to have a tool that allows assessing the severity of cyberbullying situations (Sticca & Perren, 2013). However, researchers have not paid enough attention to study the degree to which different cyberbullying episodes are perceived as harmful by victims (Sticca & Perren, 2013; Ševcíková, Šmahel, & Otavová, 2012). Some studies have explored perceptions of the severity of cyberbullying, by (i)

[5] Recall from previous chapters that a cyberbullying episode may constitute one action (e.g. posting a picture in a website) or several actions related to the same issue (e.g. sending several threatening text messages over a certain period of time)

varying the severity of hypothetical cyberbullying scenarios presented to participants and determining if participants would be willing to help the victims in those scenarios (Bastiaensens, Vandebosch, Van Cleemput, DeSmet, & De Bourdeaudhuij, 2014) or which coping mechanisms participants would recommend to the victims of those scenarios (Machmutow K. , Perren, Sticca, & Alsaker, 2012); and (ii) comparing participants' perceptions (victims and non-victims) of cyberbullying and traditional bullying and determining which one was perceived as worse than the other (see Campbell, Spears, Slee, Butler, & Kift, 2012; Slonje & Smith, 2008; Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippett, 2008; Sticca & Perren, 2013). Despite this nascent interest in the perceived severity of cyberbullying, researchers have not explored how this severity is associated with the impacts of cyberbullying on victims.

From a personal perspective, it is expected that perceived cyberbullying severity may lead individuals to appraise the cyberbullying episode as harmful to different extents. According to Folkman (2008), harm appraisals are accompanied by emotions such as anger. Anger can be caused by acts that are perceived as intentional and unjustified, and that may harm individuals or interfere with their plans (Ganem, 2010; Shaver, Schwartz, Kirson, & O'Conner, 1987). Specifically, anger may be caused by aggression, personal insults, and the perception of being taken advantage of (Ganem, 2010; Izard, 1977a). In light of the previous arguments, it is expected that higher levels of perceived cyberbullying severity will lead victims to experience higher levels of anger. Thus, it is hypothesized that:

Ha7: Perceived cyberbullying severity is positively related to anger

Besides this negative emotion, individuals may also experience negative effects on several dimensions of their lives (i.e. strain) as a consequence of a cyberbullying episode. In the stress literature, authors have found a negative impact of stress on well-being (DeLongis, Folkman, & Lazarus, 1988; Mosley Jr., Perrin, Neral, Dubbert, Grothues, & Pinto, 1994), job performance (Wu, 2011), and the quality of the relationship between spouses (Neff & Karney, 2007). In the case of cyberbullying, this phenomenon has been associated with victims' impaired psychological well-being (Baker & Tanrikulu, 2010; Schenk & Fremouw, 2012; Schneider, O'Donnell, Stueve, & Coulter, 2012; Spears, Slee, Owens, & Johnson, 2009), low school performance (Beran, Rinaldi, Bickham, & Rich, 2012; Dehue, Bolman, & Völlink, 2008; Kowalski & Limber, 2013), and negative relations with family and friends (Price & Dalgleish, 2010; Sourander, et al., 2010; Spears, Slee, Owens, & Johnson, 2009). In light of these findings, it is expected that higher levels of perceived cyberbullying severity will lead to higher levels of strain. Thus, it is hypothesized that:

Ha8: Perceived cyberbullying severity is positively related to strain

From an external perspective, there is evidence to suggest that stressful or negative situations can negatively impact the medium or venue where the episode took place. For example, Bekiari et al. (2006) found that when students were subjected to verbal aggression by their teachers, this impacted negatively students' enjoyment of their classes. Since cyberbullying episodes occur through IS (i.e. cyberbullying medium can be

email, Facebook, text messages), it is expected that the perceived severity of these episodes may negatively impact the enjoyment an individual derives from using the cyberbullying medium. As such, it is hypothesized that:

Ha9: Perceived cyberbullying severity is negatively related to enjoyment

In addition, the appraisal of a negative event such as cyberbullying may also affect a victim's perception of usefulness of the cyberbullying medium. For example, in the context of e-commerce, buyers may perceive risks that are characteristic of online transactions or services (e.g. financial loss, privacy violations). Those perceived risks, understood as "a combination of uncertainty plus seriousness of outcome involved" (Bauer, 1967; Featherman & Pavlou, 2003, p. 454), have been shown to reduce consumers' perception of usefulness of online services (Featherman M. , 2001; Featherman & Pavlou, 2003). In the same vein, when a victim experiences a cyberbullying episode, it is expected that her/his perception of the episode as a serious one (i.e. severe) will decrease her/his perceptions of usefulness of the ICT through which cyberbullying occurred (i.e. cyberbullying medium). Thus, it is hypothesized that:

Ha10: Perceived cyberbullying severity is negatively related to perceived usefulness

3.3 Research model II- Factors that affect PCS

In addition to the consequences for victims of perceived cyberbullying severity, this study also seeks to understand the contextual factors that influence a victim's PCS (Research Objective 2). These factors are included in the second research model

proposed in this dissertation. This model, henceforth to be referred to as the *PCS model*, is informed by Transactional Theory of Stress and Coping. The PCS model is shown on Figure 3.3 and explained in more detail below.

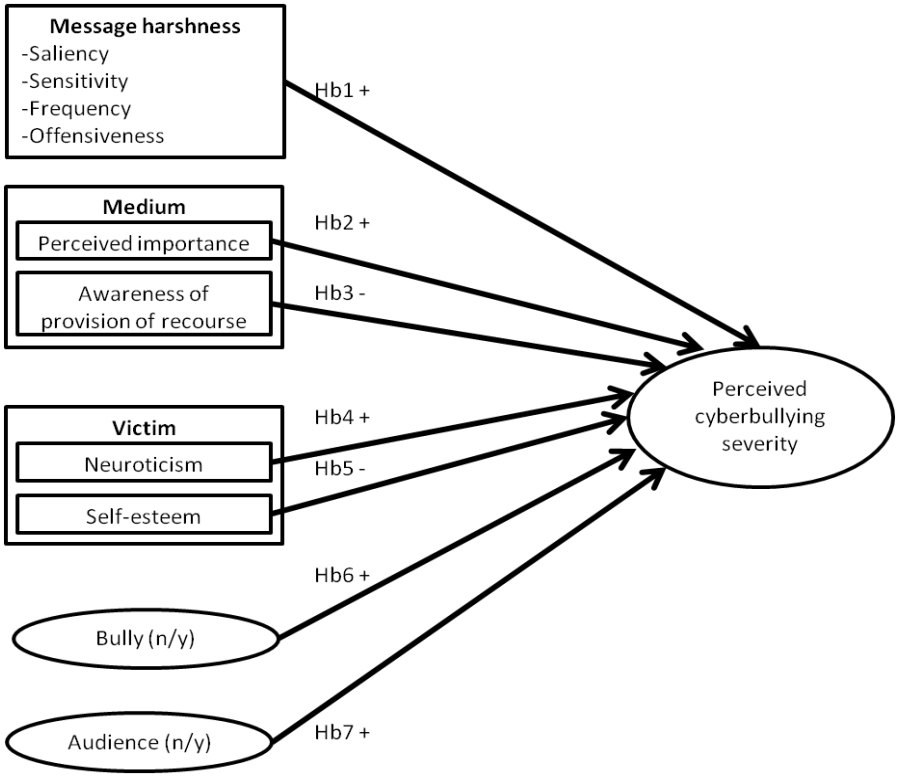

Figure 3.3 Research model II – PCS model

According to TTSC, stress arises from the relationship between the person and the environment (Lazarus, 1990). It is the appraisal of a particular situation as harmful or threatening that triggers the need to manage or cope with the situation (Cooper, Dewe, & O'Driscoll, 2001). As explained earlier, there are certain situational characteristics that may affect the appraisal of a stressful situation. This highlights the importance of understanding how variables that are relevant to the cyberbullying context may affect the

appraisal process of the cyberbullying episode (i.e. perceptions of cyberbullying severity). However, research focusing on the specific aspects of cyberbullying that may be associated with the degree to which victims are affected by this phenomenon is still at an early stage (Doane, Kelley, Chiang, & Padilla, 2013; Pieschl, Porsch, Kahl, & Klockenbusch, 2013).

In selecting the relevant contextual factors from cyberbullying that can be determinants of perceived cyberbullying severity, and since this dissertation was focused only on the cyberbullying domain, the "single-context theory contextualization" approach suggested by Hong, et al. (2014) to incorporate context into theorizing was followed. In this approach, a well-established theory relevant to the domain of interest is identified and it is then contextualized following one of three alternatives (Hong, et al., 2014): (a) incorporating contextual factors as antecedents of core constructs, (b) incorporating contextual factors as moderators of relations, and (c) decomposing core constructs into contextual factors. The first alternative was chosen, whereby the Transactional Theory of Stress and Coping was contextualized by adding factors relevant to the cyberbullying phenomenon as antecedents of the perceived cyberbullying severity construct[6]. According to Hong et al. (2014, p. 115), "the characteristics of the technology artifacts are at the core of context-specific theorizing in IS research. Further, situational characteristics that have direct impacts on IT usage, i.e., the usage context of the technology and the characteristics of the users, are of great importance to IS researchers (Hevner et al. 2004)". The three categories suggested by Hong et al. (2014) (i.e.

[6] As explained in section 3.2.8, this construct corresponds to the primary appraisal phase proposed by the Transactional Theory of Stress and Coping.

technology, user, and usage context) were mapped in this study to the context of cyberbullying: (1) technology characteristics were mapped to the characteristics of both the medium through which the victim is cyberbullied and the message(s) s/he receives; (2) the characteristics of the user were mapped to the characteristics of the victim; and (3) the characteristics of the usage context were mapped to the characteristics of individuals involved in other roles in cyberbullying (i.e. bully and potential audience). Those five factors are explained in detail below.

3.3.1 Message

Harshness is used as an adjective to denote cruel or exacting expressions or ideas (Goetchius, 2013). Harsh messages can be evaluated unfavourably (e.g. the person sending the message intended to hurt another one), leading to negative reactions from those that receive those messages (Tekman, Hortaçsu, & Ok, 2008; Young, 2004). In the same vein, it is posited that a harsh message may make a victim perceive a cyberbullying episode as severe. To the best of the author's knowledge, there is not a set of criteria that can be used to define a message as a harsh one. Therefore, the literature review presented in chapter 2 was used to determine the characteristics that may speak of the harshness of a cyberbullying message. The result is a set of four factors: The first factor is saliency, which refers to "an attribute of a particular stimulus that makes it stand out and be noticed" (Guido, 2001, p. 1). An example of saliency is the use of pictures and/or videos over text in the message. The use of unpleasant, violent, or intimate pictures and videos is more stressful for victims of cyberbullying than other forms such as insults in chat rooms

or rude e-mails (Smith P. K., et al., 2008; Staude-Müller, Bliesener, & Nowak, 2009; Doane, Kelley, Chiang, & Padilla, 2013). Pieschl et al. (2013) argue that verbal (e.g. written text) and visual codes (e.g. pictures) are assumed to be processed differently (Paivio, 1986) and because of that, they may have different effects on those experiencing cyberbullying. Using hypothetical cyberbullying scenarios, those authors found that the use of videos was more distressing for participants than the use of text and resulted in more negative emotions (e.g. anger).

The second factor is sensitivity of the information included in the message. Disclosing secrets (i.e. privacy violation) or embarrassing aspects of everyday life is stressful for victims of cyberbullying (Staude-Müller, Hansen, & Voss, 2012). In the same vein, cyberbullying episodes are considered severe when they involve threats of attacking the victim physically or humiliating her/him in front of people that are part of a victim's life (DeSmet, et al., 2012; Ševcíková, Šmahel, & Otavová, 2012). The third factor is frequency, where the occurrence of several acts in a cyberbullying episode is posited to increase victim's perception of severity (Addington, 2013; Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009). The last factor is offensiveness, where receiving angry, vulgar, rude messages or threats of real injuries is stressful and debilitating for victims (Welch, 1997). The saliency, sensitivity, frequency, and offensiveness are posited to collectively heighten victims' perceptions of severity in a cyberbullying episode. In formal terms:

Hb1: Cyberbullying message harshness is positively related to perceived cyberbullying severity

3.3.2 Medium

Bullies can employ a variety of media to attack their victims (e.g. email, social networking sites, chat rooms, mobile phones) and thus, it is important to analyze the medium characteristics that may affect the way victims appraise cyberbullying episodes. Two relevant characteristics of the cyberbullying medium are explored in this study. The first characteristic is the perceived importance of the cyberbullying medium for the victim. Individuals prefer to use certain forms of electronic communication in order to maintain their social lives (Fredstrom, Adams, & Gilman, 2011) and thus, it is expected that victims will perceive the episode as severe if the cyberbullying medium is among their preferred communication media. In formal terms:

Hb2: Perceived importance of the cyberbullying medium to the victim is positively related to his/her perceived cyberbullying severity

The second characteristic is the awareness of provision of recourse by the cyberbullying medium for victims of cyberbullying. In the context of e-commerce, vendors can provide institutional mechanisms (e.g. escrows, insurance services, credit card guarantees) to create the conditions to facilitate transactions (Pavlou & Gefen, 2004). Researchers have found that online buyers rely on such institutional mechanisms for building trust and reducing their perception of risk (Gefen, Karahanna, & Straub, 2003; Pavlou & Gefen, 2004). In the same vein, technology providers offer mechanisms built into the

cyberbullying medium that can be used by victims to deal with the cyberbullying episode (e.g. reporting or blocking a bully on Facebook or Twitter). Victims' awareness of such mechanisms may reduce the intensity of the stress derived from the cyberbullying episode, as they are aware that mechanisms exist within the cyberbullying medium to help them deal with this problem. It is expected that a victim's awareness of such recourse provisions within the cyberbullying medium will reduce her/his of perception of severity of a cyberbullying episode. In formal terms:

Hb3: Awareness of provision of recourse mechanisms for victims of cyberbullying is negatively related to their perceived cyberbullying severity

3.3.3 Victim

Individual differences may influence the appraisal of a negative situation, such as cyberbullying, by (i) determining what is important for well-being and (ii) shaping an individual's understanding of the situation (Lazarus & Folkman, 1984). This highlights the importance of evaluating victims' characteristics that may affect their appraisal of a cyberbullying episode (i.e. their perception of severity). Two individual characteristics deemed relevant in explaining victim's perceptions of bullying (Einarsen, 2000) are explored: neuroticism and self-esteem. Neuroticism, or emotional instability, refers to a personality trait characterized by insecurity, anxiousness, and hostility (Devaraj, Easly, & Crant, 2008). Neuroticism is the most pervasive domain of personality scales and it is associated with susceptibility to psychological distress and with coping poorly with stress (McCrae & Costa, 2010). Individuals high in neuroticism tend to appraise ambiguous

situations in a negative manner and perceive threats in situations where others would not (Boyes & French, 2010). Moreover, neurotic individuals are more likely to focus cognitive processing on stressful information (Osorio, Cohen, Escobar, Salkowski-Bartlett, & Compton, 2003). In light of the previous arguments, it is expected that individuals high in neuroticism will perceive a cyberbullying episode as being more severe than other individuals. In formal terms:

Hb4: Neuroticism is positively related to perceived cyberbullying severity

Self-esteem is the subjective perception of one's worth (Blascovich & Tomaka, 1991). According to Schraml et al., (2011, p. 989), "disturbances in self-esteem are believed to contribute to the high prevalence of psychosomatic symptoms and stress". Individuals with low self-esteem have less confidence they can deal properly with problems, and may give up easily when confronting difficult situations (Fleishman, 1984; Mak, Chen, Wong, & Zane, 2005). Moreover, individuals with low self-esteem tend to experience higher stress (Mimura, Murrells, & Griffiths, 2009). In light of these arguments, it is expected that confronted with the same cyberbullying episode, individuals with low self-esteem will perceive it as being more severe than others would. In formal terms:

Hb5: Self-esteem is negatively related to perceived cyberbullying severity

3.3.4 Bully

There is evidence to suggest that it may be more severe to be cyberbullied by someone a person knows and trusts than by a stranger (Nocentini, et al., 2010). As mentioned in chapter 2, victims often know who their cyberbully is and they are in constant contact with this person (e.g. the cyberbully is a classmate) (Ševcíková, Šmahel, & Otavová, 2012). When the victim knows the bully, the latter may have better access to the victim's information and the victim may feel betrayed by someone s/he knows (Staude-Müller, Hansen, & Voss, 2012). Moreover, if the victim knows the bully, s/he may be afraid of confronting a person that may be popular among her/his peers (Slonje, Smith, & Frisén, 2013). Thus, it is hypothesized that:

Hb6: Knowing the bully is positively related to perceived cyberbullying severity

3.3.5 Audience

A cyberbullying episode may be targeted only at the victim (e.g. private e-mail or text message) or may involve posting material or comments in a fashion that a determined group of people or the public in general can see them (e.g. posting a comment on a Facebook wall). When the episode involves other individuals, the bully seeks to humiliate the victim in order to attract the attention of other people (Hinduja & Patchin, 2009). When material is posted on the Internet, other individuals can easily copy and distribute the information and in this way, the damage inflicted over the victim can go beyond the original audience of the bully (Staude-Müller, Hansen, & Voss, 2012). Past research indicates that cyberbullying episodes that are public in nature (i.e. cyberbullying

messages can be seen/received by individuals other than the victim) are perceived to be more severe by victims compared to those that are private (e.g. messages sent through SMS) (Nocentini, et al., 2010; Smith & Slonje, 2010). In a study involving hypothetical cyberbullying scenarios, Sticca and Perren (2013) found that cyberbullying situations that involve the presence of an audience were perceived as being more severe than those that were directed only at the victim. Findings from other studies also suggest that the presence of larger audiences makes the victim perceive a cyberbullying episode as being more serious (Dooley, Pyzalski, & Cross, 2009; Smith & Slonje, 2010; Ševcíková, Šmahel, & Otavová, 2012). In light of these arguments, it is expected that having other individuals witnessing a cyberbullying episode (i.e. an audience) will positively affect a victim's perception of severity. Formally:

Hb7: Having an audience to a cyberbullying episode is positively related to perceived cyberbullying severity

3.4 Summary

This chapter has presented the development of two theoretical models, based on the Transactional Theory of Stress and Coping. The first model (hypotheses Ha1 to Ha10), also informed by Expectation-Confirmation Theory, addressed how perceived cyberbullying severity impacts victims' satisfaction with the cyberbullying medium through its personal impacts on victims and their ICT beliefs (Research Objective 1). The second model (hypotheses Hb1 to Hb7) introduced five contextual factors that influence a

victim's perception of cyberbullying severity (Research Objective 2). The next chapter discusses the methodology employed in this study to test the proposed theoretical models.

Chapter 4: Research methodology

This chapter discusses the research methodology employed to validate the research models presented in Chapter 3, as well as to address the secondary research objectives of this dissertation (i.e. development of the PCS construct and examination of its influence on victims' use of different coping mechanisms). The chapter is organized as follows: Section 4.1 describes the general procedures followed to collect data for this dissertation, followed by section 4.2 that provides some details of the research stages that were performed. Section 4.3 presents the details on the measurement instrument utilized in the study's questionnaire, and section 4.4 introduces the procedures followed to validate the proposed research models. Later, section 4.5 provides a brief summary of the post hoc and qualitative analyses conducted in the study. Finally, section 4.6 summarizes the chapter.

4.1 Procedure

Participants in this study were young adults (i.e. 18 - 30 years old) that have experienced a complete cyberbullying episode (i.e. episode is over) on Facebook within the past twelve months. Prior research in Information Systems has used instruments that ask participants to recall situations experienced in the past (e.g. adoption of a system) (e.g. Beaudry & Pinsonneault, 2010; Limayem, Hirt, & Cheung, 2007). In addition, a reporting time frame of the past twelve months has been used by other researchers to collect data about cyberbullying situations experienced in the past (e.g. Juvonen & Gross, 2008; Schneider, O'Donnell, Stueve, & Coulter, 2012; Wachs, 2012; Ybarra, Espelage, &

Mitchell, 2007). Using twelve months allows assessing a time frame that is "recent enough to allow for accurate recall, but broad enough to capture experiences throughout various times of the year (e.g. during school, summer, and breaks [in the case of students])" (Doane, Kelley, Chiang, & Padilla, 2013, p. 209). In addition, the study focused on an episode that occurred in the past to eliminate the ethical issues that would arise if data were collected with victims' currently experiencing cyberbullying as the study could heighten a current victim's negative feelings and proper psychological support could not be provided.

Research studies on cyberbullying show that cyberbullying can occur during college years, with prevalence rates varying from 8.6% (Beran, Rinaldi, Bickham, & Rich, 2012) to 59% (Turan, Polat, Karapirli, Uysal, & Turan, 2011). Kowalski, Giumetti, Schroeder, and Reese (2012) found that over 30% of college students that participated in their study had their first experience with cyberbullying while in college and that 43% of them had experienced the majority of cyberbullying experiences during college (even if they had first experienced it in middle and high school). Students that are victims of cyberbullying during high school are three times more likely to be victims in university than other students (Beran, Rinaldi, Bickham, & Rich, 2012). In addition, university students that experience cyberbullying report similar effects as younger victims (e.g. anxiety, depression, suicidal thoughts; Kraft & Wang, 2012; Schenk & Fremouw, 2012; Tomsa, Jenaro, Campbell, & Neacsu, 2013). This study focused on Facebook as the cyberbullying medium, because it is one of the most utilized media for cyberbullying (Kids Help Phone, 2012; Walker, Sockman, & Koehn, 2011). Young people are two

times more likely to be cyberbullied on Facebook than on other social networking sites (Ditch the Label, 2013). Furthermore, a recent study conducted with university students from four Canadian universities found that Facebook was among the most employed media through which students were cyberbullied (Luk, 2014).

Data were collected at one point in time using an online survey. The use of surveys is a common approach in IS studies (Sivo, Saunders, Chang, & Jiang, 2006). In addition, an online survey offers anonymity to participants, which may help them feel safe and increase their willingness to share their experiences given the sensitive nature of the data collected (Ševcíková, Šmahel, & Otavová, 2012). Participants started by signing a consent form to participate in the study (Appendix A). As a means of ensuring that participants were eligible to participate in the study, three screening questions were included at beginning of the survey. First, a general question determined whether the person experienced cyberbullying; in this question, other distracting items such as credit card fraud and home invasion were also included. As such, participants' answer to this question would be more honest as they could not infer the focus of this study when providing their answer to this question. Only those that indicated they were victims to cyberbullying were allowed to continue in the study. Second, if the person indicated that s/he had been a victim of cyberbullying, then s/he was asked the medium through which it occurred from a list provided to her/him (e.g. instant messenger, email, Facebook). Only those that indicated Facebook as the cyberbullying medium were allowed to continue in the study. In the third question, participants were presented with a definition of cyberbullying and a question that determined whether they were victims of a

completed cyberbullying episode on Facebook within the past twelve months, which they could clearly recall. They were reminded that one episode may constitute one action or several actions related to the same issue. Only those that responded affirmatively to this question were allowed to continue in the study. Participants were then asked to focus on that completed cyberbullying episode during the rest of the survey. In the event that a participant experienced more than one episode in the past 12 months, s/he was asked to focus on the most recently completed episode. Participants were also asked to focus mainly on their perceptions and feelings at the time they thought the cyberbullying episode was at its worst point, while responding to the scales measuring the constructs in the models presented earlier in chapter 3. While perception of cyberbullying severity might vary during the course of a cyberbullying episode, the worst point of perceived severity allows for understanding the full impact of cyberbullying on victims (i.e. personal impacts and impacts on their ICT beliefs). It also allows for fully understanding the contributions of various contextual factors (i.e. message, medium, bully, victim, and audience) to victims' assessment of cyberbullying severity. Furthermore, it is likely that the worst point of the cyberbullying episode is when the worst consequences may occur (e.g. suicidal ideation).

Participants were then randomly assigned to one of two groups (G1 or G2). Participants in G1 were asked to respond to questions measuring the constructs in both the Satisfaction and the PCS models, while participants in G2 were asked to respond to questions measuring the PCS model as well as questions related to their utilization of various coping mechanisms. This decision to have two groups was made considering that

participants in G1 were asked to focus their attention on the worst point of the cyberbullying episode, while answering to the items pertaining to all the constructs in the Satisfaction model. Since participants could have utilized coping mechanisms at any point of the cyberbullying episode, including questions related to the coping mechanisms they used would have distracted them from the focal time point (i.e. worst point in the cyberbullying episode) that they were asked to concentrate on. On the other hand, the constructs in the PCS model were largely unrelated to a specific timing point. Thus, asking participants in G2 to answer questions related to both the PCS model and their utilization of various coping mechanisms would not result in the same timing distraction problem identified for G1 above.

A secondary reason for the decision to work with a second group of participants was the length of the survey participants in G1 responded to. As it will be mentioned later, it took participants in that group an average of more than twenty minutes to complete the survey. Therefore, it was not deemed appropriate to add more questions to this survey to cover the victims' utilization of various coping mechanisms. Increasing the number of questions in this survey would make it more time consuming, which could reduce participants' motivation to provide accurate answers and could give rise to fatigue effects (Ben-Nun, 2008).

Demographic information was also collected in the survey (i.e. age, gender, school year participants were at when cyberbullying occurred), as well as the period of time that participants have had an active Facebook account for and which other types of similar

social media applications they use. Open ended questions were used to gather details about the cyberbullying episode in question (see section 4.3.2 below for details on open ended questions and Appendix B for the list of survey questions). At the end of the survey, participants were provided with a list of resources they could go to for help (e.g. distress centres), as suggested by a Senior Ethics Advisor from McMaster's Ethics Research Board (MREB) (Szala-Meneok, 2013) (see Appendix C). Participants in this study took an average of 23 minutes to complete the entire survey.

4.2 Research stages

This dissertation was completed in two stages: a pilot study and a main study, as described below.

4.2.1 Pilot study

A pre-test and a pilot test were conducted prior to data collection. For the pre-test, 30 university students identified as victims of cyberbullying in the past 12 months were recruited from the student population at McMaster University, through an advertisement on the Silhouette (undergraduate students' newspaper) and promotion of the study in undergraduate courses (see Appendices D and E). Participants were asked to fill out the survey containing the model's measures, and to respond to demographic and open-ended questions about the cyberbullying episode. Results from the analysis of this first set of responses were used to identify and resolve potential problems with the study procedures. In this pre-test, participants were offered the possibility to enter a draw to win one of two 25-dollar gift certificates from Amazon, as a reward for their participation in the study.

After the pre-test, a pilot study was conducted with the purpose of refining the measurement scales used for the constructs in the model. For the pilot study, 35 participants were recruited through Research Now™, a commercial market research firm. The pilot study did not result in any changes in the measurement instrument, and thus, the 35 data cases were included in the final data set for this study. Ethics approval was secured prior to any data collection, from MREB.

4.2.2 Main study

After the pilot study was completed, the main study was conducted. As described in section 4.1, a cross-sectional survey was used and it focused on the most recent completed cyberbullying episode participants experienced on Facebook during the past twelve months. Participants of this study were recruited through Research Now™, trying to achieve a gender balance that reflected the demographics of victims of cyberbullying that are between 18 and 30 years old (i.e. 65% female participants and 35% male participants; see for example Cappadocia, Craig, & Pepler, 2013; Turan, Polat, Karapirli, Uysal, & Turan, 2011). It is important to note that an age balance was not sought after, as it was of interest to this study to uncover the different types of cyberbullying that victims experience across age ranges.

The minimum sample size required for this study was determined following Barclay et al.'s (1995) guideline of ten times the larger value between (1) the largest number of formative indicators in a construct and (2) the largest number of structural paths directed at a dependent variable (Roldán & Sánchez-Franco, 2012). In the first proposed

theoretical model (i.e. Satisfaction model), all the constructs are reflective and thus, only the second of the Barclay's guidelines has to be considered. The largest number of structural paths directed at a dependent variable in this model is two (e.g. antecedents of Satisfaction), resulting in a minimum sample size of 20 participants. In the second theoretical model (i.e. PCS model), there is a formative construct (message harshness, with four items), but the number of predictors of PCS is a larger number (i.e. seven predictors). This results in a minimum sample size of 70 participants. Those figures were compared with the sample size requirements based on power analysis. Chin and Newsted (1999) suggested that the statistical power analysis should be based on the portion of the model with the largest number of predictors. As stated before, this portion corresponds to the factors affecting Satisfaction in the first model (two predictors) and PCS in the second one (seven predictors). Following Roldán and Sánchez-Franco (2012), in their use of Green's (1991) approximation, the minimum sample size required to detect a medium effect size at a power of .80 and alpha of .05 would be 66 cases for the Satisfaction model and 102 for the PCS one. In the end, and to account for potential outliers, 250 participants were recruited in total (i.e. participants for groups G1 and G2).

4.3 Measurement instrument

In order to ensure content validity, and wherever possible, the study used previously validated instruments to measure constructs in the proposed research models. The measurement instruments, along with sources of the scales, are included in Appendix F and described briefly below:

- Satisfaction was measured using a four item, 7-point Likert scale adapted from Au, Ngai, and Cheng (2008). In that paper, the items achieved a composite reliability score of 0.925. The items were slightly modified to reflect the Facebook context.
- Perceived usefulness was measured with a three item, 7-point Likert scale from Lin and Lu (2011). The items were not altered in any way from the questions developed by those authors. In Lin and Lu's (2011) paper, the items achieved a composite reliability score of 0.86.
- Enjoyment was measured using a four item, 7-point Likert scale adapted from Ghani and Deshpande (1994). Those items had been previously validated in Ghani, Supnick, and Rooney (1991), achieving an internal consistency reliability score of 0.88. The items were slightly modified to reflect the Facebook context.
- Confirmation was measured with a three item, 7-point scale adapted from Limayem, Hirt, and Cheung (2007). In that paper, the items achieved a composite reliability score of 0.919. The items were slightly modified to reflect the Facebook context.
- Anger was measured with a four item, 7-point Likert scale adapted from Ilfeld (1978). This scale was validated in Ilfeld (1976) (a reliability score was not reported). The items were not altered in any way from the questions validated by this author.
- Anxiety was measured with a four item, 7-point Likert scale adapted from French, Caplan, and Van Harrison (1982). In that paper, the items achieved an internal consistency reliability score of 0.75 (French, Caplan, and Van Harrison, 1982). The items were not altered in any way from the questions used by these authors.

- Strain: Since this study was interested in measuring strain in two directions (i.e. strain at school/work and strain at interpersonal relations), it was decided this variable would be operationalized with a second-order construct including two dimensions. Those two nine item, 7-point Likert dimensions were adapted from Osipow (1998) and measured vocational and interpersonal strain, respectively. These scales have been validated multiple times in the context of occupational strain, and Osipow (1998) reported an internal consistency reliability score of 0.75 for both scales. The items were altered slightly to reflect the context of participants (e.g. including school in vocational items).
- Perceived Cyberbullying Severity was measured during the pilot study using a combination of adapted items from Johnston and Warkentin's (2010) scale for threat severity (2 item, 7-point Likert scale) and from Moss-Morris et al.'s (2002) subscale from the Illness Perception Questionnaire (6 item, 7-point Likert scale). The subscale from Moss-Morris et al (2002) taps into a patient's perspective on how severe a disease is and its perceived consequences (for the patient and others). In the same line, the scale from Johnston and Warkentin (2010) evaluates a person's belief of the seriousness of a threat (a computer virus in that paper). Both scales, although utilized in different contexts, are concerned with an individual's evaluation of the severity of a particular situation (a disease, a virus) and thus, were deemed relevant to measure the perceived severity of a cyberbullying episode. The items were slightly modified to refer specifically to the cyberbullying episode. After the pilot test was conducted, the scale was refined, and items with the highest loadings (i.e. loadings above .70)

were selected following Venkatesh et al.'s (2003) procedure. According to these authors, "selection based on item loadings or corrected item-total correlations are often recommended in the psychometric literature (e.g., Nunnally & Bernstein, 1994)" (Venkatesh, Morris, Davis, & Davis, 2003, p. 457). In total, two items from Johnston and Warkentin (2010) and five from Moss-Morris et al. (2002) were retained.

- Awareness of provision of recourse was measured with a 4 item, 7-point Likert scale adapted from McKnight, Choudhury, and Kacmar (2002). In that study, the items achieved an internal consistency reliability score of 0.94. The items were slightly modified to reflect the Facebook context.
- Perceived importance of the cyberbullying medium was measured with a 5 item, 7-point Likert scale adapted from Ross, Orr, Sisic, Arseneault, Simmering, and Orr (2009). In their study, the items achieved an internal consistency reliability score of 0.85. The items were not altered from the ones employed by these authors, as they were measuring participants' perceived importance of Facebook.
- Neuroticism was measured with a twelve item, 7-point Likert scale adapted from McCrae and Costa (2010). This version of the scale has been widely used and when validated by the authors, the items achieved an internal consistency reliability score of 0.89 (Costa & McCrae, 1992). The items were not altered from the ones developed by these authors.
- Self-esteem was measured with a ten item, 7-point Likert scale adapted from Rosenberg (1979). In Rosenberg's (1979) book, the items achieved an internal

consistency score of 0.92. In this study, the items were not altered in any way from the ones proposed by this author.

Details of the adapted measurement instruments are provided as Appendix F. For the construct message harshness, included in the PCS model, a new scale was developed and validated as explained below. This scale was specified as a formative construct.

4.3.1 Construct development

In order to develop the new scale for the message harshness construct, the methodology outlined by Lewis, Templeton, and Byrd (2005) was followed. Specifically, this methodology includes three sequential stages. In the first stage, the domain of the construct was established. This involved a literature review and content analysis in the areas of Psychology and IS. The end result of this stage was the definition of the construct and a list of dimensions that represented its elements. In addition, the statement items were created, with a total of six items for message harshness.

The second stage involved producing and refining an instrument for this construct, through a pre-test, a pilot test, and item screening. For the pre-test, a Psychology professor that is part of the Promoting Relationships and Eliminating Violence Network (PREVNet[7]) was approached. This professor was asked to complete the instrument and then critique important elements for initial instrument design (e.g. content, understandability, ease of completion). S/he was also asked to suggest which items

[7] This is a Canadian network that groups researchers and youth-serving organizations, with the purpose of preventing and stopping bullying in Canada. Source: http://www.prevnet.ca/about

should be added or deleted from the scale. Based on her/his suggestions, another item was added and minor modifications were done to the existing items. S/he also suggested adding two more questions to the questionnaire that are unrelated to the cyberbullying message harshness construct. Those two questions referred to the form the cyberbullying message took (e.g. written words, photos) and how the cyberbullying message was sent to the victim (e.g. Facebook chat, post on victim's Facebook wall). Those two questions were thus added to the measurement instrument.

After the pre-test, a pilot test was performed (as indicated in section 4.2.1) with victims of cyberbullying in the past twelve months to further evaluate and purify the constructs' items. Following the pilot test, two IS professors knowledgeable about the construct and instrument development were asked to screen the items (i.e. determine whether they were relevant). This resulted in a final set of four items for message harshness specifying it as a formative construct.

In the third and final stage, the measurement properties of the scale were evaluated with the data collected in the main study. Those measurement properties were evaluated by estimating a multiple indicators and multiple causes model (Diamantopoulos & Winklhofer, 2001). This model included a related variable analysis (i.e. nomological network) to obtain further evidence of the appropriateness of the scale (Lewis, Templeton, & Byrd, 2005).

4.3.2 Other questions included in the study

In addition to the survey items related to the research models, other questions were included in this study. Open-ended questions were included to gather specific details of the cyberbullying episode: (i) the type of cyberbullying experienced (e.g. receiving offensive messages, circulating defamatory images of the victim), (ii) the relationship the victim had with the bully (if s/he was known to the victim) and (iii) whether the victim changed her/his Facebook use after the cyberbullying episode.

Another four questions were used as control variables for this study. The first one was the history of exposure to prior cyberbullying episodes. Transactional Theory of Stress and Coping suggests that exposure to novel stressful situations may affect an individual's perceptions of those situations. The theory also suggests that the persistence of a stressful situation may also influence those perceptions. Therefore, duration of the cyberbullying episode was also included as a control variable. Another control variable was whether the participant experienced traditional bullying while subjected to the cyberbullying episode. This variable was selected as victims of cyberbullying may also experience simultaneously traditional bullying (Beckman, Hagquist, & Hellström, 2012). In addition, controlling for the experiencing of simultaneous traditional bullying allows demonstrating that the effects of the cyberbullying episode are independent of traditional bullying (Bonanno & Hymel, 2013). Participants were also asked to provide information on whether they used any coping mechanisms. As argued earlier, the use of coping mechanisms may reduce the negative impacts of a cyberbullying episode.

4.4 Model validation

The second generation technique of Structural Equation Modeling (SEM) was used to validate the proposed models. SEM combines a measurement model (i.e. confirmatory factor analysis) and a structural model (i.e. relationships between constructs of interest) (Meyers, Gamst, & Guarino, 2006). Previous quantitative studies in the area of cyberbullying utilized mainly first generation tools such as correlation analysis, regression (e.g. linear, and logistic regression), chi-square test, and ANOVA (see for example Aricak, et al., 2008; Hinduja & Patchin, 2010; Huang & Chou, 2010; Lwin, Li, & Ang, 2012; Madlock & Westerman, 2011). Therefore, it was deemed relevant to use SEM to fully explore the effects of cyberbullying on a victim's life and on her/his experience with ICTs.

From the two alternative SEM methods to use, PLS (a component-based SEM technique) was preferred over AMOS or LISREL (covariance-based SEM techniques) for two main reasons (Gefen, Straub, & Boudreau, 2000; Roldán & Sánchez-Franco, 2012): (i) component-based methods are more suited for studies that are exploratory in nature, like this dissertation; and (ii) PLS supports both types of relationships between observed variables and their associated constructs (i.e. reflective and formative constructs) and thus, it is suitable for modeling the reflective constructs of the proposed research models as well as the formative construct included in the PCS model. In addition, Partial Least Squares (PLS) imposes minimum demands in terms of sample size, sample data distribution, and residuals distribution (Chin, 1998). Moreover, PLS is widely adopted to estimate complex models (e.g. models with fifty or more items), as is the case for this

study (Akter, D' Ambra, & Ray, 2011; Chin, 2010). The software used was SmartPLS - version 2.0M3 (Ringle, Wende, & Will, 2005), because results can be exported to several formats (e.g. HTML, Excel) and it allows performing the analyses required for this dissertation (e.g. bootstrapping procedure) (Temme, Kreis, & Hildebrandt, 2010). In addition, this software has been used by several researchers in Information Systems (see for example Herath & Rao, 2009; Ortiz de Guinea, Titah, & Léger, 2014; Siponen & Vance, 2010).

The evaluation of the models specified in PLS followed a two-step approach (Chin, 2010; Götz, Liehr-Gobbers, & Krafft, 2010): the assessment of (i) the measurement model, and (ii) the structural model. Chapter 5 presents a detailed analysis of both models. Next, a brief summary of the analyses performed is presented.

In the evaluation of the measurement model, the focus is on the reliability and the validity of the measures used to represent the model's constructs (Chin, 2010). Table 4.1 below lists all the tests performed to evaluate the reflective constructs and Table 4.2 summarizes the tests for the formative construct (i.e. message harshness).

Table 4.1 Summary of tests – Measurement model (reflective constructs)

Analysis	Test	Acceptance criterion	Source
Item reliability	Corrected item-total correlation	Value larger than 0.40	(Churchill Jr., 1979)
	Item loading	Value larger than 0.50	(Gefen, Straub, & Boudreau, 2000)
Construct reliability	Composite reliability	Value larger than 0.60	(Bagozzi & Yi, 1988)

Analysis	Test	Acceptance criterion	Source
	Cronbach's alpha	Value larger than 0.70	(Nunnally & Bernstein, 1994)
Convergent validity	Average Variance Extracted (AVE)	Value larger than 0.50	(Au, Ngai, & Cheng, 2008)
Discriminant validity	Item cross-loading	Loading on corresponding construct (i.e. theoretical construct) should be larger than loading on other constructs (i.e. cross-loadings). The difference between a loading and a cross-loading should be at least 0.10	(Chin, 2010; Gefen & Straub, 2005)
	Average Variance Extracted (AVE)	AVE of a construct is larger than squared correlations between that construct and any other construct	(Fornell & Larcker, 1981)

Table 4.2 Summary of tests – Measurement model (formative constructs)

Analysis	Test	Acceptance criterion	Source
Construct validity	Indicator weight - PCA	Weight is significant	(Petter, Straub, & Rai, 2007)
Construct reliability	Multicollineality (absence of) – Variance Inflation Factor (VIF)	VIF is less than or equal to 3.3	(Diamantopoulos & Siguaw, 2006)
External validity	Multiple indicators and multiple causes model (MIMIC)	Acceptable goodness of fit indices (e.g. RMSEA, GFI)	(Diamantopoulos & Winklhofer, 2001)

After establishing the appropriateness of the measures employed, the structural model was evaluated to determine whether there was evidence to support the theoretical models proposed (Chin, 2010). Table 4.3 below summarizes the analyses conducted with the structural model.

Table 4.3 Summary of tests – Structural model

Analysis	Test	Notes	Source
Goodness of model fit	R^2 for endogenous variables	An acceptable threshold value for R^2 was not established a priori. However, large R^2 values were sought-after	(Gefen, Straub, & Boudreau, 2000)
	Path coefficients significance	The significance of coefficients was evaluated through a bootstrap approach	(Chin, 1998)
	Goodness of Fit (GoF) index	The suggested baseline values of GoF_{small} (.10), GoF_{medium} (.25), and GoF_{large} (.36) were used to evaluate fit of the model	(Akter, D' Ambra, & Ray, 2011; Wetzels, Odekerken-Schröder, & van Oppen, 2009)
Effect sizes	F-test	The magnitude of the effect sizes of each path was evaluated following these values: f^2 small (.02), f^2 medium (.15), and f^2 large (.35)	(Cohen, 1988)
Model's predictive validity	Stone-Geisser test (Q^2)	A model with a value of Q^2 larger than zero is considered to have predictive validity	(Fornell & Cha, 1994; Chin, 1998)

In addition to the model validation, and considering that all measures were collected at one point in time, it was necessary to examine for common method bias. Two techniques were used: (i) Harman's single-factor test, as per Podsakoff et al. (2003); and (ii) Unmeasured Latent Marker Construct (ULMC) approach used by Liang et al. (2007). More details are provided in chapter 5.

4.5 Post hoc and other analyses

In addition to the main study data analyses, three analyses were conducted. First, a post hoc analysis was performed to examine the effects of control variables that were

captured in the study (i.e. age, gender, year at school, country, previous exposure to cyberbullying, duration of cyberbullying episode, exposure to traditional bullying, use of coping mechanisms, and time with a Facebook account). Second, an exploratory analysis was performed to examine the effects of PCS on victims' use of different coping mechanisms. This exploratory analysis was conducted with data collected from participants in G2. This exploratory approach involved a correlation analysis between PCS and three types of coping mechanisms (i.e. action coping, emotional support coping, and instrumental support coping), as well as the frequency with which those coping mechanisms were utilized by participants in isolation or combination. Finally, a qualitative analysis was performed with the information obtained from the open ended questions included in the survey. Responses to these questions were analyzed using content analysis techniques, in order to find common themes and meaningful categories in the data (Bachiochi & Weiner, 2004). Results from this qualitative analysis were used to strengthen the quantitative findings through triangulation (Benbasat, Goldstein, & Mead, 1987).

4.6 Summary

This chapter has presented the research methodologies employed in this study. In addition to the procedures followed to collect data, an overview of the analyses employed to achieve the research objectives of this study was presented. In particular, details of the measurement instrument utilized in this study were provided (in relation to Research Objective 3). Procedures to validate the proposed theoretical models were also described (in relation to Research Objectives 1 and 2). Finally, the exploratory analysis employed

to achieve Research Objective 4, along with post hoc and qualitative analyses to be carried out, were presented. Next chapter presents in detail the analyses performed in this dissertation, as well as the results obtained.

Chapter 5: Data analyses and results

After the procedures used to collect and analyze data for this study were summarized in the previous chapter, this chapter describes those procedures in detail. Section 5.1 describes briefly the process for collecting data, while section 5.2 presents the procedures used to screen those data. Section 5.3 summarizes the demographics of the participants in this study. Section 5.4 discusses the validation of the proposed research models, with emphasis on the measurement and structural models. This is followed by section 5.5, which presents the post hoc analyses performed. Section 5.6 describes the exploratory analysis conducted around coping mechanisms, followed by section 5.7 that contains the analysis of data collected through open-ended questions. The chapter ends with section 5.8, which summarizes the chapter.

5.1 Data collection

Participants in this study were young adults that experienced a complete cyberbullying episode (i.e. episode is over) on Facebook within the past twelve months. Data were collected through a cross-sectional online survey hosted in FluidSurveys servers. A consent form was presented to participants, and they were required to electronically approve consent prior to the beginning of the survey (i.e. click on "I agree to participate" button). Only those participants that agreed to participate and passed the screening questions outlined in Section 4.1 could respond to the survey questions.

Participants for both the pilot and main studies were recruited via e-mail by Research Now (a market research firm) in Canada and the U.S[8]. The pilot study was conducted between April 7 and April 9, 2014, and 35 valid responses were obtained. Since there were minimal changes done to the survey after the pilot study, the responses from the pilot study were included in the analysis of the main study. Recruitment for participants in the main study started on April 21 and ended on May 31, 2014, which resulted in a total of 273 complete responses. In total, 9,300 people attempted to fill the survey, but most of them were filtered out with the screening questions (a total of 8,922 participants): 88.9% of individuals have never experienced cyberbullying, 7.5% have experienced cyberbullying but in media other than Facebook, and 2.4% of those experiencing cyberbullying on Facebook did not go through an episode in the past twelve months or could not recall the episode clearly. In addition, some participants initiated the survey, but abandoned it (1.1% of total). The numbers obtained showed a cyberbullying prevalence rate of 13.7%, but only 2.9% of the total sample experienced a cyberbullying episode in the last twelve months that they could clearly recall.

5.2 Data screening

Before performing statistical analyses, data were screened to examine for valid responses, missing values, outliers, and multivariate statistical assumptions. All data screening procedures were performed using IBM SPSS Statistics, version 22.

[8] Each time a participant in Research Now's panel takes part in a survey, s/he accumulates points that can be redeemed for an award (Beedell, 2012).

The first step in screening the data was to determine which of the responses collected were valid. Although there were three screening questions to assure the adequacy of participants, some participants that indicated they had experienced a cyberbullying episode in the last twelve months, had experienced it in reality as early as 1994. This was detected through one of the questions at the end of the survey that asked participants to indicate the year when the cyberbullying episode started. Those responses were discarded. In addition, a "quality control" question was included at the end of the close-ended questions that asked participants to provide a specific response to indicate they had read the questions carefully (see Appendix F). The responses of participants that did not select the proper answer in this question were discarded and were replaced by new participants. In addition, answers were revised and/or discarded if (i) answers like "idk" (i.e. I don't know) or "n/a" (i.e. Not applicable) were found in the open ended questions, (ii) participants provided the same answers to all the questions, or (iii) participants took less than 5 minutes in responding the survey. It was believed that those participants filled the survey only with the purpose of collecting incentives. As a final step, reverse coded items were used to identify other inattentive participants. The average of the reverse coded items of a construct was subtracted of the average of the remaining items in that construct. If the absolute difference was larger than half the scale range, a participant would be considered inattentive and her/his answer was discarded (Assadi, 2013). As a result of those steps, 27 data cases were eliminated.

5.2.1 Outliers and missing values

The next step in the data screening was to detect outliers, which are "cases with extreme or unusual values on a single variable (univariate) or on a combination of variables (multivariate)" (Meyers, Gamst, & Guarino, 2006, p. 65). Composite scores were calculated for each of the reflective constructs to be used in the PLS models, and box plots were used to identify the outliers. In the case of the formative construct (i.e. message harshness), box plots were created for each individual indicator. Composite scores were not created for that construct, as the items of formative constructs do not necessarily have the same content or share the same theme (Petter, Straub, & Rai, 2007). In the Satisfaction model, a total of 6 unique cases were detected as outliers (representing 4.91% of the total number of cases). In the PCS model, a total of 9 unique cases were identified as outliers (3.49% of cases). Since there was no known explanation for those outliers, they were deleted from the data set as recommended by Meyers, Gamst, and Guarino (2006). A summary of the detected univariate outliers can be found below in Tables 5.1 and 5.2. Separate box plots for the individual constructs/items can be found in Appendix G.

Table 5.1 Univariate outliers – Satisfaction model

Construct	Outlier case ID	Number of outliers	Number of new outliers
PCS	none	0	0
Anger	14, 84	2	2
Strain school	none	0	0
Strain relations	88	1	1
Anxiety	none	0	0
Perceived	none	0	0

Construct	Outlier case ID	Number of outliers	Number of new outliers
Usefulness			
Enjoyment	none	0	0
Confirmation	34, 42, 101	3	3
Satisfaction	42	1	0
		Total	6

Table 5.2 Univariate outliers – PCS model

Construct/indicator	Outlier case ID	Number of outliers	Number of new outliers
Message saliency	none	0	0
Message frequency	none	0	0
Message sensitivity	290	1	1
Message offensiveness	290	1	0
Perceived importance	14, 268, 290	3	2
Awareness of provision of recourse	110, 178, 201, 276	4	4
Neuroticism	none	0	0
Self-esteem	none	0	0
PCS	151, 224, 290	3	2
		Total	9

After detecting univariate outliers, Mahalanobis distance was used to detect multivariate outliers. This distance measures "the multivariate "distance" between each case and the group multivariate mean (known as centroid)" (Meyers, Gamst, & Guarino, 2006, p. 67). This distance was computed for each case and evaluated with the chi-square distribution (alpha level = 0.001). If a case reaches this threshold (i.e. its value is equal or larger than the distribution's critical value), it can be considered a multivariate outlier

(Meyers, Gamst, & Guarino, 2006). In each model, one new multivariate outlier was detected (case 125 in the Satisfaction model; case 84 in the PCS model). The outliers' analyses left 229 usable cases for the PCS model and 115 usable cases for the Satisfaction model[9]. The next step in the data screening process was the identification of missing values. The usable cases did not have any missing values in the models' construct/indicator items.

5.2.2 Multivariate statistical assumptions

Statistical analyses such as SEM have assumptions that if violated, may lead to biased or distorted results (Tabachnick & Fidell, 2001). Three assumptions of special significance to multivariate analyses (normality, linearity, and homoscedasticity; Meyers, Gamst, & Guarino, 2006) were examined.

Normality

The normality of the distribution of continuous variables can be assessed with graphical and/or statistical approaches. The graphical approach used was the normal probability plot, where the values of a variable are plotted against expected normal distribution values (Stevens, 2002). In this plot, values following the diagonal line suggest normality (Meyers, Gamst, & Guarino, 2006). All the normal probability plots, included in Appendix H, indicate that the constructs/indicators of the model are normally distributed. In addition to this graphical approach, normality was assessed using the

[9] Recall from the previous chapter that participants in G1 responded to the items of both Satisfaction and PCS models, while participants in G2 responded only to items in the PCS model.

statistical measures of skewness (i.e. symmetry of the distribution) and kurtosis (i.e. peakedness of the distribution). Values close to zero in those measures indicate a normal distribution (Meyers, Gamst, & Guarino, 2006) and a threshold of ±1.0 would be considered a departure from normality (George & Mallery, 2003). The skewness and kurtosis values for each construct/indicator are included in Tables 5.3 and 5.4. For the Satisfaction model, all the skewness and kurtosis values fall within the accepted values. For the PCS model, one indicator shows a departure of normality considering the ±1.0 threshold: the indicator of frequency for message harshness has a kurtosis value of -1.38. However, and considering that normality is not always required for analysis (Tabachnick & Fidell, 2001) and that PLS imposes minimum demands in terms of variables' distributions (Chin, 1998), the issue encountered for this indicator in the PCS model was not deemed problematic for further analysis.

Table 5.3 Skewness and kurtosis – Satisfaction model

Construct	Mean	S.D.	Skewness	Kurtosis
PCS	4.20	1.39	- 0.24	- 0.30
Anger	4.70	1.15	- 0.39	0.16
Strain school	3.99	1.52	- 0.04	- 0.66
Strain relations	4.66	1.18	- 0.41	0.05
Anxiety	4.81	1.26	- 0.25	- 0.33
Perceived Usefulness	3.87	1.46	- 0.49	- 0.50
Enjoyment	3.07	1.44	0.29	- 0.61
Confirmation	2.88	1.28	0.14	- 0.80
Satisfaction	2.86	1.35	0.24	- 0.96

Table 5.4 Skewness and kurtosis – PCS model

Construct/indicator	Mean	S.D.	Skewness	Kurtosis
Message saliency	4.98	1.62	- 0.74	0.06
Message frequency	3.84	2.04	0.19	- 1.38
Message sensitivity	5.41	1.36	- 0.70	0.14
Message offensiveness	5.66	1.37	- 0.89	0.17
Perceived importance	5.09	1.22	- 0.52	0.19
Awareness of provision of recourse	5.11	1.11	- 0.46	- 0.04
Neuroticism	4.40	1.22	- 0.32	- 0.42
Self-esteem	4.58	1.20	- 0.26	- 0.22

Linearity

Along with the normal distribution of variables, multivariate techniques (e.g. multiple regressions) assume that the variables are related to each other in a linear way. The linearity between two variables can be assessed by using bivariate scatterplots: if the variables are normally distributed and linearly related to each other, the resulting scatterplot will have an elliptical shape (Meyers, Gamst, & Guarino, 2006). The scatterplots for all the relationships included in both the Satisfaction and PCS models have been included in Appendix I (with an overlaid oval in each). Those scatterplots indicate the linearity for the relationships of interest.

Homoscedasticity

One final assumption that needs to be evaluated is homoscedasticity, "which suggests that quantitative dependent variables have equal levels of variability across a range of (either continuous or categorical) independent variables" (Meyers, Gamst, & Guarino, 2006, p. 70). In the case of linear regressions, homoscedasticity refers to a constant variance of the residuals (i.e. difference between actual and predicted values), regardless of changes in the independent variable (Fay, 2010). Therefore, the examination of the residual plots is useful to determine homoscedasticity violations (i.e. heteroscedasticity). Those plots depict residual Y values in the vertical axis and predicted Y values in the horizontal axis (X-axis). Homoscedasticity is observed if there is a constant spread of the residuals across all values of the X-axis (Fay, 2010). The residual plots for all the dependent variables included in both the Satisfaction and the PCS models have been included in Appendix J and they suggest the presence of homoscedasticity.

To sum up, the three multivariate assumptions of normality, linearity, and homoscedasticity were held with the data set obtained and thus, it was suitable for further analysis.

5.3 Demographics

Along with the questions for the constructs included in the research models, some demographic questions were included in the survey. Considering that participants that responded to the questions related to the Satisfaction model also answered the questions of the PCS model (i.e. group G1), the group of participants of the latter (i.e. 229

participants; groups G1 and G2) was used to calculate the demographic figures presented next. From the pool of participants, 17% lived in Canada and 83% lived in the U.S. In terms of gender, table 5.5 below shows that the gender distribution was close to the gender proportions of cyberbullying victims at a university level (i.e. 65% female and 35% male; Cappadocia, Craig, & Pepler, 2013; Turan, Polat, Karapirli, Uysal, & Turan, 2011). It is worth mentioning that an option of "other" with an open-ended option was added at the end of the list of the closed-ended options of gender (i.e. male, female, transgender), in order to ensure that all possible answers were captured (Bachiochi & Weiner, 2004).

Table 5.5 Gender of participants

Gender	Count	Percentage
Male	70	30.6
Female	156	68.1
Transgender	1	0.4
Other: gender queer	2	0.9
Total	229	100

In terms of age, table 5.6 below shows that about 60% of participants were 25 years old or older. The result in terms of age is consistent with the school year participants were at when the cyberbullying episode occurred. Table 5.7 below indicates that about 60% of the participants either had graduated from college/university or were not at school at the time of the cyberbullying episode.

Table 5.6 Age of participants

Age	Count	Percentage
18	13	5.7
19	9	3.9
20	7	3.1
21	9	3.9
22	14	6.1
23	13	5.7
24	25	10.9
25	28	12.2
26	19	8.3
27	22	9.6
28	30	13.1
29	17	7.4
30	23	10.0
Total	229	100

Table 5.7 School year participants were at when the cyberbullying episode occurred

School	Count	Percentage
High school	28	12.2
First year of college/ university	12	5.2
Second year of college/ university	19	8.3
Third year of college/ university	12	5.2
Fourth year of college/ university	17	7.4
Fifth year of college/ university	3	1.3
A college/ university graduate	34	14.8
Not in school	104	45.4
Total	229	100

In addition to demographic questions, participants were asked to indicate for how long they had had a Facebook account when the cyberbullying episode occurred (as a potential control variable). Table 5.8 below shows that about 75% of the participants had had their Facebook account for four or more years, when the cyberbullying episode occurred (with both sets of data). In addition, more than 95% of the participants had had

their Facebook account for more than one year. These results validate the decision to focus this study on experienced users of Facebook.

Table 5.8 Number of years participants had had a Facebook account (when the cyberbullying episode occurred)

Time with a Facebook account	Count	Percentage
Less than a year	5	2.2
1 year	5	2.2
2 years	11	4.8
3 years	36	15.7
4 years	27	11.8
5 years	41	17.9
6 years	35	15.3
7 years	32	14.0
8 years	37	16.2
Total	229	100

Finally, participants were asked to indicate which other social media they used. As with gender, an open-ended option was added to the end of the closed-ended options (i.e. google+, linkedin, twitter, and pinterest). Table 5.9 below includes all the options mentioned by participants and shows that most of the participants used at least another social media application in addition to Facebook. The applications that had most mentions were Twitter and Pinterest.

Table 5.9 Other social media applications used by participants

Social media application[1]	Count	Percentage
Google+	68	29.7
LinkedIn	65	28.4
Twitter	103	45.0
Pinterest	96	41.9
Instagram	22	9.6
YouTube	4	1.7

Social media application[1]	Count	Percentage
Tumblr	7	3.1
Skype	2	0.9
QQ	1	0.4
None	22	9.6

[1]Note: More than one application can be used and thus, percentages do not add up to 100%

5.4 Research model validation

The research model was validated using SmartPLS - version 2.0M3 (Ringle, Wende, & Will, 2005). In this section, the analyses performed to evaluate both the measurement and the structural models are presented. In addition, and considering that measures for all constructs in both Satisfaction and PCS models were collected at the same time, the possibility of common method bias was also examined and it is presented in this section.

5.4.1 Measurement model

The constructs in the Satisfaction model are all reflective in nature. However, one of the constructs of the PCS model is formative. Considering that formative constructs need to be validated differently, as in a formative construct the observed variables "cause" the construct and represent several dimensions of it (Gefen, Straub, & Boudreau, 2000), the analysis of the measurement model was split into two sections.

5.4.1.1 Reflective constructs

The first step in the evaluation of reflective constructs was to determine the reliability of their items. As it was mentioned in the previous chapter, this was

determined by checking the corrected item-total correlations (whose values need to be larger than 0.40) and the indicator loadings (which need to be larger than 0.50) (Churchill Jr., 1979; Gefen, Straub, & Boudreau, 2000). As shown in tables 5.10 and 5.11, 9 items that did not meet the criteria were dropped from the data set and excluded from further analysis.

Table 5.10 Item reliability assessment – Satisfaction model

Construct	Item	Item loading[1]	Corrected item-total correlation
PCS	pcs_0	0.730	0.759
	pcs_1	0.781	0.874
	pcs_2	0.748	0.814
	pcs_3	0.788	0.829
	pcs_4	0.761	0.807
	pcs_5	0.785	0.850
	pcs_6_r[2]	Item dropped	
	pcs_7	0.817	0.841
Anger	anger_0	0.773	0.684
	anger_1	0.854	0.786
	anger_2	0.756	0.657
	anger_3	0.734	0.749
Strain school/work	strain_scl_0	0.683	0.728
	strain_scl_1	0.705	0.721
	strain_scl_2	0.742	0.692
	strain_scl_3	0.833	0.783
	strain_scl_4_r	Item dropped	
	strain_scl_5	0.769	0.626
	strain_scl_6_r	Item dropped	
	strain_scl_7_r	Item dropped	
	strain_scl_8	0.672	0.729
Strain relations	strain_rel_0	Item dropped	
	strain_rel_1	0.574	0.754
	strain_rel_2_r	Item dropped	
	strain_rel_3	0.527	0.677
	strain_rel_4	0.682	0.714
	strain_rel_5_r	0.585	0.512
	strain_rel_6	Item dropped	
	strain_rel_7	Item dropped	
	strain_rel_8	0.647	0.746
Anxiety	anxiety_0	0.694	0.817

Construct	Item	Item loading[1]	Corrected item-total correlation
	anxiety_1	0.748	0.873
	anxiety_2	0.556	0.733
	anxiety_3_r	0.647	0.488
Perceived Usefulness	PU_0	0.809	0.827
	PU_1	0.817	0.880
	PU_2	0.777	0.843
Enjoyment	ENJ_0	0.648	0.881
	ENJ_1	0.744	0.947
	ENJ_2	0.685	0.904
	ENJ_3	0.705	0.924
Confirmation	Conf_0	0.829	0.877
	Conf_1	0.825	0.924
	Conf_2	0.764	0.818
Satisfaction	Satisfact_0	0.888	0.915
	Satisfact_1	0.919	0.949
	Satisfact_2	0.850	0.874
	Satisfact_3	0.877	0.906

[1] Item loadings in this table correspond to the initial item loadings obtained in a principal component analysis performed in SPSS
[2] Items with "_r" in the item name were negatively worded and thus, reversed for analysis

Table 5.11 Item reliability assessment – PCS model

Construct	Item	Item loading[1]	Corrected item-total correlation
Perceived importance	Perc_imp_0	0.763	0.702
	Perc_imp_1	0.718	0.784
	Perc_imp_2	0.800	0.784
	Perc_imp_3	0.862	0.757
	Perc_imp_4	0.794	0.807
Awareness of provision of recourse	Awar_Recou_0	0.779	0.816
	Awar_Recou_1	0.835	0.863
	Awar_Recou_2	0.866	0.884
	Awar_Recou_3	0.651	0.802
Neuroticism	neuro_0	Item dropped	
	neuro_1_r [2]	Item dropped	
	neuro_2_r	Item dropped	
	neuro_3	Item dropped	
	neuro_4	0.567	0.582
	neuro_5_r	Item dropped	
	neuro_6	0.825	0.699
	neuro_7_r	Item dropped	

Construct	Item	Item loading[1]	Corrected item-total correlation
	neuro_8	0.652	0.695
	neuro_9	0.698	0.685
	neuro_10	0.695	0.655
	neuro_11	0.699	0.698
Self-esteem	SE_0	0.610	0.814
	SE_1_r	Item dropped	
	SE_2	0.822	0.678
	SE_3	0.817	0.605
	SE_4_r	Item dropped	
	SE_5_r	Item dropped	
	SE_6	0.731	0.641
	SE_7_r	Item dropped	
	SE_8_r	Item dropped	
	SE_9	0.557	0.815
Bully[3]		N/A	N/A
Audience[3]		N/A	N/A
PCS	pcs_0	0.843	0.772
	pcs_1	0.846	0.865
	pcs_2	0.731	0.771
	pcs_3	0.837	0.833
	pcs_4	0.739	0.772
	pcs_5	0.833	0.840
	pcs_7	0.792	0.828

[1] Item loadings in this table correspond to the initial item loadings obtained in a principal component analysis performed in SPSS
[2] Items with "_r" in the item name were negatively worded and thus, reversed for analysis
[3] Bully and audience were dummy variables

The second step of the evaluation of reflective constructs was the assessment of their reliability. Cronbach's alpha and composite reliability were used, with the thresholds of 0.7 and 0.6, respectively (Bagozzi & Yi, 1988; Nunnally & Bernstein, 1994). As tables 5.12 and 5.13 below show, reliability holds for all the constructs included in the models.

Table 5.12 Construct reliability assessment – Satisfaction model

Construct	Composite reliability	Cronbach's alpha	AVE
PCS	0.96	0.95	0.76
Anger	0.91	0.87	0.72

Construct	Composite reliability	Cronbach's alpha	AVE
Strain school/work (Strain_scl)	0.95	0.93	0.75
Strain relations (Strain_rel)	0.88	0.83	0.59
Anxiety	0.92	0.88	0.74
Perceived usefulness (PU)	0.95	0.92	0.86
Enjoyment (ENJ)	0.97	0.96	0.89
Confirmation (CONF)	0.95	0.92	0.87
Satisfaction (SAT)	0.97	0.96	0.89

Table 5.13 Construct reliability assessment – PCS model

Construct	Composite reliability	Cronbach's alpha	AVE
Perceived importance (per_imp)	0.92	0.90	0.71
Awareness of provision of recourse (awar_rec)	0.95	0.92	0.81
Neuroticism (neuro)	0.91	0.87	0.62
Self-esteem (SE)	0.93	0.90	0.72
Bully[1]	N/A	N/A	N/A
Audience[1]	N/A	N/A	N/A
PCS	0.95	0.94	0.74

[1] Bully and audience were dummy variables

Next, the convergent and discriminant validity of the constructs was examined. Convergent validity was examined through the Average Variance Extracted (AVE) by each construct, making sure it exceeds the variance due to measurement error for that construct (i.e. AVE is above 0.5) (Au, Ngai, & Cheng, 2008). This criterion is met by all constructs in both the Satisfaction and PCS models, as seen in Tables 5.12 and 5.13. The AVE by each construct was also used to evaluate discriminant validity, by verifying that its square root was larger than the correlation of that construct with any other construct (Fornell & Larcker, 1981). As shown in Tables 5.14 and 5.15, the value of the diagonals (i.e. square root of the AVE) is larger than the values in their corresponding rows and columns. In addition, it was verified that the loading of each item on its corresponding

construct (i.e. theoretical construct) was larger at least by 0.10 than its loadings on other constructs (i.e. cross-loadings) (Chin, 2010; Gefen & Straub, 2005). Tables 5.16 and 5.17 indicate that this occurs for all the items in both the Satisfaction and PCS models.

Table 5.14 Construct correlation matrix – Satisfaction model

	PCS	Anger	Strain_scl	Strain_rel	Anxiety	PU	ENJ	CONF	SAT
PCS	**0.87**								
Anger	0.42	**0.85**							
Strain_scl	0.68	0.54	**0.87**						
Strain_rel	0.64	0.55	0.79	**0.77**					
Anxiety	0.57	0.57	0.58	0.58	**0.86**				
PU	-0.28	-0.13	-0.17	-0.23	-0.28	**0.93**			
ENJ	-0.39	-0.25	-0.28	-0.40	-0.47	0.59	**0.94**		
CONF	-0.35	-0.20	-0.23	-0.34	-0.41	0.61	0.70	**0.93**	
SAT	-0.33	-0.19	-0.19	-0.31	-0.46	0.53	0.68	0.82	**0.94**

Values in the diagonal contain the square root of AVE by each construct

Table 5.15 Construct correlation matrix – PCS model

	Msg_har	Per_imp	Awar_rec	neuro	SE	Bully	Audience	PCS
msg_har	--							
per_imp	0.45	**0.84**						
awar_rec	0.38	0.59	**0.90**					
neuro	0.25	0.20	0.16	**0.78**				
SE	-0.15	-0.02	0.02	-0.54	**0.85**			
Bully	0.13	0.10	0.08	0.00	0.04	--		
Audience	0.19	-0.02	0.01	-0.05	0.01	0.05	--	
PCS	0.62	0.45	0.33	0.28	-0.26	0.20	0.16	**0.86**

Values in the diagonal contain the square root of AVE by each construct. Exceptions (denoted by --) are the dummy variables (bully, and audience) and the formative construct (i.e. msg_har)

Table 5.16 Loadings and cross-loadings – Satisfaction model

	Anger	Anxiety	CONF	ENJ	PCS	PU	SAT	Strain_rel	Strain_scl
anger_0	**0.82**	0.46	-0.10	-0.13	0.28	-0.07	-0.04	0.37	0.43
anger_1	**0.89**	0.51	-0.24	-0.30	0.39	-0.16	-0.27	0.41	0.41
anger_2	**0.81**	0.38	-0.14	-0.16	0.37	-0.09	-0.13	0.50	0.45
anger_3	**0.87**	0.56	-0.20	-0.26	0.37	-0.13	-0.19	0.57	0.54
anxiety_0	0.53	**0.92**	-0.32	-0.41	0.57	-0.17	-0.34	0.57	0.60

	Anger	Anxiety	CONF	ENJ	PCS	PU	SAT	Strain_rel	Strain_scl
anxiety_1	0.52	**0.94**	-0.34	-0.40	0.55	-0.27	-0.37	0.48	0.51
anxiety_2	0.61	**0.87**	-0.30	-0.33	0.52	-0.21	-0.37	0.59	0.56
anxiety_3_R	0.24	**0.69**	-0.47	-0.52	0.28	-0.33	-0.54	0.34	0.26
Conf_0	-0.21	-0.37	**0.94**	0.67	-0.33	0.57	0.80	-0.29	-0.16
Conf_1	-0.19	-0.37	**0.96**	0.69	-0.30	0.57	0.78	-0.26	-0.18
Conf_2	-0.18	-0.39	**0.90**	0.59	-0.35	0.56	0.72	-0.42	-0.32
ENJ_0	-0.20	-0.38	0.68	**0.92**	-0.43	0.63	0.58	-0.46	-0.38
ENJ_1	-0.24	-0.45	0.63	**0.96**	-0.33	0.54	0.65	-0.36	-0.24
ENJ_2	-0.26	-0.43	0.66	**0.94**	-0.36	0.52	0.64	-0.33	-0.23
ENJ_3	-0.26	-0.53	0.66	**0.95**	-0.33	0.52	0.70	-0.37	-0.22
pcs_0	0.44	0.61	-0.35	-0.41	**0.84**	-0.27	-0.36	0.51	0.55
pcs_1	0.39	0.52	-0.33	-0.40	**0.91**	-0.28	-0.27	0.59	0.68
pcs_2	0.38	0.44	-0.22	-0.29	**0.87**	-0.20	-0.23	0.62	0.64
pcs_3	0.27	0.39	-0.26	-0.30	**0.88**	-0.20	-0.24	0.57	0.62
pcs_4	0.30	0.44	-0.25	-0.26	**0.86**	-0.26	-0.21	0.57	0.62
pcs_5	0.38	0.55	-0.40	-0.34	**0.87**	-0.24	-0.38	0.53	0.55
pcs_7	0.36	0.53	-0.35	-0.36	**0.87**	-0.26	-0.31	0.48	0.49
PU_0	-0.15	-0.30	0.53	0.52	-0.23	**0.91**	0.50	-0.14	-0.10
PU_1	-0.12	-0.26	0.57	0.55	-0.29	**0.94**	0.48	-0.19	-0.16
PU_2	-0.10	-0.21	0.58	0.56	-0.26	**0.93**	0.49	-0.30	-0.21
Satisfact_0	-0.17	-0.43	0.79	0.61	-0.33	0.53	**0.95**	-0.33	-0.24
Satisfact_1	-0.22	-0.48	0.78	0.64	-0.30	0.47	**0.97**	-0.34	-0.19
Satisfact_2	-0.12	-0.37	0.70	0.65	-0.21	0.42	**0.91**	-0.16	-0.06
Satisfact_3	-0.20	-0.46	0.82	0.66	-0.39	0.56	**0.94**	-0.30	-0.20
strain_rel_1	0.55	0.44	-0.17	-0.26	0.62	-0.13	-0.15	**0.81**	0.68
strain_rel_3	0.50	0.36	-0.35	-0.37	0.44	-0.12	-0.31	**0.75**	0.55
strain_rel_4	0.37	0.30	-0.14	-0.17	0.41	-0.09	-0.09	**0.78**	0.61
strain_rel_5_r	0.20	0.44	-0.40	-0.44	0.29	-0.34	-0.39	**0.63**	0.44
strain_rel_8	0.43	0.62	-0.29	-0.33	0.59	-0.22	-0.27	**0.86**	0.71
strain_scl_0	0.57	0.63	-0.22	-0.25	0.64	-0.13	-0.19	0.71	**0.89**
strain_scl_1	0.52	0.57	-0.32	-0.34	0.65	-0.17	-0.23	0.74	**0.87**
strain_scl_2	0.44	0.45	-0.17	-0.24	0.58	-0.13	-0.15	0.66	**0.86**
strain_scl_3	0.43	0.42	-0.15	-0.20	0.56	-0.12	-0.12	0.70	**0.91**
strain_scl_5	0.31	0.33	-0.13	-0.13	0.49	-0.19	-0.12	0.62	**0.79**
strain_scl_8	0.47	0.52	-0.20	-0.28	0.60	-0.17	-0.15	0.66	**0.85**

Table 5.17 Loadings and cross-loadings – PCS model

	Per_imp	Neuro	PCS	Awar_rec	SE
Awar_Recou_0	0.51	0.13	0.28	**0.89**	0.03
Awar_Recou_1	0.53	0.19	0.34	**0.92**	-0.02
Awar_Recou_2	0.52	**0.13**	0.29	**0.93**	-0.01
Awar_Recou_3	0.59	0.11	0.28	**0.87**	0.09
Perc_imp_0	**0.78**	0.22	0.33	0.47	0.00
Perc_imp_1	**0.86**	0.09	0.37	0.60	0.04
Perc_imp_2	**0.87**	0.20	0.44	0.49	-0.07
Perc_imp_3	**0.82**	0.23	0.34	0.40	-0.08
Perc_imp_4	**0.87**	0.11	0.41	0.54	0.04
SE_0	-0.01	-0.56	-0.19	0.01	**0.86**
SE_2	0.00	-0.39	-0.24	0.04	**0.89**
SE_3	-0.07	-0.39	-0.21	0.00	**0.84**
SE_6	0.02	-0.37	-0.24	0.03	**0.83**
SE_9	-0.02	-0.62	-0.22	0.00	**0.85**
neuro_10	0.17	**0.81**	0.19	0.15	-0.41
neuro_11	0.24	**0.78**	0.23	0.21	-0.39
neuro_4	0.19	**0.68**	0.18	0.05	-0.30
neuro_6	0.07	**0.81**	0.23	0.06	-0.51
neuro_8	0.16	**0.80**	0.24	0.08	-0.50
neuro_9	0.13	**0.82**	0.25	0.18	-0.42
pcs_0	0.40	0.13	**0.83**	0.27	-0.08
pcs_1	0.39	0.30	**0.90**	0.28	-0.28
pcs_2	0.32	0.23	**0.83**	0.25	-0.28
pcs_3	0.35	0.29	**0.89**	0.26	-0.31
pcs_4	0.36	0.20	**0.83**	0.32	-0.21
pcs_5	0.45	0.26	**0.89**	0.31	-0.21
pcs_7	0.44	0.28	**0.86**	0.30	-0.20

After establishing the reliability and validity of all reflective constructs in the two models, the last step before moving forward with the formative construct was the

evaluation of the second-order construct (Strain). The procedures employed for evaluating the first-order constructs should also be applied to the second-order construct (Chin, 2010).

Strain was modeled as a second-order construct in PLS, by following Agarwal & Karahanna (2000) and Calvo-Mora, Leal, & Roldán (2012). The procedure involved the following steps: (i) "strain school" and "strain relations" were modeled as first-order constructs and related to the variables that strain was theoretically related to (e.g. PCS); (ii) the latent variable scores provided by PLS for both "strain school", and "strain relations" (one for each of the 115 cases) were added to the original data set as items "Str_scl" and "Str_rel"; and (iii) those items were modeled as reflective indicators of the second order construct Strain.

After modeling the second order construct, its reliability assessment was performed. As can be seen in Table 5.18, both items met the criteria of having a loading of at least 0.5 and an item-total corrected correlation of at least 0.4, indicating acceptable item reliability. The construct Strain also has acceptable reliability, as its composite reliability and Cronbach's alpha are above the minimum values of 0.6 and 0.7, respectively (see table 5.19)

Table 5.18 Item reliability assessment – Satisfaction second-order model

Construct	Item	Item loading	Corrected item-total correlation
Strain	Strain_scl	0.95	0.79
	Strain_rel	0.94	0.79

Table 5.19 Construct reliability assessment – Satisfaction second-order model

Construct	Composite reliability	Cronbach's alpha	AVE
PCS	0.96	0.95	0.76
Anger	0.91	0.87	0.72
Strain	0.94	0.88	0.90
Anxiety	0.92	0.88	0.74
Perceived usefulness (PU)	0.95	0.92	0.86
Enjoyment (ENJ)	0.97	0.96	0.89
Confirmation (CONF)	0.95	0.92	0.87
Satisfaction (SAT)	0.97	0.96	0.89

Finally, the validity of the second-order construct was established. Construct validity was verified by checking that the AVE by each construct was at least 0.5 (see table 5.19). The AVE by Strain (i.e. 0.90) is larger than the minimum threshold, which means that on average, the majority of the variance in the first-order sub-dimensions (i.e. strain school, and strain relations) is shared with this second-order construct (MacKenzie, Podsakoff, & Podsakoff, 2011). Discriminant validity was verified by making sure (i) the square root of the AVE of a construct was larger than the correlation of that construct and any other construct (table 5.20) and (ii) the loadings on theoretical constructs were larger than loadings on other constructs (see table 5.21). With all the reliability and validity criteria met, the second-order construct Strain was used for subsequent analyses.

Table 5.20 Construct correlation matrix – Satisfaction second-order model

	PCS	Anger	Strain	Anxiety	PU	ENJ	CONF	SAT
PCS	**0.87**							
Anger	0.42	**0.85**						
Strain	0.70	0.57	**0.95**					
Anxiety	0.57	0.57	0.61	**0.86**				
PU	-0.28	-0.13	-0.21	-0.28	**0.93**			
ENJ	-0.39	-0.25	-0.36	-0.47	0.59	**0.94**		
CONF	-0.35	-0.20	-0.30	-0.41	0.61	0.70	**0.93**	

	PCS	Anger	Strain	Anxiety	PU	ENJ	CONF	SAT
SAT	-0.33	-0.19	-0.26	-0.46	0.53	0.68	0.82	**0.94**

Values in the diagonal contain the square root of AVE by each construct

Table 5.21 Loadings and cross-loadings – Satisfaction second-order model

	Anger	Anxiety	CONF	ENJ	PCS	PU	SAT	Strain
anger_0	**0.82**	0.46	-0.10	-0.13	0.29	-0.07	-0.04	0.43
anger_1	**0.89**	0.51	-0.24	-0.30	0.39	-0.16	-0.27	0.43
anger_2	**0.81**	0.38	-0.14	-0.16	0.37	-0.09	-0.13	0.50
anger_3	**0.87**	0.56	-0.20	-0.26	0.37	-0.13	-0.19	0.58
anxiety_0	0.53	**0.92**	-0.32	-0.41	0.57	-0.17	-0.34	0.62
anxiety_1	0.52	**0.94**	-0.34	-0.40	0.55	-0.27	-0.37	0.52
anxiety_2	0.61	**0.87**	-0.30	-0.33	0.52	-0.21	-0.37	0.61
anxiety_3_R	0.24	**0.69**	-0.47	-0.52	0.28	-0.33	-0.54	0.31
Conf_0	-0.21	-0.37	**0.94**	0.67	-0.34	0.57	0.80	-0.24
Conf_1	-0.19	-0.37	**0.96**	0.69	-0.30	0.57	0.78	-0.23
Conf_2	-0.18	-0.39	**0.90**	0.59	-0.35	0.56	0.72	-0.39
ENJ_0	-0.20	-0.38	0.68	**0.92**	-0.43	0.63	0.58	-0.44
ENJ_1	-0.24	-0.45	0.63	**0.96**	-0.33	0.54	0.65	-0.31
ENJ_2	-0.26	-0.43	0.66	**0.94**	-0.37	0.52	0.64	-0.30
ENJ_3	-0.26	-0.53	0.66	**0.95**	-0.33	0.52	0.70	-0.31
pcs_0	0.44	0.61	-0.35	-0.41	**0.84**	-0.27	-0.36	0.56
pcs_1	0.39	0.52	-0.33	-0.40	**0.91**	-0.28	-0.27	0.67
pcs_2	0.38	0.44	-0.22	-0.29	**0.86**	-0.20	-0.23	0.66
pcs_3	0.27	0.39	-0.26	-0.30	**0.87**	-0.20	-0.24	0.63
pcs_4	0.30	0.44	-0.25	-0.26	**0.86**	-0.26	-0.21	0.63
pcs_5	0.38	0.55	-0.40	-0.34	**0.87**	-0.24	-0.38	0.57
pcs_7	0.36	0.53	-0.35	-0.36	**0.87**	-0.26	-0.31	0.51
PU_0	-0.15	-0.30	0.53	0.52	-0.23	**0.91**	0.50	-0.13
PU_1	-0.12	-0.26	0.57	0.55	-0.29	**0.94**	0.48	-0.19
PU_2	-0.10	-0.21	0.58	0.56	-0.26	**0.93**	0.49	-0.27
Satisfact_0	-0.17	-0.43	0.79	0.61	-0.33	0.53	**0.95**	-0.30
Satisfact_1	-0.22	-0.47	0.78	0.64	-0.30	0.47	**0.97**	-0.28
Satisfact_2	-0.12	-0.37	0.70	0.65	-0.21	0.42	**0.91**	-0.12
Satisfact_3	-0.20	-0.46	0.82	0.66	-0.39	0.56	**0.94**	-0.27

	Anger	Anxiety	CONF	ENJ	PCS	PU	SAT	Strain
STR_REL	0.55	0.58	-0.34	-0.40	0.64	-0.23	-0.31	**0.94**
STR_SCL	0.54	0.58	-0.23	-0.28	0.68	-0.17	-0.19	**0.95**

5.4.1.2 Formative constructs

The formative construct of the PCS model (i.e. message harshness) was assessed for validity. To start, it was ensured that this construct was correctly specified as formative, following the four decision rules outlined by Jarvis, MacKenzie, and Podsakoff (2003) and summarized by Petter, Straub, and Rai (2007). The first decision rule is to determine the theoretical direction of causality between the construct and its measures. In the case of message harshness, an increase in the saliency, sensitivity, offensiveness, or frequency was theoretically posited to increase a victim's perception of message harshness. This suggests that the indicators define the construct and thus, the latter is formative. The second criterion consists of examining the interchangeability of indicators. In the message harshness construct, indicators are measuring different aspects of it (e.g. frequency of a message, sensitivity of its content) and removing one of the measures may affect the meaning of the construct. This indicates that indicators are formative and not reflective in nature.

The third decision rule involves determining whether the indicators covary with one another. In the case of message harshness, indicators do not necessarily covary with one another. For example, a cyberbullying message dealing with a sensitive topic (i.e. high sensitivity) may be sent to a victim only once (i.e. low frequency). Given that indicators

do not necessarily move in the same direction, they can be considered formative indicators. The final decision rule considers whether the indicators share the same antecedents and consequences. This is a requirement for reflective constructs, but not necessary for formative ones (Petter, Straub, & Rai, 2007). Even though it is considered that those indicators share the same consequences (i.e. PCS), their antecedents may not be the same. For example, a victim's perception of the sensitivity of a message may be affected by the importance of different topics (e.g. politics, religion) to her/him, while a victim's perception of frequency of a message may vary depending on how much the person uses social media and interacts with friends through them.

The analysis of the above four decision rules helped to identify that message harshness could be specified as formative and thus, the next step was to establish its validity. This was assessed with the weights of the indicators and their significance (Petter, Straub, & Rai, 2007). Table 5.22 below shows that two items of message harshness did not achieve significance at the 0.05 level and thus, those indicators could be considered for deletion. However, it was important to consider that all the aspects of the construct domain were captured with its indicators (Bollen & Lennox, 1991; Diamantopoulos & Winklhofer, 2001). Therefore, and "because multicollinearity may make it difficult to separate the distinct influence of the individual indicators on the construct, the redundancy in the indicators should be examined using the variance inflation factor (VIF)" (MacKenzie, Podsakoff, & Podsakoff, 2011, p. 317).

An examination of the inter-item correlation matrix (tables 5.23) indicates that the correlation between message offensiveness and sensitivity is larger than the acceptable threshold of 0.8 suggested by Stevens (2002). An initial examination of the VIF indicated that there was multicollinearity issues in the message harshness construct (table not shown here). When all the four indicators were included, the VIF was larger than the 3.3 threshold suggested by Diamantopoulos and Siguaw (2006). Therefore, and considering that the message offensiveness indicator had the lowest indicator weight (a non-significant one) and also showed a high correlation with another item, this item was dropped from further analysis. The final VIF analysis shown in table 5.24 suggests that there is no multicollinearity issues in the remaining items of the message harshness construct.

Table 5.22 Formative construct validity assessment

Construct	**Items**	**Weight**	**T - value**	**Significance**
Message harshness	Message saliency (mess_sal)	0.20	1.46	n.s.
	Message sensitivity (mess_sens)	0.81	3.77	$p < 0.001$
	Message frequency (mess_freq)	0.35	3.20	$p < 0.001$
	Message offensiveness (mess_off)	- 0.10	0.69	n.s.

Table 5.23 Inter-item correlation matrix – message harshness construct

	mess_sal	mess_sens	mess_freq	mess_off
mess_sal	1.00			
mess_sens	0.57	1.00		
mess_freq	0.26	0.27	1.00	
mess_off	0.52	0.85	0.30	1.00

Table 5.24 Variance Inflation Factor (VIF) analysis - message harshness construct

Dependent variable	Independent variables	Tolerance	VIF	Multicollinearity (Yes/No)
mess_sal	mess_sens mess_freq	0.93 0.93	1.08 1.08	No
mess_sens	mess_sal mess_freq	0.93 0.93	1.07 1.07	No
mess_freq	mess_sal mess_sens	0.68 0.68	1.48 1.48	No
Harshness (composite)	mess_sal mess_sens mess_freq	0.67 0.66 0.91	1.50 1.51 1.10	No

Finally, the external validity of the construct was established. This was done through a Multiple Indices Multiple Indicators Model (MIMIC), as suggested by Diamantopoulos and Winklhofer (2001). In this case, the acceptance criterion is related to obtaining acceptable goodness of fit indices (e.g. CFI, RMSEA) (Diamantopoulos & Winklhofer, 2001). Given that Smart PLS does not provide the required fit indices, a two construct MIMIC model (with formative and reflective indicators) was validated in AMOS Version 22 for message harshness (see Figure 5.1). The results of the analysis indicated a significant path coefficient between the formative message harshness construct and the reflective PCS construct ($\beta = 0.66$, $p < 0.001$). In addition, the MIMIC model showed good fit: the fit indices[10] were RMR= 0.076 and CFI= 0.963. The model was deemed acceptable, since its RMR was below the 0.08 threshold, and its CFI was above the 0.95 threshold (MacKenzie, Podsakoff, & Podsakoff, 2011). The fit of the model can be

[10] Hu and Bentler (1999) recommended relying on multiple measures coming from different families of fit indices. In this case, one assesses the absolute fit of the model (i.e. Root Mean Square Residual - RMR) and the other assesses fit relative to a comparison model (i.e. Comparative Fit Index – CFI).

considered as supportive evidence for the set of indicators forming the message harshness construct (Diamantopoulos & Winklhofer, 2001).

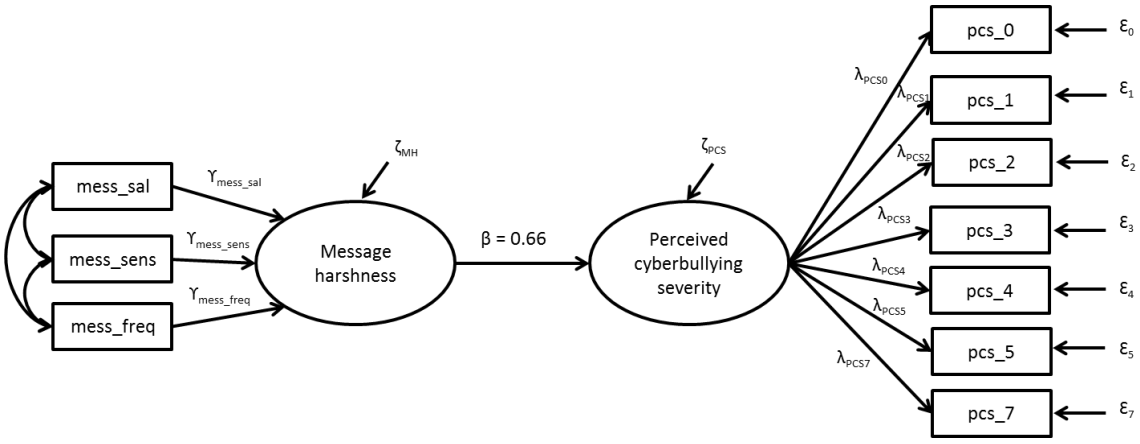

Figure 5.1 Two-construct MIMIC model – Message harshness

5.4.2 Common method bias

When measures are collected using the same method, there is a concern that it may have biasing effects on estimates of the relationships between them (Podsakoff, MacKenzie, & Podsakoff, 2012). Therefore, some procedural remedies (performed before data collection) and statistical remedies (performed after data collection) may be undertaken to try to control for common method bias (Podsakoff, MacKenzie, & Podsakoff, 2012). In this study, some procedural remedies as recommended by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) were followed. First, respondents' anonymity was protected, by disengaging the possibility to capture IP addresses from the online survey and by not asking identifying information in the questionnaire. In addition, participants were informed that there were no right or wrong answers and were asked to

respond to the questions as honestly as possible. These steps may help to reduce participants' evaluation apprehension, as well as the likelihood of obtaining socially desirable responses (Podsakoff, MacKenzie, & Podsakoff, 2012). Second, the order for some questions was counterbalanced, in order to control for priming effects. Specifically, questions related to participants' stable traits (i.e. Neuroticism, Self-esteem) were asked before all the questions related to the cyberbullying episode, in order to avoid biases in the items related to these constructs. Finally, the scale items were improved by defining ambiguous or unfamiliar terms (e.g. defining what coping means before asking participants whether they coped), and by providing examples when needed (e.g. including examples in the definition of cyberbullying message). In addition, and as an effort to reduce item ambiguity, every point in the response scales was labeled (not only the end points) (Krosnick, 1991).

In addition to the procedural remedies undertaken before data collection, some statistical procedures may be used to examine for common method bias after data have been collected. The first procedure used in this study was Harman's single factor test, where all the items in the research model are loaded into an exploratory factor analysis and the unrotated solution is examined to determine the number of factors that account for the variance of the measures (Podsakoff P. M., MacKenzie, Lee, & Podsakoff, 2003). The 40 items of the Satisfaction model yielded a solution with six factors with eigenvalue larger than one. The first factor accounted for 42.53% of the variance, while the six factors together accounted for the majority of the variance (80%). In the PCS model, the 30 items yielded a solution of ten factors with an eigenvalue larger than one. The first

factor accounted for 23.70% of variance, while the ten factors together accounted for 75.07% of variance. As per Podsakoff et al. (2003), since more than one factor emerged from the analysis and the majority of the variance was accounted for by more than one factor, the results do not suggest the presence of common method bias. However, the Harman's single-factor test has some limitations (e.g. does not control for method effects, it is unlikely that a single factor solution will emerge from the analysis) and other statistical procedures should be used (Podsakoff P. M., MacKenzie, Lee, & Podsakoff, 2003).

In order to control for common method bias, an unmeasured latent marked construct (ULMC) technique was used. Specifically, the technique used by Liang, Saraf, Hu, and Xue (2007) and adopted by IS researchers was employed[11]. In this procedure, three steps are followed: (i) each item of the research model is used to create a single-item construct; (ii) the model's constructs (e.g. PCS) are linked to those single-item constructs (e.g. PCS_0); and (iii) a method construct with all the items is added to the research model, by linking it to each single-item construct. This procedure was followed for both the Satisfaction and the PCS models. It is worth mentioning that for the formative construct of the PCS model (i.e. message harshness), and before testing the ULMC technique, an alternative reflective specification of that construct was tested. Since the significant paths of the model remained the same (i.e. no added or lost significant paths, no change in path

[11] It is important to note that Chin, Thatcher, & Wright (2012) questioned the ULMC technique, indicating that it is not able to detect or control for common method bias. However, at the time of data collection and analysis, no alternative techniques were available. Therefore, it was decided to use the ULMC technique as it is one of the most utilized approaches in IS research to identify the existence of common method bias.

sign), those constructs were modeled as reflective for the purpose of assessing common method bias with the ULMC technique.

Following Liang et al. (2007), the coefficients of the paths from the substantive construct (i.e. theoretical construct) and the method factor to each single-indicator construct (denoted as l_1 and l_2, respectively) were examined (see tables 5.25 and 5.26). In addition, the squared loadings of the substantive constructs were interpreted as the item variance caused by those constructs (i.e. $(l_1)^2$), while the square loadings of the method factor were interpreted as the variance caused by the method factor (i.e. $(l_2)^2$). According to Liang et al., "if the method factor loadings are insignificant and the indicators' substantive variances are substantially greater than their method variances, we can conclude that common method bias is unlikely to be a serious concern" (Liang, Saraf, Hu, & Xue, 2007, p. 87). In the Satisfaction model, only four items had significant method factor loadings ($p < 0.05$), unlike the substantive construct loadings that were all significant ($p < 0.001$) (see table 5.25). In the PCS model, no items had a significant method factor loading (at $p < 0.05$), while the entire substantive construct loadings were significant ($p<0.001$) (see table 5.26). Considering that the average substantive variances in both models (0.81 and 0.70, respectively) were considerably larger than the average method variances (lower than 0.01), the results suggest that common method bias was not a concern in this study.

Table 5.25 ULMC Common Method Bias – Satisfaction model

		Substantive construct			Method factor		
Construct	**Item**	**Loading (l_1)**	**Significance**	**$(l_1)^2$**	**Loading (l_2)**	**Significance**	**$(l_2)^2$**
PCS	pcs_0	0.71	p < 0.001	0.50	0.18	p < 0.05	0.03
	pcs_1	0.90	p < 0.001	0.81	0.02	n.s.	0.00
	pcs_2	0.93	p < 0.001	0.87	-0.10	n.s.	0.01
	pcs_3	0.97	p < 0.001	0.95	-0.14	p < 0.05	0.02
	pcs_4	0.95	p < 0.001	0.89	-0.12	p < 0.1	0.01
	pcs_5	0.81	p < 0.001	0.65	0.09	n.s.	0.01
	pcs_7	0.84	p < 0.001	0.70	0.04	n.s.	0.00
Anger	anger_0	0.88	p < 0.001	0.77	-0.11	p < 0.1	0.01
	anger_1	0.85	p < 0.001	0.73	0.07	n.s.	0.00
	anger_2	0.83	p < 0.001	0.69	-0.04	n.s.	0.00
	anger_3	0.84	p < 0.001	0.71	0.05	n.s.	0.00
Strain	str_scl	0.99	p < 0.001	0.98	-0.06	n.s.	0.00
	str_rel	0.90	p < 0.001	0.82	0.06	n.s.	0.00
Anxiety	anxiety_0	0.96	p < 0.001	0.92	-0.05	n.s.	0.00
	anxiety_1	0.99	p < 0.001	0.99	-0.07	n.s.	0.01
	anxiety_2	0.89	p < 0.001	0.79	-0.03	n.s.	0.00
	anxiety_3_R	0.54	p < 0.001	0.29	0.19	p < 0.1	0.04
PU	PU_0	0.92	p < 0.001	0.84	0.01	n.s.	0.00
	PU_1	0.94	p < 0.001	0.89	0.00	n.s.	0.00
	PU_2	0.92	p < 0.001	0.85	-0.01	n.s.	0.00
ENJ	ENJ_0	0.88	p < 0.001	0.77	-0.06	n.s.	0.00
	ENJ_1	1.02	p < 0.001	1.04	0.07	p < 0.1	0.01
	ENJ_2	0.95	p < 0.001	0.90	0.02	n.s.	0.00
	ENJ_3	0.93	p < 0.001	0.87	-0.02	n.s.	0.00
CONF	CONF_0	0.93	p < 0.001	0.86	-0.01	n.s.	0.00
	CONF_1	1.00	p < 0.001	1.01	0.05	n.s.	0.00
	CONF_2	0.86	p < 0.001	0.74	-0.05	n.s.	0.00
SAT	Satisfact_0	0.93	p < 0.001	0.87	-0.02	n.s.	0.00
	Satisfact_1	0.98	p < 0.001	0.95	0.01	n.s.	0.00
	Satisfact_2	1.02	p < 0.001	1.05	0.15	p < 0.05	0.02
	Satisfact_3	0.85	p < 0.001	0.72	-0.12	p < 0.05	0.01
Average		0.90		0.81	0.00		0.01

Table 5.26 ULMC Common Method Bias – PCS model

		Substantive construct			Method factor		
Construct	**Item**	**Loading (l_1)**	**Significance**	**$(l_1)^2$**	**Loading (l_2)**	**Significance**	**$(l_2)^2$**
Message harshnes	mess_sal	0.59	p < 0.001	0.35	0.05	n.s.	0.00
	mess_sens	0.86	p < 0.001	0.74	0.00	n.s.	0.00
	mess_freq	0.72	p < 0.001	0.52	-0.01	n.s.	0.00
Perceived importance	Perc_imp_0	0.77	p < 0.001	0.60	0.01	n.s.	0.00
	Perc_imp_1	0.88	p < 0.001	0.78	-0.03	n.s.	0.00
	Perc_imp_2	0.83	p < 0.001	0.69	0.06	n.s.	0.00
	Perc_imp_3	0.85	p < 0.001	0.72	-0.04	n.s.	0.00
	Perc_imp_4	0.88	p < 0.001	0.77	-0.01	n.s.	0.00
Awareness of recourse	Awar_Recou_0	0.90	p < 0.001	0.81	-0.02	n.s.	0.00
	Awar_Recou_1	0.90	p < 0.001	0.81	0.04	n.s.	0.00
	Awar_Recou_2	0.94	p < 0.001	0.89	-0.03	n.s.	0.00
	Awar_Recou_3	0.87	p < 0.001	0.76	0.01	n.s.	0.00
Neuroticism	neuro_10	0.83	p < 0.001	0.68	-0.04	n.s.	0.00
	neuro_11	0.76	p < 0.001	0.57	0.05	n.s.	0.00
	neuro_4	0.69	p < 0.001	0.48	-0.02	n.s.	0.00
	neuro_6	0.83	p < 0.001	0.68	-0.03	n.s.	0.00
	neuro_8	0.80	p < 0.001	0.64	0.00	n.s.	0.00
	neuro_9	0.81	p < 0.001	0.65	0.03	n.s.	0.00
Self-esteem	SE_0	0.86	p < 0.001	0.73	0.00	n.s.	0.00
	SE_2	0.90	p < 0.001	0.80	0.02	n.s.	0.00
	SE_3	0.84	p < 0.001	0.71	0.01	n.s.	0.00

	SE_6	0.83	p < 0.001	0.68	0.00	n.s.	0.00
	SE_9	0.83	p < 0.001	0.69	-0.04	n.s.	0.00
PCS	pcs_0	0.93	p < 0.001	0.87	-0.12	n.s.	0.01
	pcs_1	0.89	p < 0.001	0.80	0.01	n.s.	0.00
	pcs_2	0.90	p < 0.001	0.82	-0.07	n.s.	0.01
	pcs_3	0.97	p < 0.001	0.95	-0.09	n.s.	0.01
	pcs_4	0.89	p < 0.001	0.80	-0.07	n.s.	0.00
	pcs_5	0.76	p < 0.001	0.58	0.13	n.s.	0.02
	pcs_7	0.67	p < 0.001	0.45	0.20	p < 0.1	0.04
Average		0.83		0.70	- 0.00		0.00

5.4.3 Structural model

Having established the appropriateness of the measurement model and ruled out the presence of common method bias, the next step was to provide evidence for the proposed theoretical models, by examining the structural model. The first measure used to evaluate the predictive power of the models was the R^2 values of the endogenous constructs. Although there is no established cut-off value for this measure, large values are sought after (Gefen, Straub, & Boudreau, 2000). As can be seen in Figures 5.2 and 5.3, the R^2 obtained for almost all endogenous constructs was of at least 0.10 (a threshold recommended by Falk and Miller, 1992)[12]. The only exception to this was the construct

[12] Although the R^2 values of Anger and Enjoyment were above the threshold, they were still low. It is likely that those two constructs have other antecedents (e.g. perceived ease of use impacts enjoyment; van der Heijden, 2004) that were not included in the Satisfaction model, as they are outside the scope of this study.

Perceived Usefulness (PU). Although it had a low R^2 value, this is not totally surprising as past IS literature has shown that perceived usefulness has other antecedents such as perceived ease of use, and subjective norm (see for example Venkatesh and Davis, 2000) and this study only evaluated the effect of the introduced construct of Perceived Cyberbullying Severity (PCS) on PU. It is worth mentioning that the antecedents of Satisfaction explained 70% of this endogenous construct's variance in the Satisfaction model. In the PCS model, all the predictors explained 47% of PCS variance.

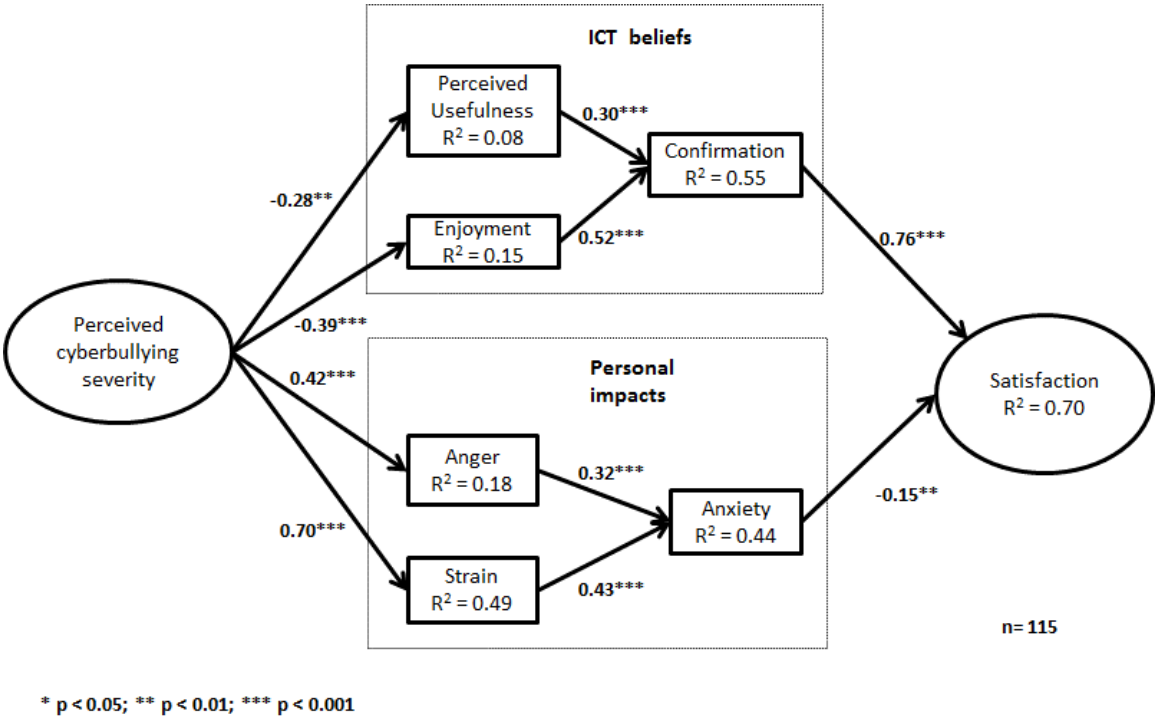

Figure 5.2 PLS model results – Satisfaction model

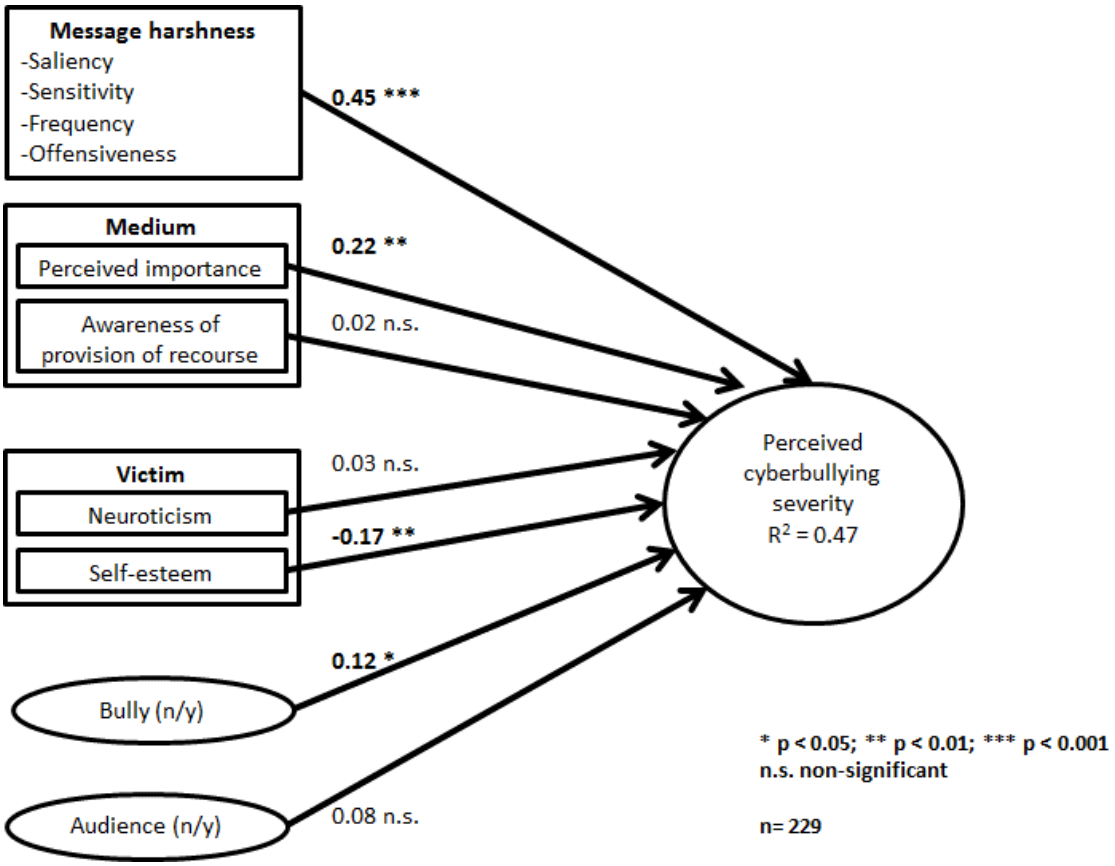

Figure 5.3 PLS model results – PCS model

In order to evaluate the proposed hypotheses, the significance of the path coefficients was evaluated next. In the Satisfaction model, all the hypothesized relationships were supported (see table 5.27). In the PCS model, four out of seven hypotheses were supported (see table 5.28). A discussion on the results is provided in Chapter 6.

Table 5.27 Validation of the study hypotheses – Satisfaction model

Hypothesis	Path	Path coefficient	t-statistic	Significance	Supported (Y/N)
Ha1	CONF → SAT	0.76	16.44	$p < 0.001$	Y
Ha2	PU → CONF	0.30	3.77	$p < 0.001$	Y
Ha3	ENJ → CONF	0.52	6.46	$p < 0.001$	Y
Ha4	Anxiety → SAT	-0.15	2.44	$p < 0.01$	Y
Ha5	Anger → Anxiety	0.32	3.13	$p < 0.01$	Y
Ha6	Strain → Anxiety	0.43	3.95	$p < 0.001$	Y
Ha7	PCS → Anger	0.42	5.33	$p < 0.001$	Y
Ha8	PCS → Strain	0.70	12.01	$p < 0.001$	Y
Ha9	PCS → ENJ	-0.39	4.50	$p < 0.001$	Y
Ha10	PCS → PU	-0.28	3.17	$p < 0.01$	Y

Table 5.28 Validation of the study hypotheses – PCS model

Hypothesis	Path	Path coefficient	t-statistic	Significance	Supported (Y/N)
Hb1	Mess_harsh → PCS	0.45	8.00	$p < 0.001$	Y
Hb2	Perc_imp → PCS	0.22	3.55	$p < 0.01$	Y
Hb3	Awar_rec → PCS	0.02	0.46	n.s.	N
Hb4	Neuro → PCS	0.03	0.74	n.s.	N
Hb5	SE → PCS	-0.17	2.99	$p < 0.01$	Y
Hb6	Bully → PCS	0.12	2.55	$p < 0.05$	Y
Hb7	Audience → PCS	0.08	1.58	n.s.	N

Two additional measures were employed to evaluate the structural model: the Goodness of Fit (GoF) index and the Stone-Geisser test (Q^2). The GoF index is defined as the "geometric mean of the average communality and average R^2 for all endogenous

constructs" (Akter, D' Ambra, & Ray, 2011, p. 3) and can be applied to both reflective and formative latent variables (Vinzi, Trinchera, & Amato, 2010). The suggested baselines for GoF, which is used as a global fit measure for PLS models, are a cut off value for communality of .50 and different values of GoF according to the different effect sizes of R^2 (i.e. GoF_{small} (0.10), GoF_{medium} (0.25), and GoF_{large} (0.36)) (Wetzels, Odekerken-Schröder, & van Oppen, 2009). The GoF value obtained for the Satisfaction model was of 0.55, which exceeds the 0.36 cut-off value for large effect sizes of R^2 and indicates a good performance of the model. The GoF value obtained for the PCS model was of 0.57, exceeding also the 0.36 threshold and indicating that the model performed well.

The Stone-Geisser test, or cross-validated redundancy, (Q^2) measures how well observed variables are reconstructed by the model. A model with a value of Q^2 larger than zero is considered to have predictive validity (Fornell & Cha, 1994; Chin, 1998). The cross-validated redundancy values (i.e. Q^2) for each of the endogenous variables of both models are included in table 5.29 below. All the values indicate that both Satisfaction and PCS models have predictive relevance.

Table 5.29 Cross-validated redundancy values

Model	Endogenous variables	Q^2
Satisfaction model	Satisfaction	0.61
	Confirmation	0.46
	Anxiety	0.33
	Perceived Usefulness	0.06
	Enjoyment	0.13
	Anger	0.13
	Strain	0.43

Model	Endogenous variables	Q^2
PCS model	PCS	0.35

As a last step in evaluating the structural model, the effect sizes of each path of the models were analyzed. The effect size measures the magnitude of the relationship between two variables and can be evaluated with the following guidelines: f^2 small (.02), f^2 medium (.15), and f^2 large (.35) (Cohen, 1988; Rosenthal, 1991). The results of the analysis of effect sizes have been included in tables 5.30 and 5.31 below. The effect sizes in the Satisfaction model are varied (4 small, 3 medium, and 3 large), but the effect sizes in the PCS model are largely small (3 out of 4). The results obtained are not surprising, since effect sizes obtained by researchers in social sciences are frequently small (Ferguson, 2009; Rosnow & Rosenthal, 2003).

Table 5.30 Effect sizes analysis – Satisfaction model

Dependent construct	Independent construct	R^2		f^2	Effect size
		Included	Excluded		
SAT	CONF	0.7	0.21	1.63	Large
	Anxiety		0.68	0.07	Small
CONF	PU	0.55	0.49	0.13	Small
	ENJ		0.37	0.40	Large
Anxiety	Anger	0.44	0.37	0.13	Small
	Strain		0.32	0.21	Medium
PU	PCS	0.08	0.00	0.09	Small
ENJ	PCS	0.15	0.00	0.18	Medium
Anger	PCS	0.18	0.00	0.22	Medium
Strain	PCS	0.49	0.00	0.96	Large

Table 5.31 Effect sizes analysis – PCS model

Dependent construct	Independent construct	R^2		f^2	Effect size
		Included	Excluded		
PCS	Message harshness	0.47	0.33	0.27	Medium
	Perceived importance		0.45	0.05	Small
	Awareness of recourse		0.47	0.00	n.s.
	Neuroticism		0.47	0.00	n.s.
	Self-esteem		0.46	0.04	Small
	Bully		0.46	0.03	Small
	Audience		0.47	0.01	n.s.

5.5 Post hoc analysis

In addition to the items included in the models, and as mentioned before in chapter 4, a series of demographic questions and control variables were included in the questionnaire. Those variables were analyzed to control for their potential influence on the endogenous constructs of the Satisfaction and the PCS models. In total, nine control variables were analyzed: age (ranging between 18 and 30), gender, country of residency (either Canada or the U.S.), year at school participant was at when the cyberbullying episode occurred (henceforth to be referred to as school year, which ranges from being in high school to not being at school at all), previous exposure to cyberbullying episodes (yes/no), experience of traditional bullying while subjected to the cyberbullying episode (yes/no), duration of the cyberbullying episode (ranging from less than one week to more

than six months), use of coping mechanisms (yes/no), and amount of time participant had had a Facebook account for when the cyberbullying episode started (ranging from less than a year to eight years).

In order to analyze the control variables, the first step was exploratory in nature and consisted of calculating bivariate correlations to determine which control variables may have a significant relationship with the endogenous variables in the models. For those variables that were categorical, t-tests and ANOVAs were used to determine if there was any significant difference in the endogenous variables. The results of this preliminary analysis, shown in tables 5.32 and 5.33, indicate that age, gender, school year, duration of the cyberbullying episode, country of residency, exposure to traditional bullying, and use of coping mechanisms have one or more significant relationships with the endogenous constructs in both models.

Table 5.32 Bivariate correlations and ANOVAs (control variables and endogenous constructs) – Satisfaction model

Correlations							
	Anger	**Strain**	**Anxiety**	**PU**	**ENJ**	**CONF**	**SAT**
Age	-0.03	-0.12	0.17	0.00	-0.03	-0.01	-0.14
School year	-0.07	-0.18	0.02	0.03	-0.01	0.02	0.04
Previous exposure to cyberbullying	0.09	-0.03	0.13	-0.01	-0.03	-0.06	-0.12
Exposure to traditional bullying	0.13	0.07	0.11	-0.04	-0.13	-0.13	-0.17
Duration of cyberbullying episode	0.14	**0.31****	**0.28****	**-0.25****	**-0.22***	**-.36****	**-0.28****
Use of coping mechanisms	-0.11	**-0.25****	-0.07	0.05	-0.04	-0.04	-0.05
Time with a Facebook account	0.11	0.09	0.11	0.00	-0.06	0.04	0.09
T-tests							
	Anger	**Strain**	**Anxiety**	**PU**	**ENJ**	**CONF**	**SAT**

Gender (M, F)	**t: -2.91**** (Anger larger for women than men)	t: 1.41	**t: -2.60*** (Anxiety larger for women than men)	t: 1.00	t: 0.56	t: 0.77	t: 1.54
Country (Canada, US)	t: 0.52	t: 1.19	**t: 2.07*** (Anxiety larger for Canada than US)	t: 1.41	t: -0.61	t: -0.09	t: -0.65

* p < 0.05, ** p <0.01

Table 5.33 Bivariate correlations and ANOVAs (control variables and endogenous construct) – PCS model

Correlations	
	PCS
Age	**-0.14***
School year	**-0.20****
Previous exposure to cyberbullying	-0.06
Exposure to traditional bullying	**0.18****
Duration of cyberbullying episode	**0.34****
Use of coping mechanisms	0.07
Time with a Facebook account	0.00
T-test	
	PCS
Gender	t**: -3.20*** (PCS larger for women than men)
Country	t: -0.22

* p < 0.05, ** p <0.01

The next step was to analyze the effect of control variables on each endogenous variable in PLS. Although some of the control variables did not show any significant correlation with the endogenous constructs (e.g. time with a Facebook account), all nine control variables were analyzed in PLS. This analysis consisted of adding each control

variable one at a time to both the Satisfaction and the PCS models, by linking the control variable to each endogenous variable in the model. The significance of those paths were analyzed and the following was found (see tables 5.34 and 5.35): in the Satisfaction model, age had a positive impact on anxiety, indicating that older participants experienced more anxiety as a result of the cyberbullying episode. Country had a negative impact on perceived usefulness, indicating that those perceptions were lower for those living in Canada. Gender had a positive impact on anger, indicating that women experienced this negative emotion more than men as a consequence of the cyberbullying episode. The use of coping mechanisms had a negative impact on strain, indicating that the use of coping mechanisms helped participants reduce the problems they may have faced at school/work or with their family members or friends. The duration of the cyberbullying episode had a negative impact on confirmation, indicating that as the episode lasted longer, participants found less confirmation of the expectations they had of Facebook. This control variable had also a significant path in the PCS model: the longer the duration of the cyberbullying episode, the higher the perception of severity of that episode. Another control variable that had a significant path in the PCS model was school year: the perception of severity was higher for those that experienced cyberbullying while they were in high school or in the early years of college/university. It is important to mention that participants' simultaneous exposure to traditional bullying at the time of the cyberbullying episode did not have any significant influence on the endogenous constructs. This result shows that the impacts of the cyberbullying episode found in this study are independent of those of traditional bullying (Bonanno & Hymel, 2013).

Table 5.34 Control variable analysis– Satisfaction model

Control variable	Endogenous construct	Path	Significance
Age	Anger	0.02	n.s.
	Strain	-0.04	n.s.
	PU	-0.03	n.s.
	ENJ	-0.07	n.s.
	Anxiety	0.23	$p < 0.01$
	CONF	0.01	n.s.
	SAT	-0.02	n.s.
Gender (1=Male, 2=Female, 4= Queer gender)	Anger	0.16	$p < 0.05$
	Strain	-0.01	n.s.
	PU	-0.07	n.s.
	ENJ	0.00	n.s.
	Anxiety	0.10	$p < 0.1$
	CONF	-0.01	n.s.
	SAT	-0.03	n.s.
Country (1=Canada, 2=U.S.)	Anger	-0.02	n.s.
	Strain	-0.06	n.s.
	PU	-0.16	$p < 0.05$
	ENJ	0.02	n.s.
	Anxiety	-0.13	$p < 0.1$
	CONF	0.02	n.s.
	SAT	0.03	n.s.
School year	Anger	0.01	n.s.
	Strain	-0.05	n.s.
	PU	-0.02	n.s.
	ENJ	-0.09	n.s.
	Anxiety	0.13	$p < 0.1$
	CONF	0.01	n.s.
	SAT	0.02	n.s.
Previous exposure to cyberbullying (0=No, 1=Yes)	Anger	0.12	n.s.
	Strain	0.02	n.s.
	PU	-0.03	n.s.
	ENJ	-0.06	n.s.
	Anxiety	0.11	$p < 0.1$
	CONF	-0.04	n.s.
	SAT	-0.05	n.s.
Exposure to traditional bullying (0=No, 1=Yes)	Anger	0.08	n.s.
	Strain	-0.01	n.s.
	PU	0.00	n.s.
	ENJ	-0.09	n.s.
	Anxiety	0.04	n.s.

Control variable	Endogenous construct	Path	Significance
	CONF	-0.05	n.s.
	SAT	-0.05	n.s.
Duration of cyberbullying episode	Anger	-0.05	n.s.
	Strain	0.01	n.s.
	PU	-0.15	n.s.
	ENJ	-0.06	n.s.
	Anxiety	0.11	n.s.
	CONF	-0.18	$p < 0.01$
	SAT	0.04	n.s.
Use of coping mechanisms (0=No, 1=Yes)	Anger	-0.11	n.s.
	Strain	-0.26	$p < 0.001$
	PU	0.06	n.s.
	ENJ	-0.03	n.s.
	Anxiety	0.08	n.s.
	CONF	-0.03	n.s.
	SAT	-0.03	n.s.
Time with a Facebook account	Anger	0.09	n.s.
	Strain	0.07	n.s.
	PU	0.02	n.s.
	ENJ	-0.05	n.s.
	Anxiety	0.04	n.s.
	CONF	0.07	n.s.
	SAT	0.08	$p < 0.1$

Table 5.35 Control variable analysis– PCS model

Control variable	Endogenous construct	Path	Significance
Age	PCS	-0.08	$p < 0.1$
Gender (1=Male, 2=Female, 3=Transgender, 4= Queer gender)		-0.03	n.s.
Country (1=Canada, 2=U.S.)		0.00	n.s.
School year		-0.17	$p < 0.01$
Previous exposure to cyberbullying (0=No, 1=Yes)		-0.07	n.s.
Exposure to traditional bullying (0=No, 1=Yes)		-0.03	n.s.
Duration of cyberbullying episode		0.15	$p < 0.01$
Use of coping mechanisms (0=No, 1=Yes)		-0.03	n.s.
Time with a Facebook account		-0.05	n.s.

Finally, in an effort to determine the magnitude of the impact of control variables on endogenous constructs, all of those that were significant were added to the models at the same time and their effect sizes were analyzed (see tables 5.36 and 5.37). The results indicated that the effects of all the control variables were small. Furthermore, the hypothesized relationships did not change with the addition of the control variables. Therefore, it could be concluded that the control variables did not alter the conclusions derived from the hypotheses of the study.

Table 5.36 Effect sizes analysis for control variables – Satisfaction model

		R^2		f^2	Effect size
Control variable	**Endogenous construct**	**Included**	**Excluded**		
Age	Anxiety	0.49	0.44	0.100	Small
Gender (1=Male, 2=Female)	Anger	0.20	0.18	0.026	Small
Country (1=Canada, 2=U.S.)	PU	0.10	0.08	0.026	Small
Duration of cyberbullying episode	CONF	0.57	0.55	0.056	Small
Use of coping mechanisms (0=No, 1=Yes)	Strain	0.56	0.49	0.149	Small

Table 5.37 Effect sizes analysis for control variables – PCS model

		R^2		f^2	Effect size
Control variable	**Endogenous construct**	**Included**	**Excluded**		
Duration of cyberbullying episode	PCS	0.513	0.502	0.02	Small
School year			0.495	0.04	Small

5.6 Exploratory analysis – the effect of PCS on coping

In addition to the post hoc analysis described above, an exploratory analysis pertaining to the use of coping mechanisms was performed. For this analysis, the data collected from participants in group G2 (n=114) were used. First, the influence of perceived cyberbullying severity (PCS) on the use of coping mechanisms was explored (Research Objective 4). In particular, three coping mechanisms associated with increased emotional regulation and positive affect (Hampel, Manhal, & Hayer, 2009; Yamasaki & Uchida, 2006) and frequently used by victims of cyberbullying (Perren, et al., 2012) were examined: (i) action coping, which refers to "direct, objective attempts to manage a source of stress" (e.g. blocking a bully's contact) (Duhachek, 2005, p. 44); (ii) emotional support coping, which can be defined as "attempts to marshal social resources to improve one's emotional and/or mental state" (e.g. seek out others for comfort) (Duhachek, 2005, p. 44); and (iii) instrumental support coping involves "attempts to marshal social resources to take action towards ameliorating a stressor" (e.g. get advice from someone about what to do) (Duhachek, 2005, p. 46). In order to explore this influence, a correlation analysis between PCS and each of these types of coping was performed (see Table 5.38 below).

Table 5.38 Correlations between PCS and coping mechanisms

	Action Coping	**Emotional Support Coping**	**Instrumental support coping**
PCS	0.20*	0.39**	0.43**

* p <0.05; ** p<0.01

This preliminary analysis indicates that when a cyberbullying episode is appraised as being more severe by the victim (i.e. high perceived cyberbullying severity), she or he may utilize the three different coping mechanisms more to help her or him either terminate the cyberbullying episode or reduce its negative consequences.

Finally, and in order to have a better picture of how those 114 participants used the different coping mechanisms examined, mutually exclusive groups were created. Those groups were formed by using the average score of each type of coping (e.g. action coping) across subjects and by comparing the average score of each subject with this number. The comparison provided a dummy variable for each type of coping: a value of 0, if the average score of a participant was below the average across subjects; and a value of 1, otherwise. Table 5.39 below shows that approximately half of the participants used those coping mechanisms in combination and that approximately 24% of them did not use any of those three mechanisms.

Table 5.39 Frequencies of coping groups

Coping group	Count	Percentage
None	27	23.7
Action coping only	19	16.7
Emotional support coping only	5	4.4
Instrumental support coping only	7	6.1
Action & Emotional coping	4	3.5
Action & Instrumental coping	5	4.4
Emotional & Instrumental coping	18	15.8
All three	29	25.4
Total	114	100

5.7 Analysis of open-ended questions

A final set of questions included in the questionnaire aimed to gain a deeper understanding of the cyberbullying episode experienced by participants. Most of those questions were closed-ended (e.g. how the cyberbullying message was received, how they knew the bully and for how long) and thus, their answers will be discussed in relation to the research objectives of this study in the next chapter. Three open-ended questions asked participants to indicate (i) the type of cyberbullying they experienced, (ii) the relationship they had with the bully (if the s/he was known to the victim), and (iii) whether they changed their Facebook use after the cyberbullying episode.

These three open-ended questions were analyzed following the steps suggested by Bachiochi and Weiner (2004): (i) each response was read to identify categories and sub-categories to use in subsequent coding; (ii) the number of responses and comments were tracked and differentiated, as one person may have provided more than one comment (e.g. a participant may have experienced more than one type of cyberbullying); and (iii) percentages were used to describe results. The responses to the open-ended questions were analyzed for all valid responses in the PCS model (i.e. 229 cases).

It is important to mention that in the coding process of the open-ended questions, responses were analyzed to find codes that could be expected according to past literature and common sense (e.g. in the type of cyberbullying experienced, it was expected that some of the behaviours summarized in Table 2.2 may emerge), as well as codes that are surprising or unusual (e.g. finding the person was cyberbullied by a very close person)

(Creswell, 2009). This process was followed with each open-ended question and coding was done using MS Excel.

5.7.1 Type of cyberbullying experienced

In this question, 219 participants provided an answer. Those participants provided a total of 285 comments related to the type of cyberbullying they experienced. From their responses, sixteen different cyberbullying behaviours were identified and grouped in seven categories based on their similarities. Table 5.40 (shown at the end of this sub-section) includes the codes extracted from participants' responses, the number of times each code appeared and their associated category. When the categories are analyzed, it can be seen that Insults were the predominant category. Behaviours in this category were mentioned 51% of the times. The code that had more mentions in this category was derogatory comments, with 51% of them. However, it may be the case that participants used those terms more than others as they were provided as an example in the question. Other responses where participants used words like "insult" were also included in this code. Three examples of this type of cyberbullying can be found below:

> "*Derogatory comments on a pizza company's wall directed towards my weight. I think it mostly bugged me because I was pregnant*" Participant 76, 28 year old female.
>
> *"Verbally insulted me because of my sexual orientation"* Participant 17, 24 year old male
>
> *"The person didn't like what I said and thought it was better to insult me than to let it go"* Participant 240, 30 year old female.

Participants also reported that they received rude or mean comments, and those were also included in this category. This code was mentioned 31% of the times in this category. Below, two examples are provided:

> *"Rude comments on my posts in a private group, then starting a whole other group just to talk about me and my friends behind our backs. Then messaging me to make derogatory comments about my Autistic brother"* Participant 12, 25 year old female.
>
> *"School bully sent mean messages to me daily that lowered my self-esteem"* Participant 135, 24 year old male.

The third place inside the category was for those that were subjected to name calling, a code mentioned 8% of the times. Two examples of this behaviour are provided below:

> *"I was called horrible names"* Participant 175, 24 year old male.
>
> *"Someone calling me a hoe and a whore with a link to my page attached to their post of Facebook when I didn't even know the person"* Participant 103, 23 year old female.

The two remaining codes in this category included behaviours such as belittling, or being made fun of (6% and 5%, respectively). Some sample responses are provided below:

> *"Sexist comments, belittling both myself and my work habits, rude and uncalled for criticism, name calling, etc."* Participant 27, 26 year old male.
>
> *"Criticizing my views on parenting, name calling, swearing, put downs"* Participant 35, 29 year old female
>
> *"Making fun of me and my family"* Participant 207, 27 year old male.
>
> *"A friend had posted a link regarding a situation where they felt that someone was homophobic to them. A person started making fun of the situation and attacking anyone who disagreed. Made horrible comments towards women/queer/trans folks"* Participant 55, 25 year old queer.

The second most mentioned category was Threats, with 16% of mentions. Although most of the mentions did not include what the threats involved, some of the participants mentioned that their well-being was threatened, others were threatened with the disclosure of sensitive information (e.g. photos), and someone even received death threats. Below, there are some examples of the threats participants were subjected to:

> *"Threatening and offensive chat messages. Threats of blackmail with screenshots of video chat"* Participant 262, 24 year old male.
>
> *"Threatening messages about exposing secrets that weren't true"* Participant 22, 19 year old female.
>
> *"Threatening messages, threatening the wellbeing of my pets"* Participant 201, 30 year old male.
>
> *"He posted on his wall that he was going to come to where I and another girl live and "go redneck on us". He called us derogatory names"* Participant 50, 28 year old female.
>
> *"Somebody threatened me and my family. They threatened to post pornographic photos of me"* Participant 279, 24 year old male.

The third most mentioned category was the use of private information, with 12% of mentions. In this category, the most mentioned code was posting/sharing embarrassing photos (52% of mentions in the category). Three examples of this type of cyberbullying are included below:

> *"Embarrassing video of myself dancing"* Participant 118, 23 year old male.
>
> *"I graduated college two years ago and found a job in my field soon after. My job was as a public figure where my face would be shown on TV. A girl who really disliked me throughout college decided to post embarrassing pictures of me and send me private rude messages about how I don't deserve that job."* Participant 209, 24 year old female.

> *"An acquaintance took embarrassing photos of me and posted them to a group, inviting several mutual friends to mock me."* Participant 110, 25 year old male.

Participants also reported how cyberbullies would use photos of them (non-embarrassing in nature) without their authorization (18% of mentions in the category). Two examples of this code are included below:

> *"The bully would take pictures of me at school and then post them on Facebook with insulting/embarrassing captions."* Participant 194, 18 year old female.
>
> *"She wasn't my friend on fb and would share my photos on her wall as a joke!"* Participant 33, 28 year old female.

A third code that was included in this category was posting or sharing altered photos, with 12% of the mentions. No examples are included here for this code, as participants did not provide details beyond mentioning "altered photos" or "photoshopped photos". Another code with the same frequency of occurrence was impersonation, where the bullies created fake profiles with a victim's information or hacked a victim's Facebook account. Below, two examples are shown:

> *"Hacked my Facebook and posted a very embarrassing photo of me and tagged my girlfriend in it so all of her friends and family could see it"* Participant 198, 25 year old male.
>
> *"Someone I thought was a friend hacked into my Facebook account and pretended to be me, sending multiple sexual messages to various men. These were then posted on other's Facebook walls. Everyone in my community saw them, including friends and family."* Participant 196, 27 year old female.

Lastly, in this category, the disclosure of sensitive information was mentioned 6% of the times. The example included below shows how the disclosure of sensitive information was part of a "larger-scale" cyberbullying this participant was subjected to:

> *"It was rumored that I was cheating on my significant other and people referred to an incident in high school and others were twisting what really happened, I received messages that I was a slut and whore but i never did anything and the information got to my partner and caused problems of trust. Someone posted a picture of me in underwear that I gave an old boyfriend in high school and they all commented and shared the picture of course and people continued calling me names and such. It was a never ending nightmare and I didn't do anything to them. All I did was log on."* Participant 138, 29 year old female.

The next category found in participants' responses was harassment, with 8% of the total mentions. In this category, participants described how they would receive constant messages with insults or information that was upsetting for them. The examples included below illustrate this behaviour:

> *"I had a miscarriage - a close family member continued to post baby information and released medical information about me. Posted photos of miscarriages to my wall."* Participant 222, 30 year old female.

> *"Lots of harassment about my work ethic, how I acted around the office, who I associate myself with."* Participant 18, 30 year old male.

> *"She would constantly creep my profile and discuss what I was doing with my bf at the time! She has kids with my son's dad and ever since I've known her she has done nothing but make me feel terrible about myself! She's the reason why me and my son's dad isn't together"* [sic] Participant 33, 28 year old female.

> *"A random person who knew a lot about me continually harassed me using what I learned to be a fake account. They would send mean messages, post mean comments on my posts, etc."* Participant 146, 25 year old male.

> *"My son was involved in a baseball league as well as some of my other friends and their children. I was on the board. The same girl who bullied me in junior high 15 yrs. ago started again. She too was involved and started sending me msgs asking why*

> *I gave her looks and calling me a f*** little girl. watch myself etc."* Participant 78, 20 year old female.

The last identified category was sexual harassment, which represented 2% of the behaviours mentioned. In this category, both explicit photos and written messages of a sexual nature were included. Two examples of this category are provided below:

> *"Someone who was friends with one of my friends started cyber-stalking me after seeing me comment on his friends wall. He went through my pictures, started sending me sexually explicit messages involving very specific photos. I dress modestly and did not have any "Sexy" photos uploaded. I decided to just ignore him, figured he would just get bored and go away. The next day when I signed in to Facebook, I had many away messages. The guy was getting aggressive and angry because I had not replied to him, graphically described how he wanted to rape and impregnate me. After I blocked him, there was no contact for a few days, he eventually made an entirely new Facebook just so he could continue harassing me. I changed my Facebook settings so anything but my name and profile picture was only visible to friends, and I could only receive messages from friends."* Participant 8, 29 year old female.

> *"Sexually explicit photos"* Participant 193, 20 year old female.

Other participants provided answers to this open-ended question, but did not provide specific details on the type of cyberbullying they experienced. Those comments represent 6% of the total aspects mentioned by participants, and two examples of them are listed below:

> *"A woman attempting to tear my marriage apart publicly."* Participant 23, 24 year old female

> *"I used to get contacted by the bully by message, and wall comments."* Participant 167, 22 year old male.

Finally, it is important to note that some participants were subjected to different types of cyberbullying during the same episode. This situation was reported by about

25% of all participants that provided an answer to this question. In some cases, as seen in the examples below, the cyberbullying episode involved an escalation of actions:

> *"My ex-boyfriend was constantly messaging me in order to harass me and try to get me to go back to dating him. He often threatened me with legal action (against what?) and would threaten to tell everyone all my awful secrets. At one point he posted on my wall about a very deep, personal issue of mine and his grandmother called him out on it. He would also message my friends to spread lies and rumors and try to set up a date and time to physically fight them."* Participant 249, 21 year old female.

> *"Threatening messages sent privately, derogatory messages posted on wall and sent to my friends on Facebook. After I deleted my account they created a fake account, added all my family and friends and posted photoshopped photos and wrote awful things about me"* Participant 289, 25 year old female.

> *"It began with berating comments on a group page. Then the girl proceeded to cyber stalk a couple friends and bombard my mail and page with random but frequent messages and pics edited with my name on them."* Participant 250, 28 year old female.

A summary of the codes and categories found for this question is provided below in Table 5.40.

Table 5.40 Summary of responses - Type of cyberbullying experience

Question: Please describe briefly the type of cyberbullying you experienced (e.g. derogatory comments on Facebook wall, threatening messages, posting embarrassing photos).			
Category	**Codes extracted from responses**	**Code count**	**Category count**
Insults	Derogatory, offensive comments	73	144
	Rude, mean comments or photos	44	
	Name calling	12	
	Put-downs, belittling	8	
	Being made fun of	7	
Rumours / lies	Rumours / lies	15	15
Threats	Threats	47	47
Sexual harassment	Sexual explicit photos	2	5
	Sexual messages	3	

Harassment	Harassment	24	24
Use of private information	Posting of embarrassing photos	17	33
	Using (non-embarrassing) photos without authorization	6	
	Altered photos	4	
	Disclosing sensitive information	2	
	Impersonation	4	
Other	Other / non-specific response	17	17

5.7.2 The bully and her/his relationship with the victim

The second open-ended question intended to determine whether the victim knew who the bully was and her/his relationship with the victim. A total of 220 participants provided an answer to this question, with 229 comments in total. From those participants, about 20% indicated that the bully was a stranger or unknown to them. Although most of those participants provided just a "No" as an answer, some of them provided more information (see examples below):

> *"It was some girl from another state, did not know her at all!"* Participant 250, 28 year old female.
>
> *"Used a fake profile. Not sure who it was."* Participant 17, 24 year old male.
>
> *"NO. This person remained unanimous but I knew he/she was from my town (which is pretty small) so everyone knows everyone. There were others involved that were also talked about negatively"* Participant 218, 30 year old female.

The remaining comments indicated that the participants knew the bully. From them, the category that stood out was classmate/co-worker, with 31% of mentions. In this category, answers where participants indicated that the bully was a former or a current classmate/co-worker were included. Three examples of the answers provided in this category are shown below:

"Co-worker and co-worker's girlfriend" Participant 284, 26 year old female.

"He was a classmate, not a friend though." Participant 167, 22 year old male.

"Classmate. I knew who they were by name because they went to my middle school, but I never interacted with them." Participant 194, 18 year old female.

The second most predominant category was labelled "Acquaintance". In this category, that represented 21% of responses, comments that explicitly mentioned the word acquaintance were included, along with others such as neighbors, friends of someone the victim knows (e.g. partner, family member), or online contacts (i.e. people the victim did not know offline). The following examples show the type of responses included in this category:

"College housemate." Participant *170, 24 year old male.*

"Just met them on Facebook but did not know them." Participant 190, 24 year old female.

"Yes. Was a former classmate of my girlfriend. I had never met or interacted with him before in my life." Participant 198, 25 year old male.

The third category involved responses where participants indicated the bully was a current or former friend. This category was mentioned 16% of the times, and included responses like the examples included below:

"I think they made a fake Facebook page but it was someone that I called a friend from college" Participant 4, 26 year old female.

"A close friend in my neighborhood and the son of my bishop" Participant 226, 18 year old male.

"Yes, a friend I hung out with about every weekend." Participant 73, 27 year old female.

The fourth category involved the romantic partner of participants. In this category, responses that alluded to former or current partners were included (4% of mentions). Some examples are included below:

> *"Yes. We were seeing each other but had split up a couple days prior to the start of the bullying."* Participant 41, 28 year old female.
>
> *"Yes, my girlfriend."* Participant 285, 27 year old male.
>
> *"Someone I had previously been in a relationship with"* Participant 63, 18 year old female.

In addition to their romantic partners, some participants were also cyberbullied by the former or current partner of people they are/were involved with (e.g. new girlfriend of former boyfriend). This category accounted for 3% of mentions, and some of its examples are listed below:

> *"Fiancé's ex-wife"* Participant 252, 28 year old female.
>
> *"Yes, the ex-boyfriend of my girlfriend."* Participant 128, 26 year old male.
>
> *"Ex-boyfriend's new girlfriend"* Participant 51, 24 year old female.

Finally, 4% of the comments indicated that participants were also cyberbullied by members of their own family or by members of their romantic partner's family. Some sample answers are listed below:

> *"The person is my cousin."* Participant 240, 30 year old female.
>
> *"Uncle"* Participant 199, 26 year old male.
>
> *"He is my ex-husband's step-father."* Participant 50, 28 year old female.

The summary of the codes identified in participants' responses to this question, along with their count and associated categories, can be found below in Table 5.41.

Table 5.41 Summary of responses – Bully and relationship with victim

Question: Do you know who the bully was? If so, please indicate how this person was related to you (e.g. classmate, neighbour).			
Category	**Codes extracted from responses**	**Code count**	**Category count**
Classmate / co-worker	Classmate/co-worker	58	71
	Former classmate	13	
Friend	Friend	29	37
	Former friend	8	
Acquaintance	Acquaintance	7	47
	Neighbor	1	
	Roommate / housemate	2	
	Friend of friend	22	
	Friend of partner	3	
	Friend of family	1	
	Friend of classmate	1	
	Friend's partner	2	
	Someone interested in participant's partner	1	
	Member of a religious group	1	
	Member of a FB group	1	
	Facebook friends / online contacts only	5	
Significant other's new or old partner	Former partner's new girlfriend/boyfriend	2	8
	Partner's ex	6	
Partner	Former partner	6	9
	Partner	3	
Family	Family member	7	10
	In-laws/family of partner	3	
Unknown	Stranger, anonymous person	47	47

5.7.3 Change of Facebook use after the cyberbullying episode

In the last open-ended question, a total of 209 participants provided an answer, with a total of 229 comments. 24% of those comments indicate that some participants did not change their Facebook use after the cyberbullying episode occurred, as can be seen in the three examples shown below:

> *"It didn't really change. The bully was an annoyance but I am too stubborn to let them take over my personal life."* Participant 215, 30 year old female.
>
> *"Not really, it's all the same."* Participant 208, 26 year old male.
>
> *"No, Facebook has never been that important to me, so my usage did not increase or decrease much after the bullying"* Participant 283, 20 year old female.

From the comments that did indicate that participants changed their Facebook use somehow, the most salient category was "Reduced Facebook use". This category refers to the time participants spent on Facebook, as well as the frequency with which they used their Facebook accounts. This category represents 30% of all the comments provided. Some examples are provided below:

> *"I check it less often and care less about what people say/think"* Participant 210, 23 year old female.
>
> *"Yes, I used it less"* Participant 205, 29 year old transgender.
>
> *"Yes. I now use it very rarely. only to interact with family"* Participant 262, 24 year old male.
>
> *"Yes. I am very careful who I interact with, who I accept as friends. I also don't use Facebook that long in each of my interactions."* Participant 221, 29 year old female.

The next prominent category was labelled "Change of activities performed on Facebook" and it accounted for 25% of the comments. The first code included in this

category was participants' indication that they started to be more careful in their Facebook usage (38% of comments in this category). This code included aspects such as being more careful in accepting friends, and on posting or sharing information. Below, there are three examples of this change of behaviour:

> *"I was careful of what I put on the internet because anyone can get a hold of stuff & I used it a little less frequently to avoid temptation. Actually maybe it put things in perspective--less cyber world, more real world...where family & friends physically around."* Participant 287, 21 year old female.
>
> *"Never talked to anyone I didn't completely know afterwards."* Participant 17, 24 year old male.
>
> *"Not overly. This wasn't a very serious incident compared to others' experiences of cyberbullying. I've stopped trying to chime in or make comments on things because i worry of retaliation"* Participant 55, 25 year old queer.

Participants also reported changing the nature of the activities they performed on Facebook (e.g. moving from public to private activities). This change represents 40% of comments in this category, and some examples of it can be found below:

> *"Yes. I stopped posting things publically entirely. I posted less for just my friends, and I stopped giving my opinion on open forums."* Participant 12, 25 year old female.
>
> *"It decreased slightly for a time, moving more toward private uses (private messages and the like, rather than publicly viewable posts)."* Participant 110, 25 year old male.
>
> *"Played more games private stuff instead of social stuff"* Participant 137, 24 year old female.

Some participants reported they changed the security or privacy settings of their accounts, a behaviour that represents 14% of the category. Examples of this code are shown below:

> *"I made sure all of my pictures and posts are private. I do not accept people I "think" I might know."* Participant 218, 30 year old female.

> *"Yes. I changed my privacy settings, and now post a lot less, because now I know how things can be blown out of proportion, and that people are still stuck in the stone age"* Participant 46, 27 year old male.

> *"Yes, I changed everything to be more private, visible to friends only, and removed my surname from my profile."* Participant 8, 29 year old female.

One final behaviour reported in this category was the reduction of number of friends on Facebook. This behaviour accounted for 9% of the category. Two examples are listed below:

> *"I removed friends from my account, restricting it to only close friends"* Participant 232, 23 year old male.

> *"I stopped checking it so excessively. I also removed anyone I'm not close with"* Participant 236, 28 year old female.

An interesting category that resulted from the analysis was one labelled "negative feelings derived from using Facebook", which was mentioned by participants 6% of the times. Two elements were included in this category. The first one was manifested by participants as a decrease of their enjoyment or interest when using Facebook, accounting for 36% of the category. Below, there are some examples:

> *"Yes. I frequented Facebook less often after the incident. It wasn't the same fun activity anymore. I was left with a bad taste."* Participant 191, 24 year old female.

> *"Really lost interest in Facebook b/c I was more worried about receiving other mean messages than checking people's statuses."* Participant 135, 24 year old male.

> *"It's less enjoyable because I realized people are going to jam their thoughts and beliefs down your throat whether you want them or not. And if you having anything "unpopular" to say on any subject, you should be prepared to suffer everyone's bitching and criticism."* Participant 178, 30 year old female.

The second element included in this category refers to hatred of Facebook or using it, which accounted for 64% of the category. Some examples are included below:

> *"I hated Facebook because they did nothing!"* Participant 185, 18 year old female.
>
> *"I didn't want to check it so I didn't have to see the mean stuff I figured was waiting there for me when I logged in. I figured it I didn't see it, it couldn't hurt me."* Participant 146, 25 year old male.
>
> *"I hate it now. Sometimes I have to check it for assignments etc. It used to be "social" ... now I avoid it."* Participant 13, 19 year old female.

Other participants indicated that they stopped using Facebook, a category that was mentioned 6% of the times by participants. This category includes the deactivation or cancellation of the Facebook account, as well as participants' reluctance to login on Facebook. Some examples of this category are provided below:

> *"Yes, I just avoid it because I still feel like I'm so stupid when I'm on it*" Participant 253, 20 year old female.
>
> *"I have pretty much quit using Facebook."* Participant 127, 26 year old male.
>
> *"Yes. Account is now deactivated."* Participant 162, 22 year old female.

The last identified category was "increased use", which was mentioned 3% of the times by participants. Apparently, with the cyberbullying episode, some participants started to check their Facebook accounts more often in order to get up to date information on what the bully was doing. Some examples of this increased use behaviour can be found below:

"Yes, I became obsessed with finding out who it was. I spent more time on Facebook and the internet trying to see if there was a way I could track down who the person was." Participant 53, 28 year old female.

"Yes, I used it a bit more because I wanted to keep better track of what was going on with my page and what my friends might be posting about me. Also I changed my privacy settings so that I have to approve a tag before it appears on my profile." Participant 231, 26 year old male.

"I started living on Facebook and spent all my free time checking to see what my bully was saying about me" Participant 87, 28 year old female.

Finally, some participants indicated that they changed their Facebook use, but did not provide details on this change. This "other" category was mentioned by participants 6% of the times, and some of those comments are included below:

"It did for a couple days, but after I blocked and/or deleted people, I resumed my normal usage." Participant 41, 28 year old female.

"Yes. It's hard to trust it when they are not looking after bullies like they used to." Participant 279, 24 year old male.

"Yes it did. My trust for Facebook is gone now" Participant 9, 28 year old female.

The summary of the codes identified in participants' responses to this question, along with their count and associated categories, can be found below in Table 5.42.

Table 5.42 Summary of responses – Change of Facebook use

Question: Did the nature of your Facebook use change after the cyberbullying episode occurred? If so, please describe how.			
Category	**Codes extracted from responses**	**Code count**	**Category count**
Stopped Facebook usage	Account deactivated/deleted	10	14
	Stopped login in/using Facebook	4	
Reduced Facebook use	Reduced frequency of use	63	68
	Reduced time spent on Facebook	5	
Change of activities performed on	Being more careful in using Facebook (e.g. posting/sharing information,	22	58

Facebook	accepting friends)		
	Change of activities on Facebook	23	
	Change in privacy/security settings	8	
	Reduced number of friends	5	
Negative feelings derived from using Facebook	Hatred of Facebook or using it	9	14
	Experience was not as enjoyable/interesting as it used to be	5	
Increased Facebook use	Increased use	8	8
Other	Slight change (not specific)	4	13
	Other	9	
No use change	Use did not change	54	54

5.8 Summary

In this chapter, the procedures utilized to collect and analyzed data were presented. The chapter described details about the data collection and screening, followed by a summary of the demographic figures of the participants of the study. Next, the detailed procedures and results of validating the research models proposed in chapter 3 were presented, with an emphasis in the measurement model and the structural model. Finally, post hoc analyses and the analysis of open-ended questions were presented. The implications of the results obtained and detailed in this chapter will be explained in the next chapter.

Chapter 6 – Discussion and conclusions

After presenting the analyses and results of this dissertation, this chapter discusses those findings in detail. Section 6.1 summarizes findings for each one of the research objectives of this dissertation. Section 6.2 provides a discussion on the contributions of this dissertation to theory and practice. The limitations of this study are outlined in section 6.3, while opportunities for future research in the context of cyberbullying are discussed in section 6.4. Finally, section 6.5 provides a conclusion to this chapter and the dissertation.

6.1 Key findings

In his review of previous cyberbullying studies, Tokunaga (2010) pointed out that most of them were performed in the absence of theory. The use of theory allows for the systematic accumulation of knowledge and its application to practical problems (Gregor, 2006). The literature review in Chapter 2 of this dissertation also uncovered the need to both have a measure that considered the perceptions of victims in regard of the severity of a cyberbullying episode they go through and understand the contextual factors that may affect those perceptions. Moreover, and although Sticca and Perren (2013) pointed out that experiencing cyberbullying may reduce the positive feelings derived from using a particular ICT, no known study has explored the mechanisms through which cyberbullying affects users' experience with ICTs. This dissertation addressed these gaps by combining the Transactional Theory of Stress and Coping and the Expectation-Confirmation Theory in order to understand how victims' perceptions of the severity of a

cyberbullying episode ultimately impact their satisfaction with the ICT where they experienced cyberbullying (i.e. cyberbullying medium), as well as which factors of the cyberbullying context affect the victims' perception of severity. Specifically, four research objectives were proposed. The detailed findings regarding each one of those objectives are presented below.

6.1.1 Research objective 1: The influence of PCS on Satisfaction

> *To understand the influence of a victim's perception of the severity of a cyberbullying episode on her/his satisfaction with the cyberbullying medium.*

The literature review presented in Chapter 2 uncovered the need to include victims' perceptions when analyzing the effects of cyberbullying. As such, this study introduced the construct Perceived Cyberbullying Severity (PCS) as a suitable construct that would allow researchers to capture how victims evaluate a particular cyberbullying episode and to understand the wide range of cyberbullying outcomes for victims.

In order to achieve the first research objective, a theoretical model based on a combination of the Transactional Theory of Stress and Coping and Expectation-Confirmation Theory was proposed. This model explored how a victim's perception of the severity of a cyberbullying episode affects a victim's satisfaction with the cyberbullying medium, through two paths (impacts on ICT beliefs and personal impacts). This model was validated using SmartPLS (n=115) and its explanatory power was strong (70% of the variance in satisfaction was explained by the model). In addition, all the ten

hypotheses of the model were supported at the $p < 0.01$ level. Next, specific findings for each of the hypotheses in this model are provided and discussed.

Related hypotheses – The effects of Perceived Cyberbullying severity (PCS)

Ha7: Perceived cyberbullying severity is positively related to anger

Ha8: Perceived cyberbullying severity is positively related to strain

Ha9: Perceived cyberbullying severity is negatively related to enjoyment

Ha10: Perceived cyberbullying severity is negatively related to perceived usefulness

The first set of hypotheses related to this first research objective is concerned with the effects of PCS on the victim (Ha7, Ha8, Ha9, and Ha10). In this dissertation, it was hypothesized that PCS would impact victims in two ways: impacting them personally (Ha7 and Ha8) and impacting their ICT beliefs (Ha9 and Ha10). In terms of personal impacts, it was posited that PCS would be positively related to participants' experiencing of anger and strain. The first relationship, between PCS and anger, had a statistically significant beta coefficient of 0.42 ($p < 0.001$). This relationship had a medium effect size ($f^2 = 0.22$). The association between PCS and strain also had a statistically significant beta coefficient of 0.70 ($p < 0.001$), exhibiting a large effect size ($f^2 = 0.96$). The results for those relationships supported hypotheses Ha7 and Ha8, respectively.

In terms of the impacts of PCS on victims' ICT beliefs, it was proposed that PCS would be negatively related to participants' perceptions of enjoyment and usefulness of the cyberbullying medium (Ha9 and Ha10 respectively). The first relationship, between

PCS and enjoyment, had a significant beta coefficient of -0.39 ($p < 0.001$). This relationship showed a medium effect size ($f^2 = 0.18$). Finally, the association between PCS and perceived usefulness had a significant beta coefficient of -0.28 ($p < 0.01$), exhibiting a small effect size ($f^2 = 0.09$). The direction and significance of both relationships supported hypotheses Ha9 and Ha10 respectively. Although participants did not specifically refer to PCS in their answers to open-ended questions, the quotes below speak of the effects of cyberbullying on victims' enjoyment of the cyberbullying medium.

> *"I frequented Facebook less often after the incident. It wasn't the same fun activity anymore. I was left with a bad taste."* Participant 191, 24 year old female.

> *"It's less enjoyable because I realized people are going to jam their thoughts and beliefs down your throat whether you want them or not. And if you having anything "unpopular" to say on any subject, you should be prepared to suffer everyone's bitching and criticism."* Participant 178, 30 year old female.

Overall, the newly introduced and validated PCS construct was shown to do a good job at measuring victims' perceptions of the severity of cyberbullying episode, revealing its influence on them personally (in the form of a positive relationship with the feelings of anger and strain) as well on their ICT beliefs (in the form of a negative relationship with perceptions of usefulness and enjoyment of the cyberbullying medium).

Related hypotheses – ICT beliefs and their impact on satisfaction

> *Ha1: Confirmation is positively related to satisfaction with the cyberbullying medium*

Ha2: Perceived usefulness is positively related to confirmation

Ha3: Enjoyment is positively related to confirmation

The ICT beliefs of perceived usefulness and enjoyment were hypothesized as antecedents of confirmation of expectations. The relationship between perceived usefulness and confirmation had a statistically significant beta coefficient of 0.30 ($p < 0.001$) exhibiting a small effect size ($f^2 = 0.13$). The association between enjoyment and confirmation had a statistically significant coefficient of 0.52 ($p < 0.001$) and exhibited a large effect size ($f^2 = 0.40$). The direction and significance of these two path coefficients supported hypotheses Ha2 and Ha3, respectively. The apparent predominance of enjoyment as an antecedent of confirmation is not surprising, considering the largely hedonic nature of the cyberbullying medium evaluated (i.e. Facebook)[13]. These two antecedents explained 55% of confirmation's variance.

Confirmation of expectations when using the cyberbullying medium (i.e. Facebook) was found to be the key influencing factor of satisfaction with the cyberbullying medium. The association between confirmation and satisfaction had a high, statistically significant beta coefficient of 0.76 ($p < 0.001$) and exhibited a large effect size ($f^2 = 1.63$) thus supporting H1a. The importance of confirmation as a predictor of satisfaction is consistent with results obtained in other IS continuance studies (e.g. Bhattacherjee & Lin, 2014; Hong, Thong, & Tam, 2006; Limayem, Hirt, & Cheung, 2007).

[13] van der Heijden (2004) found that enjoyment was a stronger predictor than perceived usefulness of the intention to use hedonic systems.

Related hypotheses – Personal impacts and their influence on satisfaction

Ha4: Anxiety resulting from a cyberbullying episode is negatively related to satisfaction with the cyberbullying medium

Ha5: Anger resulting from a cyberbullying episode is positively related to anxiety

Ha6: Strain resulting from a cyberbullying episode is positively related to anxiety

The PCS personal impacts of anger and strain were posited to affect anxiety. The relationship between anger and anxiety had a significant beta coefficient of 0.32 ($p < 0.01$) with a small effect size ($f^2 = 0.13$). The association between strain and anxiety had a significant path coefficient of 0.43 ($p < 0.001$) with a medium effect size ($f^2 = 0.21$). These results supported hypotheses Ha5 and Ha6, respectively. Together, these two antecedents explained 44% of anxiety's variance. The findings around those hypotheses also demonstrate that problems with family members and friends, as well as problems experienced at school/work, as a consequence of the cyberbullying episode appear to have a larger importance than experiencing anger due to the cyberbullying episode in terms of eliciting anxiety.

It was also hypothesized that anxiety resulting from a cyberbullying episode would affect a victim's satisfaction with the cyberbullying medium. The relationship between these two constructs had a significant beta coefficient of -0.15 ($p < 0.01$) and exhibited a small effect size ($f^2 = 0.07$). Although the influence of anxiety on satisfaction was smaller than that of confirmation of expectations, the results indicate that experiencing anxiety

due to a cyberbullying episode is negatively related to users' satisfaction with the ICT through which the cyberbullying episode occurs (i.e. cyberbullying medium). This result supported hypothesis Ha4.

6.1.2 Research objective 2: Factors affecting PCS

To understand the contextual factors that influence a victim's perception of the severity of a cyberbullying episode.

Now that the importance of the construct Perceived Cyberbullying Severity (PCS) in terms of affecting victims' satisfaction with the cyberbullying medium has been established, it is important to identify the contextual factors that affect (PCS). This is in in line with the recommendations of Hong et al. (2014), who highlight the importance of incorporating context in the theories used in IS research. Thus, a second model founded in the Transactional Theory of Stress and Coping and aimed at determining the contextual factors that affect a victim's perception of cyberbullying severity (PCS) was proposed to achieve the second research objective. This model was validated using SmartPLS (n=229) and explained 47% of the variance in PCS. From the seven hypotheses proposed in this model, four were supported (most at the $p < 0.01$ level). Details of each relationship in this model can be found below.

Related hypothesis – Message

Hb1: Cyberbullying message harshness is positively related to perceived cyberbullying severity

According to the results obtained and presented in the previous chapter, the harshness of the cyberbullying message is the strongest antecedent of PCS. This path was the only one in the PCS model that achieved a statistical significance at the $p < 0.001$ level (the beta coefficient was of 0.45). In addition, this path was the only one in the model that had a medium effect size ($f^2 = 0.27$), compared to the non-significant or small effect sizes of other predictors. This indicates that the combined characteristics of a cyberbullying message, such as its saliency, sensitivity, and frequency strongly affect a victim's perception of how severe a cyberbullying episode is. This result supported hypothesis Hb1.

Related hypotheses – Cyberbullying Medium

Hb2: Perceived importance of the cyberbullying medium to the victim is positively related to his/her perceived cyberbullying severity

Hb3: Awareness of provision of recourse mechanisms for victims of cyberbullying is negatively related to their perceived cyberbullying severity

Two characteristics of the cyberbullying medium were explored in the PCS model: the perceived importance of the medium and awareness of provision of recourse. The relationship between perceived importance of the medium to the victim and PCS had a statistically significant beta coefficient of 0.22 ($p < 0.01$), exhibiting a small effect size ($f^2 = 0.05$). This result supported hypothesis Hb2. In the open-ended questions, some participants referred to the importance of Facebook in their social life, when providing

reasons as to why they deactivated their Facebook account (and whether they resumed their usage of Facebook). Three examples are shown below:

> "*I couldn't get away from it [cyberbullying]. but still missed the connections with far away family and friends"* Participant 265, 25 year old female.
>
> *"I felt more alone without it [Facebook]. Never knew what was going on with the people around me. They always were happy and I wasn't"* Participant 29, 19 year old female.
>
> *"In the days/weeks after it happened, I hated checking Facebook for fear of seeing a new message or seeing anything referring to them or me on my newsfeed. Gradually I got over it though and now I use FB more than ever."* Participant 25, 20 year old female.

In those comments, participants referred to negative aspects of not using Facebook as a consequence of the cyberbullying episode. It is reasonable to believe that losing the benefits derived from Facebook (e.g. knowing what others are up to) was distressing for victims and could have enhanced their perceptions of severity.

The second characteristic of the medium explored was the awareness of provision of recourse. The association between this construct and PCS was not significant ($\beta = 0.02$, n.s.) and thus, hypothesis Hb3 was not supported. Researchers in the e-commerce context have found that awareness of mechanisms provided by the vendor (e.g. return policies) can help buyers reduce their perceptions of risk (Gefen, Karahanna, & Straub, 2003; Pavlou & Gefen, 2004). However, the association between knowing the alternatives provided by Facebook that may help victims deal with cyberbullying (e.g. blocking a bully's contact) and perception of cyberbullying severity was not significant. The mean response for Awareness of Recourse was 5.11. This result indicates that on average, participants were one point above the midpoint of the 7-point Likert scale that assessed

this construct (i.e. high awareness of recourse). This awareness was also observed in open-ended questions, when some participants indicated using those recourse mechanisms to deal with the cyberbullying episode. Some examples are shown below:

> *"I, along with many of my friends, blocked and reported the user"* Participant 36, 23 year old female.
>
> *"I deleted and blocked the person and the other person who was friends with the guy"* Participant 54, 30 year old male.
>
> *"I blocked the bully and all of her friends that in turn bullied me as well. Then they made a fake Facebook page so they could still contact me"* Participant 157, 21 year old female.

However, having those tools available for the victims did not seem to help them reduce their perceptions of severity of a cyberbullying episode. A potential explanation of this result is that by the time the cyberbullying episode was at its worst point, victims had already been harmed. As such, it is possible that at that particular moment (i.e. worst point), victims had already used those tools (e.g. reporting a bully) but they were not effective in helping victims terminate the episode or reduce its negative consequences (as illustrated by Participant 157 in the quote above). Another alternative is that victims may have been aware of those tools, but they did not use them up to the worst point. As such, those tools could not have lessened the victims' perceptions of severity at the worst point of the episode. Future studies may thus explore whether the awareness of provision of recourse before the cyberbullying episode starts has an impact on the perceptions of severity at the beginning of the episode. In addition, future studies may also explore

whether the use of those mechanisms (and not the mere awareness of their existence) would play a role in reducing victims' perceptions of severity.

Related hypotheses – Victim

Hb4: Neuroticism is positively related to perceived cyberbullying severity

Hb5: Self-esteem is negatively related to perceived cyberbullying severity

Regarding the victim, two characteristics relevant in explaining victims' reactions to bullying (Einarsen, 2000) were analyzed: neuroticism and self-esteem. The relationship between neuroticism and PCS was not significant ($\beta = 0.03$, n.s.) and thus, hypothesis Hb4 was not supported. A potential explanation of the lack of significance of the path between neuroticism and PCS is that the effect of neuroticism may have been overridden by the effect of self-esteem (discussed next). Self-esteem and neuroticism, in addition to being widely studied personality traits, are also deemed by some authors to be indicators of a broad dispositional term coined core self-evaluations (Judge, Locke, & Durham, 1997). In this view, self-esteem is considered the most fundamental evaluation as it "represents the value that one places on oneself as a person" (Judge & Bono, 2001, p. 80). On the other hand, neuroticism is a "broad trait (one of the dimensions of the five-factor model of personality [Costa & McCrae (1992)]) that manifests one's view of one's emotional stability" (Judge & Bono, 2001, p. 81). Given the global nature of self-esteem, and the significant correlation found between self-esteem and neuroticism in this dissertation ($r = -0.54$, $p < 0.01$), it is reasonable to believe that the effect of self-esteem on PCS would outweigh that of neuroticism.

As expected from the previous discussion, the association between self-esteem and PCS had a significant beta coefficient of -0.17 ($p < 0.01$), exhibiting a small effect size ($f^2 = 0.04$). Some researchers have conducted a correlation analysis between the occurrence of cyberbullying and self-esteem of victims, finding a negative relationship between them (Didden, et al., 2009; Katzer, Fetchenhauer, & Belschak, 2009; Koppejan, 2011). In some studies, it is argued that the occurrence of cyberbullying reduces a victim's self-esteem (e.g. Didden, et al., 2009); while others argue that individuals with low self-esteem are more prone to become victims of cyberbullying (e.g. Katzer, Fetchenhauer, & Belschak, 2009). The result obtained for hypothesis Hb5 shows that, beyond the occurrence of cyberbullying, victims with low self-esteem are more susceptible to perceive a cyberbullying episode as severe compared to those with high self-esteem.

Related hypothesis – Knowing the bully

Hb6: Knowing the bully is positively related to perceived cyberbullying severity

In addition to the victim, another actor involved in a cyberbullying episode is the bully. As discussed in Chapter 2, in some cases bullies are anonymous and may be difficult to identify and trace (Kiriakidis & Kavoura, 2010; Slonje & Smith, 2008). However, most of the time bullies belong to a victim's social group (Cassidy, Faucher, & Jackson, 2013; Mishna, Saini, & Solomon, 2009). Information gathered in the survey indicates that 62.5% of the participants knew their bullies, supporting previous findings in this regard. In addition, and as it was presented in section 5.6.2, bullies varied from being the victim's partner to an acquaintance. It is worth noting that in 24% of the cases,

the bully was close to the participant (i.e. partner, friend, or family member). In most of the cases (66% of those knowing the bully), participants had known the bully for more than a year when the cyberbullying episode occurred (see table 6.1 below).

Table 6.1 Time participants had known the bully for (when cyberbullying episode occurred)

Gender	Count	Percentage
Less than 6 months	23	16.1
Between 6 months and 1 year	25	17.5
Between 1 and 2 years	31	21.7
Between 2 and 3 years	16	11.2
More than 3 years	48	33.6
Total	143	100

In this dissertation, it was hypothesized that knowing the bully would heighten a victim's perception of severity of a cyberbullying episode. The relationship between the two variables (i.e. bully and PCS) had a significant beta coefficient of 0.12 ($p < 0.05$). In addition, this relationship had a small effect size ($f^2 = 0.03$). The results supported the hypothesized relationship (i.e. Hb6). This is in line with findings from Nocentini, et al. (2010), who found that victims perceive cyberbullying as more hurtful if the bully is someone they know and trust (e.g. a friend) than if the bully is unknown to them.

Related hypothesis – Presence of an audience

Hb7: Having an audience to a cyberbullying episode is positively related to perceived cyberbullying severity

The last antecedent of PCS considered was the presence of an audience. As it was discussed in chapter 2, the potential to reach a large audience (e.g. posted material can be distributed beyond the original audience of the bully) is one of the distinctive features of cyberbullying (Machácková, Dedkova, Sevcikova, & Cerna, 2013; Nocentini, et al., 2010). This dissertation hypothesized that victims would perceive a cyberbullying episode to be more severe if the episode had an audience (e.g. comments are posted on the wall of a Facebook group) than if the episode involved private messages (e.g. comments are sent by chat). However, this relationship was not significant ($\beta = 0.08$, n.s.) and thus, hypothesis Hb7 was not supported.

Delving into the information collected in the survey, it was found that about 47% of participants received cyberbullying messages privately (i.e. through Facebook messages or chat). For the remaining participants, the cyberbullying message was posted on a victim's wall (26%), on a group wall (10%), on a victim's friend's wall (15%) and on other places (3.1%; e.g. Facebook pages[14], the bully's wall). Two potential explanations of the lack of significance of the relationship between the presence of an audience and a victim's PCS are offered here. First, the victim may not be fully aware of who exactly saw/received the message. Currently, the only ways of knowing who has seen a post on Facebook is (i) when the message is posted on a group's wall (i.e. it indicates how many and who saw the message), and (ii) when a person that sees the post reacts to it (e.g. by clicking "Like" button). Moreover, it may be the case that when the message is posted

[14] Facebook walls are spaces on individuals' or groups' profiles where others (e.g. Facebook friends) can post information. Facebook pages represent businesses, and offer tools useful for different brands and organizations (e.g. discussion boards) (Facebook, 2014; Ghimire, 2009).

(e.g. on a victim's friend's wall, on a Facebook page) the individuals that see the message are not close to the victim (e.g. people in the same city unknown to the victim). The relevance of those witnessing the cyberbullying episode (e.g. family members, coworkers) may be more important than the presence of an audience per se.

A second alternative is that the potential reaction to the cyberbullying episode by the members of the audience has a larger impact on a victim's perception of severity than their mere presence. Due to the characteristics of media such as social networking sites, the members of an audience can react to episodes by using text, pictures, or even by clicking a button (e.g. "Like" and "Report" on Facebook) (Bastiaensens, Vandebosch, Van Cleemput, DeSmet, & De Bourdeaudhuij, 2014). In general, members of an audience could have three potential reactions to a cyberbullying episode they witness: encouraging the bully, doing nothing, or supporting the victim (Li, 2010; Slonje, Smith, & Frisén, 2012). Sticca and Perren (2013) noted that "…the nature of the reactions of bystanders may influence the effects of the act on the victim (e.g., make it more or less embarrassing or threatening)" (Sticca & Perren, 2013, p. 748). Considering this suggestion and the various potential reactions of the members of an audience, it can be argued that the nature of an audience reaction and not merely their presence is what might impact a victim's perception of the severity of a cyberbullying episode (e.g. a supportive reaction of the audience may help the victim reduce her/his perceptions of severity of the cyberbullying episode). This could be explored in future research studies.

6.1.3 Research objective 3: Development/validation of measures for PCS and its antecedents

To develop and/or validate measures for Perceived Cyberbullying Severity (PCS) and the factors that affect it.

This objective did not have specific hypotheses, as the scales developed and/or validated were used to achieve the principal objectives of this dissertation (i.e. Research Objectives 1 and 2). The scales that measure the victim's characteristics (i.e. neuroticism, and self-esteem) and the perceived importance of the medium were used in this study without further modification from existing scales. The scale measuring the awareness of provision of recourse was adapted from the e-commerce context to the Facebook context. For all of those scales, convergent and discriminant validities were established.

The two new scales used in this study pertained to the message harshness and PCS constructs. The message harshness scale was developed by following Lewis, Templeton, & Byrd's (2005) methodology and was specified as a formative construct (also validated). From the indicators forming this construct (i.e. message saliency, message sensitivity, and message frequency), message sensitivity exhibited the highest weight (0.85). This is not surprising, as the most prominent category of the type of cyberbullying experienced by participants was insults (49% of mentions; see section 5.6.1). Insults directed at victims of cyberbullying might reveal/highlight sensitive information about them (e.g. sexual orientation, being overweight, etc.). Another category of the type of cyberbullying that speaks to the sensitivity of the cyberbullying message was the use of

private information (12% of mentions). This category included aspects such as having embarrassing photos posted, using or altering of photos without consent, and disclosing sensitive information.

In terms of the saliency of the cyberbullying message, it is important to note that 93% of participants indicated that the cyberbullying message(s) was (were) sent to them in the form of text, compared to 33% of participants that received the message in the form of pictures and 4% of them that received the message in the form of videos[15]. Despite the variability in the form of the cyberbullying message received by participants and the fact that photos/videos are considered more salient compared to text (Smith P. K., et al., 2008; Staude-Müller, Bliesener, & Nowak, 2009; Doane, Kelley, Chiang, & Padilla, 2013), the indicator of saliency did not have a significant weight. A potential explanation for its lack of significance is that the item chosen to measure it did not allow participants to distinguish properly the saliency of the diverse forms of the cyberbullying message, as it was theoretically intended.

The scale for PCS was measured during the pilot test with a combination of items from two existing scales that referred to the severity of a disease and the seriousness of a computer threat (Johnston & Warkentin, 2010; Moss-Morris, et al., 2002). Items were retained after the pilot test by using the corrected item-total correlations and item loadings, as per Venkatesh, Morris, Davis, and Davis (2003). The final set of seven items for the PCS construct assesses a participant's perception of the seriousness of the episode,

[15] Note that the percentages do not add up to 100%, as participants could report more than one form of cyberbullying message.

the consequences for the individual and those surrounding her/him, as well as the image that other people may have of her/him as a consequence of the cyberbullying episode. Those items showed a good item reliability (assessed with item loadings and corrected item-total correlations), and the construct exhibited good construct reliability (evaluated with Cronbach's alpha and composite reliability) and validity (assessed with AVE).

6.1.4 Research objective 4: Impact of PCS on the use of different coping mechanisms

To explore the influence of PCS on a cyberbullying victim's utilization of various coping mechanisms.

An exploratory analysis was included in this dissertation to gauge the effect on PCS on victims' utilization of certain coping mechanisms. Those coping mechanisms were selected based on their frequent use by cyberbullying victims and on their ability to help victims to regulate their emotions (Hampel, Manhal, & Hayer, 2009; Perren, et al., 2012). This preliminary analysis indicated that victims tended to use different coping mechanisms in combination (e.g. action coping and emotional support coping together), with about 50% of participants reporting a high use of those three mechanisms in combination. A correlation analysis also pointed out that a high level of PCS was positively related to high usage of the three coping mechanisms selected. This finding is consistent with results in previous studies of stress, where the need to use certain coping mechanisms is high as a result of a high degree of perceived stress (Madden, Summers, & Brown, 1990).

6.2 Contributions

Findings from this dissertation provide significant contributions to theory, practice, and society, which are detailed below.

6.2.1 Contributions to theory

First, from an academic standpoint and to the best of the researcher's knowledge, this is the first known research study to investigate the impact of cyberbullying episodes on users' experience with ICT. The only other known study that has spoken to the effect of cyberbullying on ICT use is that of Sticca and Perren (2013), which suggested that cyberbullying may ruin the pleasure of using Internet and mobile phones. It is worth noting that in that study the authors used hypothetical cyberbullying scenarios and asked participants to compare whether experiencing cyberbullying was worse than experiencing traditional bullying. Thus, the study reported in this dissertation is the first known study to (i) propose a theoretical model to examine the effects of a cyberbullying episode on users' satisfaction with ICT, and (ii) empirically validate this model with actual victims of cyberbullying.

Second, this research answers Tokunaga's (2010) call for using well-established theories in deriving hypotheses in the area of cyberbullying, which is important for gaining a deeper understanding of the cyberbullying phenomenon and how it affects victims. An examination of 66 studies conducted in the area of cyberbullying shows that 89% did not mention any theory in the elaboration of the papers, and the remaining 11% used varied theories such as social dominance theory (to study prevalence and

antecedents; Beran and Li, 2005; Salmivalli, Sainio, and Hodges, 2013), social cognitive theory (to explore bystanders' behaviour; DeSmet, et al., 2012), and protection motivation theory (to study behaviours to prevent cyberbullying; Lwin, Li, and Ang, 2012). From those studies using a theoretical approach, one examined the emotional and behavioural effects of cyberbullying victimization using General Strain Theory (Hinduja & Patchin, 2007). This dissertation used a combination of Transactional Theory of Stress and Coping (TTSC) and Expectation-Confirmation Theory (ECT) to derive hypotheses aimed at explaining cyberbullying impacts on victims at a personal level, on their ICT beliefs, and ultimately, on their satisfaction with ICT.

Recently, there has been an increased interest of IS researchers in areas that do not focus on the positive aspects of ICT (e.g. benefits derived from adoption) but that are rather interested on aspects that may bring negative consequences to ICT users (e.g. ICT-mediated interruptions) (Tarafdar, Gupta, & Turel, 2013). This interest is manifested in conference mini-tracks (e.g. "The Dark Side of Social Networking", at AMCIS 2014), as well as journal publications (e.g. forthcoming special issue of Information Systems Journal, "The dark side of information technology use"). The application of both TTSC and ECT theories in a situation that brings negative consequences for users (i.e. cyberbullying), is a starting point to explore the use of TTSC in future studies to formulate hypotheses and advance research in those "dark side" topics in IS use (e.g. techno-stress).

Third, this study contributes to the advancement of the cyberbullying literature by developing and validating a perceived cyberbullying severity (PCS) construct. Prior to this dissertation, some papers addressed the issue of how severe or harmful a cyberbullying episode is perceived by participants in those studies (e.g. Pieschl et al., 2013; Sticca and Perren, 2013). However, those studies relied mainly on the use of hypothetical cyberbullying scenarios and on manipulating certain conditions (e.g. public vs. private message) to derive conclusions on how severely participants (that are mostly non-victims) perceive particular cyberbullying situations. In those studies, authors either asked participants to rank scenarios in terms of their severity or varied the severity of the scenarios presented to participants to determine how they would react in those situations (e.g. Machmutow, et al., 2012; Sticca and Perren, 2013). The PCS construct introduced and validated in this dissertation is thus the first known construct to measure the perceptions of actual victims of cyberbullying. This construct can be employed by researchers in the area of cyberbullying to investigate how victims perceive episodes across different cyberbullying media (e.g. e-mail, social networking sites) or cyberbullying behaviours (e.g. offensive comments, embarrassing photos). Using this construct will allow researchers to understand better the levels of severity associated with the diverse range of outcomes that victims of cyberbullying may experience (e.g. a victim is not affected, a victim stops going to school/work). In addition, this construct can also be adapted to measure individuals' perceptions of severity of other ICT-related negative experiences (e.g. privacy violations, security breaches).

Fourth, this study also contributes to the advancement of the cyberbullying literature by understanding the contextual factors of the cyberbullying phenomenon that influence victims' perception of cyberbullying severity (i.e. harshness of the cyberbullying message, perceived importance of the medium to the victim, self-esteem of the victim, and knowing the bully). Understanding the main contextual factors that influence cyberbullying severity could inform further research related to cyberbullying effects and how such effects could be mitigated through appropriate coping mechanisms.

Fifth, the development and validation of a scale to measure the construct message harshness sheds light on the elements of the content (e.g. sensitivity of the content) and the form (e.g. frequency with which a message is sent) of a cyberbullying message that affects victims' evaluations of a particular cyberbullying episode.

Finally, the association between the perception of severity of a cyberbullying episode and the utilization of certain coping mechanisms is an important step in understanding victims' motivations to use coping mechanisms when faced with a cyberbullying episode. In particular, it was found that when a cyberbullying episode is appraised as being more severe by the victim (i.e. high perceived cyberbullying severity), she or he may utilize the three different coping mechanisms selected in this study more to help her or him either terminate the cyberbullying episode or reduce its negative consequences. According to the data collected, approximately half of the participants tend to utilize those coping mechanisms (i.e. action coping, instrumental support coping, and emotional support coping) in combination to deal with cyberbullying episodes.

6.2.2 Contributions to practice and society

The results of this study provide technology companies like Facebook insights on the aspects that may affect their users' experience and that may end up alienating them. One of the theoretical models validated in this dissertation found that users' perceptions of usefulness and enjoyment of ICT are negatively impacted, and users' satisfaction is ultimately affected, as a consequence of the severity of a cyberbullying episode. In addition, some of the comments obtained in the open-ended questions of the study highlight that users lost interest in spending time on Facebook or reduced their usage after they experienced a cyberbullying episode through this medium.

Given that the results of this study indicate most of the participants use at least another social media application in addition to Facebook (e.g. Twitter, Instagram), it may be worth for companies like Facebook to explore whether they are doing enough to protect their user base from negative situations like cyberbullying. They may also be concerned with how fast they react to users' concerns once a cyberbullying situation has occurred (e.g. removing reported photos). Quick actions by these companies may be required, if they want to prevent users from experiencing the full consequences of cyberbullying episodes that ultimately impact their satisfaction with these companies' ICT platforms. Moreover, and considering that other negative situations that occur through ICT (e.g. data breaches) have been shown to negatively impact companies' reputation with their customer base (see for example Home Depot's recent customer data

breach; Notte, 2014), quick actions may be required to avoid such reputational negative consequences.

Another contribution of the results of this dissertation is to help individuals that interact with young adult victims of cyberbullying (e.g. family members) understand this phenomenon better in two ways. First, this study informs them about the contextual factors of cyberbullying that affect a victim's assessment of the severity of a cyberbullying episode. This can help them approach the victims and offer them help in areas that are needed. For example, individuals close to the victim may help her/him deal with the situation by intervening and talking to the bully, when the latter is known (e.g. bully is a family member, or a friend of a victim's friend). Second, it also informs them about the impact of cyberbullying on victims' lives. When victims perceive a cyberbullying situation as severe, they may manifest angry feelings and may have confrontations with those around them, or even have problems with their school/work assignments (i.e. strain). Understanding these consequences of a cyberbullying episode may help individuals close to the victim offer her/him better support to overcome this negative experience.

Results from this research can also help counsellors and psychologists design interventions aimed at providing support to cyberbullying victims. In those interventions, counsellors and psychologists may direct their attention to the aspects that are critical to the victim in her/his assessment of the severity of a cyberbullying episode (e.g. victim's self-esteem). In addition, they may consider in the design of their interventions the set of

negative consequences for a victim's life (e.g. strain, anxiety) and include tools to help victims manage those negative consequences. Finally, and considering that high levels of perceived cyberbullying severity lead victims to use highly certain coping mechanisms (i.e. action coping, emotional support coping, and instrumental support coping), counsellors and psychologists may explore how effective those coping mechanisms are in helping victims overcome the negative consequences of a cyberbullying episode and whether such mechanisms could be further enhanced to increase their effectiveness.

Finally, the results of this study can also provide contributions at the societal level. Understanding the factors that contribute to a victim's perception of the severity of a cyberbullying episode, as well as the effects that this perception has on victims' lives, may help to: (i) create awareness campaigns targeting those factors that increase victims' perceptions of cyberbullying severity (e.g. campaigns around the damage of spreading an individual's sensitive information on social media), (ii) inform adults about the consequences that cyberbullying has for young adult victims' real life (e.g. the problem is not limited to the realm of cyberspace), and (iii) prevent more damaging consequences of cyberbullying (e.g. depression, suicidal ideation).

6.3 Limitations

As with any research project, this dissertation study has some limitations, which are summarized in this section. The first one is the generalizability of results to two populations: younger cyberbullying victims, and victims living in other cultures. Adolescents face identity issues and drastic physical changes (Johnson, 2011) that may

play a role in their appraisal of how severe a cyberbullying episode can be. As such, results of this research may not be generalizable to this population. However, and as indicated in previous chapters, it is important to note that young adults that are victims of cyberbullying experience similar effects as younger victims (e.g. anxiety, depression, suicidal thoughts; Kraft & Wang, 2012; Schenk & Fremouw, 2012; Tomsa, Jenaro, Campbell, & Neacsu, 2013).

In addition to the age of victims, it is important to note that the results of this study may not be generalizable to victims in countries outside of North America (where participants of this study live). Previous studies conducted with participants from several countries point out that there are variations across those countries in the meaning of cyberbullying behaviours (i.e. whether they are perceived as intended to inflict harm) and in which behaviours are considered as cyberbullying (e.g. impersonation is not considered in some countries to be a cyberbullying behaviour) (Menesini, et al., 2012; Nocentini, et al., 2010). It is expected that socio cultural factors may affect how victims assess the severity of a cyberbullying episode and even the strength of the consequences of such episodes. Future studies can expand the theoretical models proposed in this dissertation to account for factors relevant for adolescents and victims in different cultures.

The second limitation is that this study is focused on only one cyberbullying medium (i.e. Facebook). The specific characteristics of this particular medium may not be present in other media (e.g. group pages where people can post links, photos, and comments) and

thus, the experience of cyberbullying through these media may be different for victims. An example of this is the limitation of 140 characters to statuses or private messages users of Twitter can post or send. Despite of the focus of this study on one cyberbullying medium, it is worth noting that Facebook is one of the most utilized media in cyberbullying, and it includes characteristics found in other websites (e.g. sharing photos, commenting on others' activities).

The last limitation of this study relates to a methodological choice for its design. During data collection, participants were asked to recall their perceptions and feelings at the time a cyberbullying episode occurred (i.e. in the past). Asking participants to recall their perceptions and feelings of an event that took place in the past may introduce recall bias. Past research indicates that the time interval between the exposure to a situation (e.g. dietary habits, medication usage) and the point at which details of this situation are solicited influences recall (Coughlin, 1990). Moreover, researchers suggest that about 20% of crucial details of an important event are irretrievable from memory after one year of its occurrence (Bradburn, Rips, & Shevell, 1987).

It is worth noting that in an effort to reduce the potential of recall bias in this research, the reporting time frame used was the past twelve months. In addition, a study focusing on an episode in the past was selected because it eliminates ethical issues that could arise if data were collected with victims that are currently experiencing cyberbullying. In such a situation, the study could heighten a victim's negative feelings and this would be an issue given that proper psychological support could not be provided.

6.4 Future research

There are several opportunities to conduct future research in this area, considering the findings and limitations of this study. The first two opportunities derive from the hypothesized relationships of this dissertation that were not supported and that may need to be explored in alternative ways in future studies. One is a victim's awareness of provision of recourse and its impact on a victim's perceived cyberbullying severity. As pointed out in section 6.1.1, victims may be well aware of the existence of tools that are available to them, but this awareness does not have an effect on their perceptions of severity (i.e. relationship between awareness of recourse and PCS was not significant). Future studies can explore the extent to which victims use these tools as an alternative to try stopping cyberbullying episodes, whether others around the victim help her/him by also using those tools (e.g. reporting also a photo on Facebook), and how effective victims consider these tools to be in their efforts to stop cyberbullying or to reduce its negative consequences.

Another hypothesized relationship in this study that was not supported was that of the positive relationship between the presence of an audience and a victim's perception of cyberbullying severity. As indicated before in section 6.1.1, there may be other elements of the audience that may have an impact on how severe a victim considers a cyberbullying episode to be than the mere presence of an audience. Future studies can explore two aspects that may affect this perception of severity: the importance of the members of an audience to a victim, and the reaction of those members to the cyberbullying episode.

Another area for future research is to explore how perceptions of cyberbullying severity are affected when other media are involved in the episode. One possibility is to explore how a victim's perceptions are affected when s/he experiences cyberbullying through more than one medium simultaneously (e.g. receiving Facebook messages and text messages through mobile phones). Another option is to explore the characteristics of media other than Facebook that could affect a victim's perception of severity. For example, if a victim is cyberbullied through a medium like Twitter, it would be worth studying how her/his perceptions of severity are affected if a hashtag is created around the victim (e.g. a hashtag referring to an embarrassing photo), as this would spread the original bully's message fast.

In addition to the variations in the medium through which victims may experience cyberbullying, it may be worth exploring the effect of synchronous or asynchronous exposure to different forms of victimization (e.g. traditional bullying) on a victim's experience of cyberbullying. Future research can assess the extent to which a victim's initial exposure to bullying (or other forms of victimization) and concurrent or subsequent exposure to cyberbullying impacts her/his perceptions of severity of cyberbullying and the strength of its consequences for the victim.

One interesting finding of this dissertation was the interest of cyberbullying victims in using different coping mechanisms when they are faced with cyberbullying episodes they perceive as severe. Thus, a future research study can explore the effectiveness of using those coping mechanisms in reducing cyberbullying negative consequences. A

future study may also explore the extent to which the use of those coping mechanisms helps victims prevent the occurrence of future cyberbullying episodes.

Finally, and as discussed in the previous chapter, one of the open-ended questions of this study indicated a variety of behaviours regarding Facebook usage after a cyberbullying episode occurred (e.g. decreased use, change of activities on Facebook, increased use). A future study on cyberbullying may explore which elements of the cyberbullying context (e.g. relationship with bully, escalation of cyberbullying actions) may be determinants of a victim's Facebook usage behaviour during and after a cyberbullying episode.

6.5 Conclusion

The overarching objective of this dissertation was to examine the mechanisms through which cyberbullying affects a user's experience with ICTs, specifically, a user's satisfaction with the medium through which cyberbullying occurs (i.e. cyberbullying medium). The examination of those mechanisms was done in the context of Facebook, with young adults that experienced cyberbullying within the past twelve months. Considering that IS researchers that conducted previous cyberbullying studies did not investigate how cyberbullying may affect a victim's perceptions of ICTs, or how other cyberbullying impacts (e.g. negative emotions) may affect those perceptions, conducting this research is deemed relevant for both cyberbullying and IS research.

To achieve this overarching objective, this dissertation combined Transactional Theory of Stress and Coping (TTSC) with Expectation-Confirmation Theory (ECT).

TTSC is a well-established framework that helps to explain individuals' varied reactions to stressful situations and has been applied to different contexts (e.g. competitive sports, organizational mergers). ECT is a well known theory from the consumer behaviour literature adopted in the IS domain to explain the factors that influence users' ICT-related behaviours after they adopt a specific ICT (e.g. satisfaction, continuance intention).

Results from this dissertation suggest that the proposed theoretical models had high explanatory power. In particular, findings indicate that the introduced construct of perceived cyberbullying severity affects victims at a personal level (i.e. by increasing their anger and strain, and consequently increasing their anxiety) as well as their ICT beliefs (i.e. by decreasing their perceptions of usefulness and enjoyment of the cyberbullying medium, and consequently reducing their confirmation of expectations of the cyberbullying medium). Ultimately, anxiety and confirmation influence victims' satisfaction with the cyberbullying medium. In addition, findings also indicate that a victim's perceptions of severity (PCS) are affected by (i) the harshness of the cyberbullying message(s) the victim receives (e.g. sensitivity of the message, frequency of messages), (ii) the importance of the cyberbullying medium to the victim, (iii) the self-esteem of a victim (i.e. victims with low self-esteem have a high PCS), and (iv) knowing who the bully is (a known bully increases PCS).

Considering the increased prevalence of cyberbullying and its serious consequences especially for younger adults, the findings and implications of this dissertation are both timely and relevant.

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Appendix A – Consent form

This survey is administered by Sonia Camacho and Dr. Khaled Hassanein, from the DeGroote School of Business McMaster University. The purpose of the survey is to understand the experiences of people that have experienced cyberbullying. The information gathered during this survey will be written up as a dissertation. What we learn from this survey will help us understand how a cyberbullying episode (e.g. receiving threatening messages, having an embarrassing photo posted on a Facebook page) can affect a person's life and her or his experience using information and communication technologies (e.g. Facebook), as well as how a person can use different coping mechanisms to reduce the potential negative effects of cyberbullying.

To learn more about the survey and the researcher's study, particularly in terms of any associated risks or harms associated with the survey, how confidentiality and anonymity will be handled, withdrawal procedures, incentives that are promised, how to obtain information about the survey's results, how to find helpful resources should the survey make you uncomfortable or upset, please read the accompanying letter of information (click here to open the Letter of Information in a new tab).

This survey should take approximately 20 minutes to complete. This survey is part of a study that has been reviewed and cleared by the McMaster Research Ethics Board (MREB). The MREB protocol number associated with this survey is MREB 2013 125.

You are free to complete this survey or not. If you have any concerns or questions about your rights as a participant or about the way the study is being conducted, please contact:

McMaster Research Ethics Secretariat
Telephone 1-(905) 525-9140 ext. 23142
C/o Research Office for Administration, Development and Support (ROADS)
E-mail: ethicsoffice@mcmaster.ca

Having read the above, I understand that by clicking the "Yes" button below, I agree to take part in this study under the terms and conditions outlined in the accompanied letter of information.

- Yes. I agree to participate
- No. I do not agree to participate

Quit Next

Appendix B – Survey questions

Screening questions

Which of the following, if any, have you ever been a victim of? (Select all that apply)

- ☐ Auto theft
- ☐ Banking/Bank card fraud
- ☐ Cheque fraud
- ☐ Credit card theft
- ☐ Home Invasion
- ☐ Identity theft
- ☐ Online/Cyberbullying*
- ☐ Passport theft
- ☐ Physical bullying
- ☐ None of these
- ☐ Don't know

* Participant could only proceed with this answer checked

Where online, have you been a victim of online/cyberbullying? (Select all that apply)

- ☐ Blog Board/Message Board
- ☐ Chat Room
- ☐ Email
- ☐ Facebook*
- ☐ Instant Messenger
- ☐ MySpace
- ☐ Twitter
- ☐ Other
- ☐ Don't know/can't remember

*Participant could only proceed with this answer checked

Cyberbullying involves hostile or aggressive behaviours performed through information and communication technologies (e.g. email, Facebook, mobile phones) by a person (i.e. a bully), which are intended to harm or cause discomfort on others. A cyberbullying episode may consist of one action (e.g. a bully posts an embarrassing picture in a Facebook group) or several actions related to the same issue (e.g. a bully sends several threatening messages over a certain period

of time).Did you experience a completed cyberbullying episode (i.e. an episode that is finished) on Facebook, which you can clearly recall?

○ Yes. I experienced a cyberbullying episode on Facebook and I can recall it clearly*

○ No. I did not experience a cyberbullying episode on Facebook OR I experienced a cyberbullying episode on Facebook, but I cannot recall it clearly

* Participant could only proceed with this answer selected

Page 1 – Victim characteristics

Please indicate the extent to which you agree or disagree with the following statements:

**** Items Neuroticism ****

Please indicate the extent to which you agree or disagree with the following statements:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
On the whole, I am satisfied with myself	○	○	○	○	○	○	○
At times I think I am no good at all	○	○	○	○	○	○	○
I feel that I have a number of good qualities	○	○	○	○	○	○	○
I am able to do things as well as most other people	○	○	○	○	○	○	○
I feel I do not have much to be proud of	○	○	○	○	○	○	○
I certainly feel useless at times	○	○	○	○	○	○	○

I feel that I'm a person of worth, at least on an equal plane with others	○	○	○	○	○	○	○
I wish I could have more respect for myself	○	○	○	○	○	○	○
All in all, I am inclined to feel that I am a failure	○	○	○	○	○	○	○
I take a positive attitude toward myself	○	○	○	○	○	○	○

Page 2 – Medium characteristics and bully

For the remainder of this survey, please focus only on the cyberbullying episode you experienced during the past 12 months on Facebook (if you experienced more than one episode during that period, please focus on the most recent). Please keep in mind that there are no right or wrong answers, so please answer the questions as honestly as possible.

Please indicate the degree to which you agree or disagree with the following statements:

PRIOR TO THE BEGINNING of the cyberbullying episode...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
... Facebook was part of my everyday activity	○	○	○	○	○	○	○
... I was proud to tell people 'I'm on Facebook'	○	○	○	○	○	○	○
... I dedicated a part of my daily schedule to Facebook	○	○	○	○	○	○	○
... I felt out of touch when I had not logged on to	○	○	○	○	○	○	○

Facebook for a while							
... I felt I was part of the Facebook community	○	○	○	○	○	○	○

PRIOR TO THE BEGINNING of the cyberbullying episode...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
... I felt that Facebook had enough safeguards to make me feel comfortable using it	○	○	○	○	○	○	○
... I felt assured that legal and technological structures adequately protected me from problems on Facebook	○	○	○	○	○	○	○
... I felt confident that privacy protection and other technological advances on Facebook made it safe for me to use it	○	○	○	○	○	○	○
... in general, I felt that Facebook was a safe environment to communicate with others	○	○	○	○	○	○	○

PRIOR TO THE BEGINNING of the cyberbullying episode, did you know the bully?

○ Yes*

○ No

* If answer to this question was Yes, participants were shown the next two questions

PRIOR TO THE BEGINNING of the cyberbullying episode, how did you know the bully?

- ○ Off-line only
- ○ Online only
- ○ Both off-line and online

PRIOR TO THE BEGINNING of the cyberbullying episode, how long did you know the bully for?

- ○ Less than 6 months
- ○ Between 6 months and 1 year
- ○ Between 1 and 2 years
- ○ Between 2 and 3 years
- ○ More than 3 years

Page 3 – Message characteristics and audience

The cyberbullying message is understood here as text, photos, or videos that were posted/shared on Facebook by someone (i.e. the bully) during the cyberbullying episode, with the intention to harm or cause discomfort to you. An example of a cyberbullying message is posting on a Facebook wall several derogatory comments about you. Another example could be sharing an embarrassing photo of you on Facebook. Please answer the following questions related to the cyberbullying message(s) you received.

At the time when the cyberbullying episode was at its WORST POINT, please indicate the type of cyberbullying message(s) you had received (select all that apply)

- ☐ Text
- ☐ Photos / images
- ☐ Videos

At the time when the cyberbullying episode was at its WORST POINT, please indicate how the cyberbullying message(s) had been sent to you (select all that apply)

- ☐ Post(s) in your wall
- ☐ Post(s) in a group's wall
- ☐ Post(s) in a friend's wall
- ☐ Facebook message(s)
- ☐ Facebook chat(s)
- ☐ Other, please specify... _____

At the time when the cyberbullying episode was at its WORST POINT, I felt that ...

	Not at	To a very small	To a small	To a moderate	To a fairly great	To a great	To a very great

	all	extent	extent	extent	extent	extent	extent
... the cyberbullying message(s) was(were) noticeable to those that received/viewed it	○	○	○	○	○	○	○
... the content of the cyberbullying message(s) was sensitive to me	○	○	○	○	○	○	○
... the cyberbullying message(s) was(were) offensive to me	○	○	○	○	○	○	○

At the time when the cyberbullying episode was at its WORST POINT, approximately how many times did you receive cyberbullying messages (e.g. follow-up/related messages) from the bully?

- ○ Once / twice
- ○ A few times
- ○ Once / twice a month
- ○ Once / twice a week
- ○ Several times a week
- ○ Once / twice a day
- ○ Several times a day

At the time when the cyberbullying episode was at its WORST POINT, how many people (excluding you) had received / viewed the cyberbullying message/s?

- ○ 0
- ○ 1 - 10
- ○ 11 - 20
- ○ 21 - 30
- ○ 31 - 40
- ○ 41 - 50
- ○ 51 - 60
- ○ 61 - 70
- ○ 71 - 80
- ○ 81 - 90
- ○ 91 - 100

○ More than 100

Page 4 – PCS and coping

Please indicate the degree to which you agree or disagree with the following statements:

At the time when the cyberbullying episode was at its WORST POINT ...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
... the cyberbullying episode was a serious situation	○	○	○	○	○	○	○
... the cyberbullying episode had major consequences on my life	○	○	○	○	○	○	○
... the cyberbullying episode strongly affected the way others see me	○	○	○	○	○	○	○
... the cyberbullying episode had serious consequences for me	○	○	○	○	○	○	○
... the cyberbullying episode caused difficulties for those who are close to me	○	○	○	○	○	○	○
... the cyberbullying episode was severe	○	○	○	○	○	○	○
... the cyberbullying episode did not have much effect on my life	○	○	○	○	○	○	○
... the cyberbullying episode was significant	○	○	○	○	○	○	○

Coping mechanisms refer to the responses adopted by individuals with the intention of reducing the effects of negative events such as cyberbullying (e.g. telling the bully to stop, blocking the bully's contact, asking a friend for help, talking to someone you trust about your feelings, etc.).At

the time when the cyberbullying episode was at its WORST POINT, did you use any coping mechanism(s)?

○ Yes

○ No

Please describe briefly the coping mechanisms you invoked (if any) to deal with the cyberbullying episode (e.g. blocking the bully's contact, talking to a friend). *

* This question was only shown to participants in G2

Page 5 – Anger and strain at school/work[16]

Please indicate the degree to which you agree or disagree with the following statements:

At the time when the cyberbullying episode was at its WORST POINT ...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
... I often lost my temper	○	○	○	○	○	○	○
... I often felt easily annoyed or irritated	○	○	○	○	○	○	○
... I often felt critical of others	○	○	○	○	○	○	○
... I often got angry over things that were not too important	○	○	○	○	○	○	○

At the time when the cyberbullying episode was at its WORST POINT ...

** Items strain at school/work**

[16] Questions appearing in Pages 5 to 7 were only shown to participants in G1. Participants in G2 saw questions in Page 5A and then questions in Page 8

Page 5A – Use of coping mechanisms

Please indicate the extent to which you used the following coping mechanisms to deal with the cyberbullying episode:

	Not at all	To a very small extent	To a small extent	To a moderate extent	To a fairly great extent	To a great extent	To a very great extent
I concentrated on ways the problem could be solved	○	○	○	○	○	○	○
I tried to make a plan of action	○	○	○	○	○	○	○
I generated potential solutions	○	○	○	○	○	○	○
I thought about the best way to handle things	○	○	○	○	○	○	○
I concentrated my efforts on doing something about it	○	○	○	○	○	○	○
I did what had to be done	○	○	○	○	○	○	○
I followed a plan to make things better	○	○	○	○	○	○	○

Please indicate the extent to which you used the following coping mechanisms to deal with the cyberbullying episode:

	Not at all	To a very small extent	To a small extent	To a moderate extent	To a fairly great extent	To a great extent	To a very great extent
I sought out others for comfort	○	○	○	○	○	○	○
I told others how I felt	○	○	○	○	○	○	○
I relied on others to make me feel better	○	○	○	○	○	○	○
I shared my feelings	○	○	○	○	○	○	○

with others I trusted and respected							
I asked friends with similar experiences what they did	○	○	○	○	○	○	○
I tried to get advice from someone about what to do	○	○	○	○	○	○	○
I had a friend assist me in fixing the problem	○	○	○	○	○	○	○

Page 6 –Interpersonal strain and anxiety

Please indicate the degree to which you agree or disagree with the following statements:

At the time when the cyberbullying episode was at its WORST POINT ...

** Items interpersonal strain**

At the time when the cyberbullying episode was at its WORST POINT ...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
... I often felt nervous	○	○	○	○	○	○	○
... I often felt jittery (i.e. tense)	○	○	○	○	○	○	○
... I often felt fidgety (i.e. restless)	○	○	○	○	○	○	○
... I often felt calm	○	○	○	○	○	○	○

Page 7 – ICT beliefs and quality control question

Please indicate the degree to which you agree or disagree with the following statements:

At the time when the cyberbullying episode was at its WORST POINT ...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
... I was very content with Facebook	○	○	○	○	○	○	○
... I was very pleased with Facebook	○	○	○	○	○	○	○
... I felt delighted with Facebook	○	○	○	○	○	○	○
... overall, I was satisfied with Facebook	○	○	○	○	○	○	○

At the time when the cyberbullying episode was at its WORST POINT ...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
... my overall experience with using Facebook was better than what I expected	○	○	○	○	○	○	○
... the benefits provided by Facebook were better than what I expected	○	○	○	○	○	○	○
... overall, most of my expectations from using Facebook were confirmed	○	○	○	○	○	○	○

At the time when the cyberbullying episode was at its WORST POINT, I felt that ...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
... using Facebook enabled me to acquire more information or know more people	○	○	○	○	○	○	○
... using Facebook improved my efficiency in sharing information and connecting with others	○	○	○	○	○	○	○
... Facebook was useful for interacting with other members	○	○	○	○	○	○	○

At the time when the cyberbullying episode was at its WORST POINT ...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
... I found it interesting to use Facebook	○	○	○	○	○	○	○
... I found it fun to use Facebook	○	○	○	○	○	○	○
... I found it exciting to use Facebook	○	○	○	○	○	○	○
... I found it enjoyable to use Facebook	○	○	○	○	○	○	○

Some people do not read the questions carefully or consider their answers thoughtfully. To indicate that you have read and answered the questions carefully and thoughtfully, please select 'neither agree or disagree'

○ Strongly disagree

○ Disagree

- ○ Somewhat disagree
- ○ Neither agree or disagree
- ○ Somewhat agree
- ○ Agree
- ○ Strongly agree

Page 8– Open-ended questions

For the following questions, please remember not to include names or other information that could identify you or the bully either directly or indirectly.

Please describe briefly the type of cyberbullying you experienced (e.g. derogatory comments on Facebook wall, threatening messages, posting embarrassing photos).

Do you know who the bully was? If so, please indicate how this person was related to you (e.g. classmate, neighbour).

Please indicate approximately when the cyberbullying episode started

- ○ 2014
- ○ 2013
- ○ 2012
- ○ 2011
- ○ 2010

... 10 additional choices hidden ...

- ○ 1998
- ○ 1997
- ○ 1996
- ○ 1995
- ○ 1994
- ○ 1993
- ○ 1992
- ○ 1991

○ 1990

The cyberbullying episode lasted

○ Less than 1 week

○ Between 1 week and 2 weeks

○ Between 2 weeks and 3 weeks

○ Between 3 weeks and 1 month

○ 2 months

○ 3 months

○ 4 months

○ 5 months

○ 6 months

○ More than 6 months

Did you experience cyberbullying before this episode happened?

○ Yes*

○ No

* If answer to this question was Yes, then the next question was shown to participants

Please describe briefly the medium through which it occurred (e.g. email, Facebook), its duration, type of cyberbullying experienced (e.g. derogatory comments, threatening messages, posting embarrassing photos) and frequency of messages received.

Did you experience bullying outside the Internet (e.g. at school) while the cyberbullying episode was happening?

○ Yes*

○ No

If answer to this question was Yes, then the next question was shown to participants

Please describe briefly the type of bullying you experienced (e.g. physically hurt, being threatened, sexually harassed) and its duration.

Did the nature of your Facebook use change after the cyberbullying episode occurred? If so, please describe how.

Page 9– Demographics

Please answer the final questions that will provide us with some basic background information about you:

Which of the following describes your present gender identity?

- ○ Male
- ○ Female
- ○ Transgender
- ○ These options do not apply to me. I identify as (please specify) _____

Please indicate your age

- ○ 18
- ○ 19
- ○ 20
- ○ 21
- ○ 22
- ○ 23
- ○ 24
- ○ 25
- ○ 26
- ○ 27
- ○ 28
- ○ 29
- ○ 30

Which country do you live in?

- ○ Canada
- ○ U.S.

At the time the cyberbullying episode was happening, I was ...

- ○ ... in high school
- ○ ... in 1st year of college/university
- ○ ... in 2nd of college/university
- ○ ... in 3rd of college/university
- ○ ... in 4th of college/university
- ○ ... in 5th of college/university
- ○ ... a college/university graduate
- ○ ... not in school

At the time of the cyberbullying episode, for how long had you had a Facebook account?

- ○ Less than a year
- ○ 1 year
- ○ 2 years
- ○ 3 years
- ○ 4 years
- ○ 5 years
- ○ 6 years
- ○ 7 years
- ○ 8 years

Did you deactivate your Facebook account as a result of the cyberbullying episode?

- ○ Yes*
- ○ No

*If the answer was Yes, then the next two questions were shown to participants

Please indicate for how long you deactivated your Facebook account:

- ○ Less than a month
- ○ 1 month
- ○ 2 months
- ○ 3 months

- ○ 4 months
- ○ 5 months
- ○ 6 months
- ○ 7 months
- ○ 8 months
- ○ 9 months
- ○ 10 months
- ○ 11 months
- ○ 1 year
- ○ I cancelled my account completely

Please comment on why you felt you had to deactivate your Facebook account and why you reactivated it (if you did):

Which other social media do you use? (Please check all that apply)

- ☐ Google +
- ☐ LinkedIn
- ☐ Twitter
- ☐ Pinterest
- ☐ Other, please specify... _____

Appendix C – Counselling services information sheet

Thank you for participating in this study.

Here is a list of services where you can find someone to talk to, if you have something on your mind.

If, at this time, you aren't ready to use one of these services, you might want to talk to a trusted family member or friend that you would normally go to when you have something on your mind.

Canada:

Kids Help Phone
Kids Help Phone offers phone and web counselling for people up to the age of 20
Tel:
http://kidshelpphone.ca/Teens/Home.aspx

Salvation Army 24 Hour Suicide Hotline:
Tel.
Web: www.hopesalive.ca

Click here to obtain a province-specific list of resources (this file opens in a new tab)

USA:

Hope Line:
Tel.
Web: http://hopeline.com/gethelpnow.html
Online chat support: https://www.imalive.org/

National Suicide Prevention Lifeline:
Tel.
Web: http://www.suicidepreventionlifeline.org/

Lifeline Crisis Chat:
Web: http://www.crisischat.org/

Quit Submit

Information participants found in province-specific list of resources:

Resources available across provinces in Canada

Government of Alberta - 24-hour Bullying help line:
Tel. 1-888-456-2323

Crisis Centre of British Columbia
24 hour crisis line: Tel. 1-800-784-2433
Web: http://crisiscentrechat.ca/

Manitoba Suicide Line
Tel. 1-877-435-7170
Web: http://www.reasontolive.ca/

Chimo HelpLine (residents of New Brunswick)
Tel. 1-800-667-5005
Web: http://www.chimohelpline.ca/

Mental Health Crisis Centre (Newfoundland and Labrador)
Tel. 1-888-737-4668

NWT Help Line Program
Tel. 1-800-661-0844
Web: http://www.nwthelpline.ca/

FEED NOVA SCOTIA Helpline
Tel. 1-877-521-1188
Web: http://www.feednovascotia.ca/getsupport_helpline.html

Distress Centres serving Ontario:
Web: http://www.dcontario.org/centres.html

Prince Edward Island Helpline:
Tel. 1-800-218-2885

Quebec Suicide Prevention Line:
Tel. 1-866-277-3553
Web: http://www.aqps.info/

Crisis Centres serving Saskatchewan:
Web: http://www.suicideprevention.ca/in-crisis-now/find-a-crisis-centre-now/crisis-centres/crisis-saskatchewan/

Appendix D – The Silhouette ad

Appendix E – Flyers used to promote study in courses

We are conducting a study to understand **cyberbullying on Facebook** and how to prevent its damaging consequences. **Please help us help teenagers and young adults** that are experiencing cyberbullying, by filling an anonymous online survey.

To volunteer for this study, please go to the following link (or scan the QR code with your smart phone): http://fluidsurveys.com/s/cyberbullying/

Appendix F – Measurement instrument

Construct	Source(s)	Item descriptor	Item
Perceived Cyberbullying Severity (PCS) and its antecedents			
PCS	(Johnston & Warkentin, 2010; Moss-Morris, Weinman, Petrie, Horne, Cameron, & Buick, 2002)	pcs_0	The cyberbullying episode was a serious situation
		pcs_1	The cyberbullying episode had major consequences on my life
		pcs_2	The cyberbullying episode strongly affected the way others see me
		pcs_3	The cyberbullying episode had serious consequences for me
		pcs_4	The cyberbullying episode caused difficulties to those who are close to me
		pcs_5	The cyberbullying episode was severe
		pcs_6_r	The cyberbullying episode did not have much effect on my life
		pcs_7	The cyberbullying episode was significant
Message harshness	Items developed in this study	Mess_Sal	The cyberbullying message was noticeable to those that received/viewed it (e.g. my Facebook friends, people that belong to groups I belong to)
		Mess_Sens	The content of the cyberbullying message was sensitive to me
		Mess_Off	The cyberbullying message was offensive to me
		Mess_Freq	Including the first message you received, how many times did you receive cyberbullying messages (e.g. follow-up/related messages) from the bully?
Perceived importance	(Ross, Orr, Sisic, Arseneault, Simmering, & Orr, 2009)	Perc_imp_0	Facebook was part of my everyday activity
		Perc_imp_1	I was proud to tell people 'I'm on Facebook'
		Perc_imp_2	I dedicated a part of my daily schedule to Facebook
		Perc_imp_3	I felt out of touch when I haven't logged on to Facebook for a while
		Perc_imp_4	I felt I was part of the Facebook community
Awareness of provision of recourse	(McKnight, Choudhury, & Kacmar, 2002)	Awar_Recou_0	I felt that Facebook had enough safeguards to make me feel comfortable using it
		Awar_Recou_1	I felt assured that legal and technological structures adequately protected me from problems on Facebook
		Awar_Recou_2	I felt confident that privacy protection

Construct	Source(s)	Item descriptor	Item
			and other technological advances on Facebook made it safe for me to use it
		Awar_Recou_3	In general, I felt that Facebook was a robust and safe environment to communicate with others
Neuroticism	(McCrae & Costa, 2010)	neuro_0	Items not listed for copyright reasons
		neuro_1_r	
		neuro_2_r	
		neuro_3	
		neuro_4	
		neuro_5_r	
		neuro_6	
		neuro_7_r	
		neuro_8	
		neuro_9	
		neuro_10	
		neuro_11	
Self-esteem	(Rosenberg, 1979)	SE_0	On the whole, I am satisfied with myself
		SE_1_R	At times I think I am no good at all
		SE_2	I feel that I have a number of good qualities
		SE_3	I am able to do things as well as most other people
		SE_4_R	I feel I do not have much to be proud of
		SE_5_R	I certainly feel useless at times
		SE_6	I feel that I'm a person of worth, at least on an equal plane with others
		SE_7_R	I wish I could have more respect for myself
		SE_8_R	All in all, I am inclined to feel that I am a failure
		SE_9	I take a positive attitude toward myself
Bully	Item developed in this study	Bully	Did you know the bully?
Audience	Item developed in this study	audience	How many people, excluding you, had received / viewed the cyberbullying message?
Coping mechanisms			
Action coping	(Duhachek, 2005)	act_cop_1	Concentrated on ways the problem could be solved
		act_cop_2	Tried to make a plan of action
		act_cop_3	Generated potential solutions
		act_cop_4	Thought about the best way to handle things
		act_cop_5	Concentrated my efforts on doing something about it
		act_cop_6	Did what had to be done
		act_cop_7	Followed a plan to make things better
Emotional support coping		emo_cop_1	Sought out others for comfort
		emo_cop_2	Told others how I felt

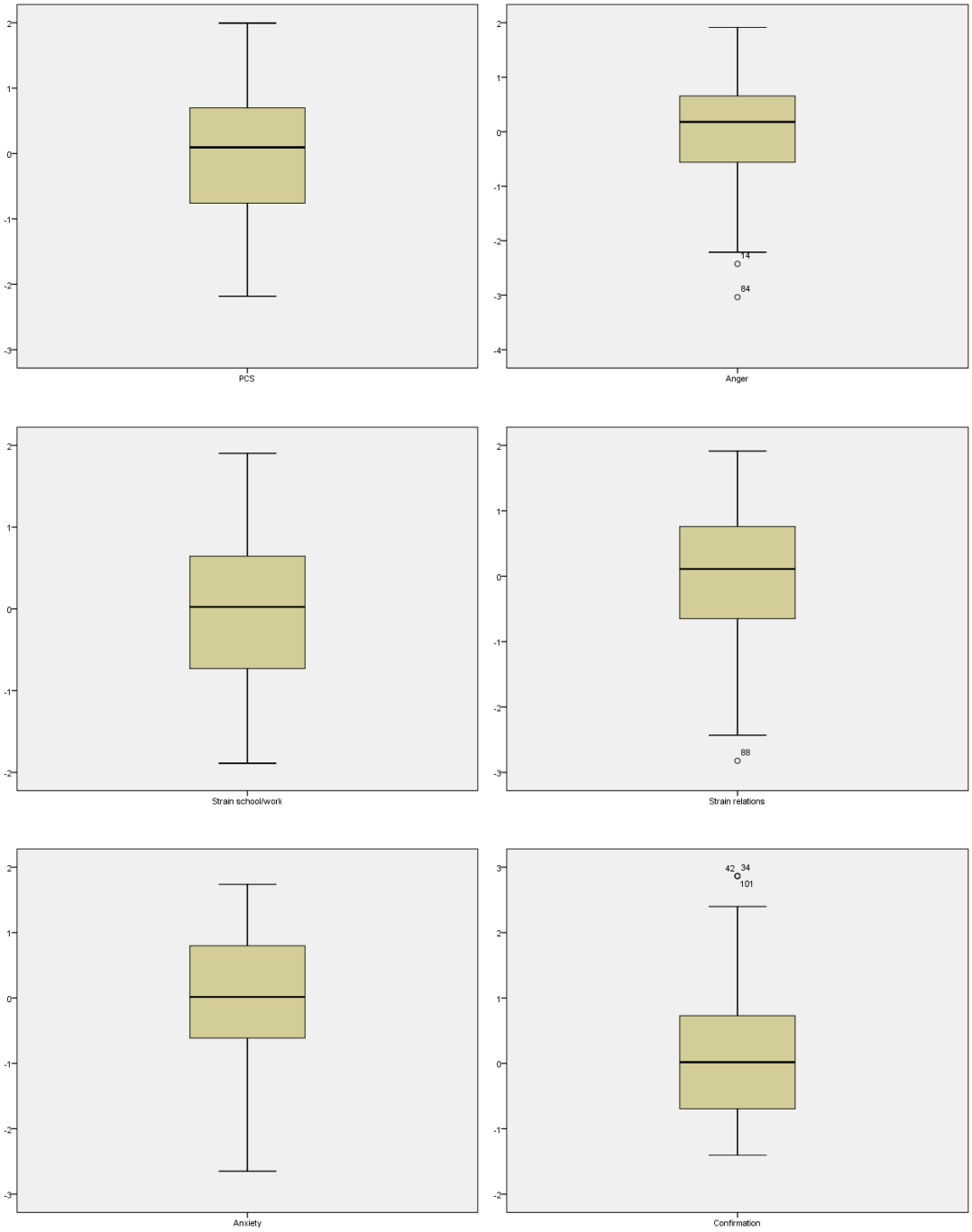
Construct	Source(s)	Item descriptor	Item
		emo_cop_3	Relied on others to make me feel better
		emo_cop_4	Shared my feelings with others I trusted and respected
Instrumental support coping		inst_cop_1	Asked friends with similar experiences what they did
		inst_cop_2	Tried to get advice from someone about what to do
		inst_cop_3	Had a friend assist me in fixing the problem
Personal impacts			
Anger	(Ilfeld, 1978)	anger_0	I often lost my temper
		anger_1	I often felt easily annoyed or irritated
		anger_2	I often felt critical of others
		anger_3	I often got angry over things that were not too important
Strain school/work	(Osipow, 1998)	strain_scl_0	Items not listed for copyright reasons
		strain_scl_1	
		strain_scl_2	
		strain_scl_3	
		strain_scl_4_r	
		strain_scl_5	
		strain_scl_6_r	
		strain_scl_7_r	
		strain_scl_8	
Strain relations	(Osipow, 1998)	strain_rel_0	Items not listed for copyright reasons
		strain_rel_1	
		strain_rel_2_r	
		strain_rel_3	
		strain_rel_4	
		strain_rel_5_r	
		strain_rel_6	
		strain_rel_7	
		strain_rel_8	
Anxiety	(French, Caplan, & Harrison, 1982)	anxiety_0	I often felt nervous
		anxiety_1	I often felt jittery
		anxiety_2	I often felt fidgety
		anxiety_3_R	I often felt calm
ICT Beliefs			
Perceived Usefulness	(Lin & Lu, 2011)	PU_0	Using Facebook enabled me to acquire more information or know more people
		PU_1	Using Facebook improved my efficiency in sharing information and connecting with others
		PU_2	Facebook was useful for interacting with other members
Enjoyment	(Ghani & Deshpande, 1994)	ENJ_0	I found it interesting to use Facebook
		ENJ_1	I found it fun to use Facebook
		ENJ_2	I found it exciting to use Facebook
		ENJ_3	I found it enjoyable to use Facebook

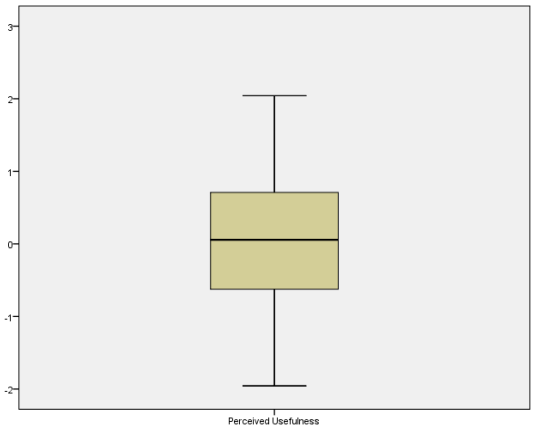
Construct	Source(s)	Item descriptor	Item
Confirmation	(Limayem, Hirt, & Cheung, 2007)	Conf_0	My overall experience with using Facebook was better than what I expected.
		Conf_1	The benefits provided by Facebook were better than what I expected
		Conf_2	Overall, most of my expectations from using Facebook were confirmed
Satisfaction			
Satisfaction	(Au, Ngai, & Cheng, 2008)	Satisfact_0	I was very content with Facebook
		Satisfact_1	I was very pleased with Facebook
		Satisfact_2	I felt delighted with Facebook
		Satisfact_3	Overall, I was satisfied with Facebook

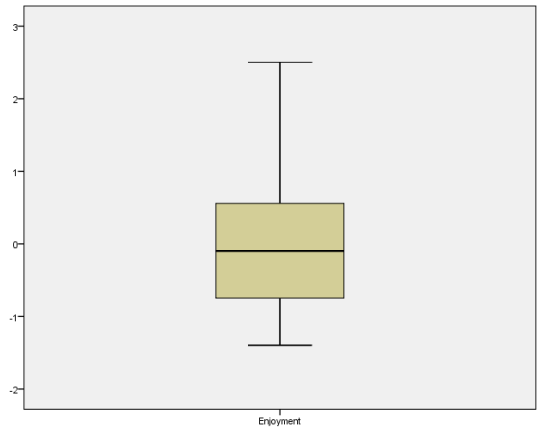
Greyed items indicate those removed from the constructs

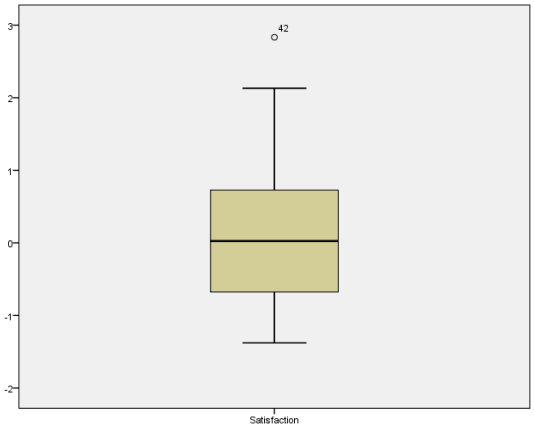
Appendix G – Composite/Indicator Box plots

Satisfaction model

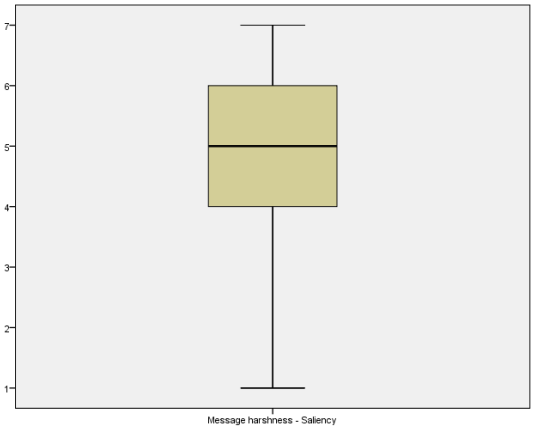



3
2
1
0
-1
-2
Perceived Usefulness

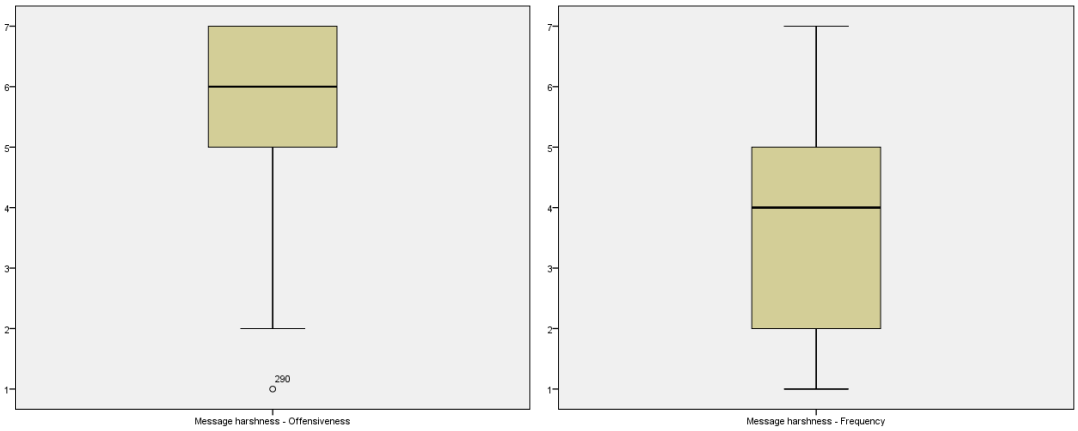

3
2
1
0
-1
-2
Enjoyment


42
3
2
1
0
-1
-2
Satisfaction

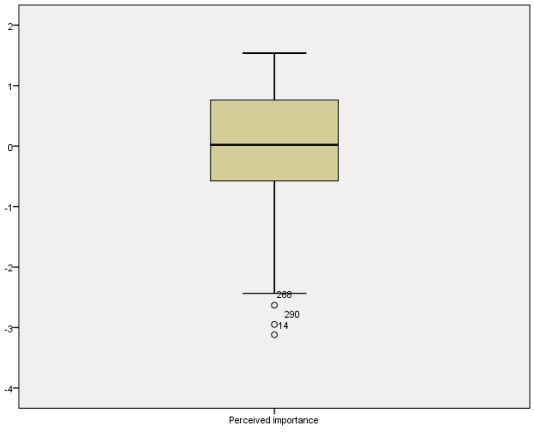
PCS model


7
6
5
4
3
2
1
Message harshness - Saliency

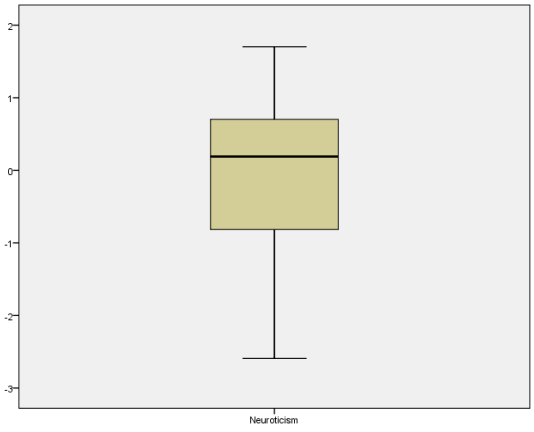

290
7
6
5
4
3
2
1
Message harshness - Sensitivity


7
6
5
4
3
2
1
290
Message harshness - Offensiveness

7
6
5
4
3
2
1
Message harshness - Frequency


2
1
0
-1
-2
-3
-4
268
290
14
Perceived importance


2
1
0
-1
-2
-3
-4
276
201
110
178
Awareness of provision of recourse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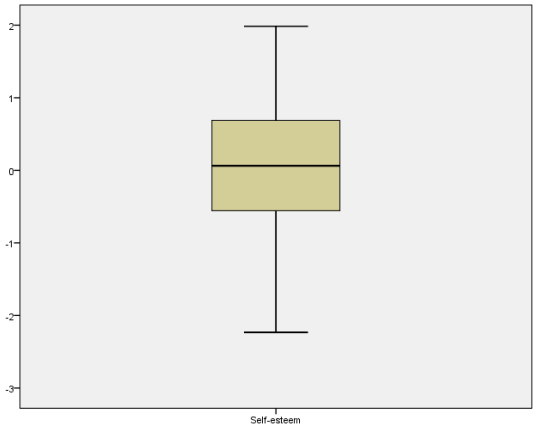
-2
-3
Neuroticism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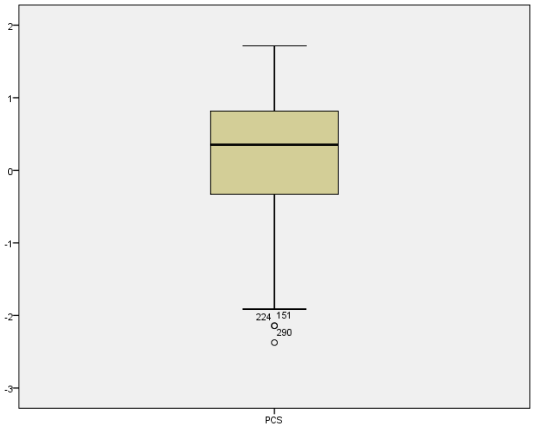
-2
-3
Self-esteem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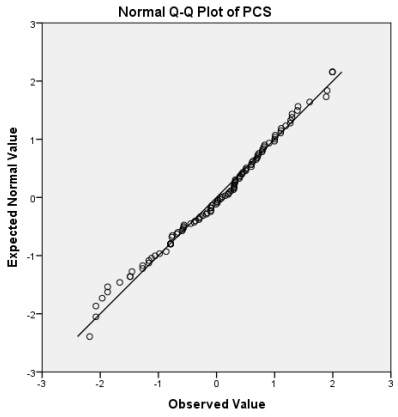
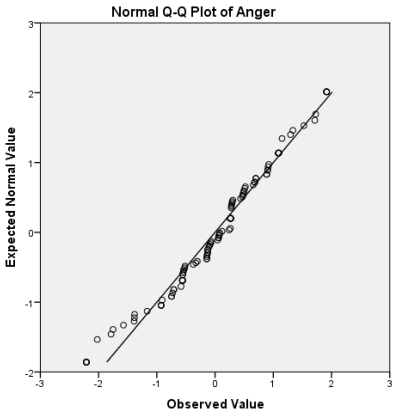
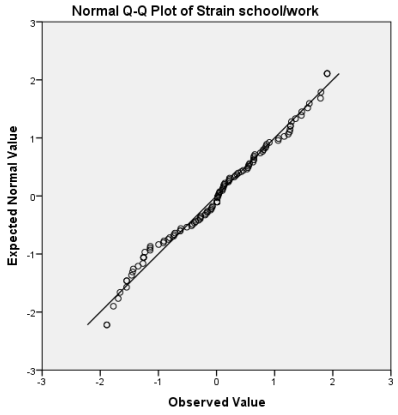
1
0
-1
-2
-3
224
151
290
PCS

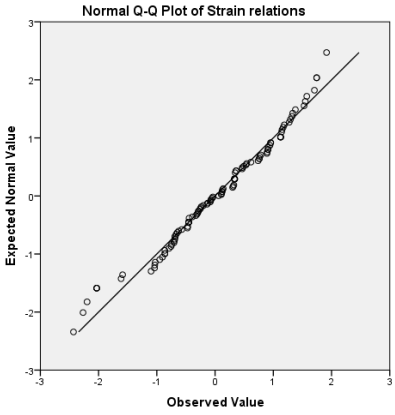
Appendix H. Normal probability plots

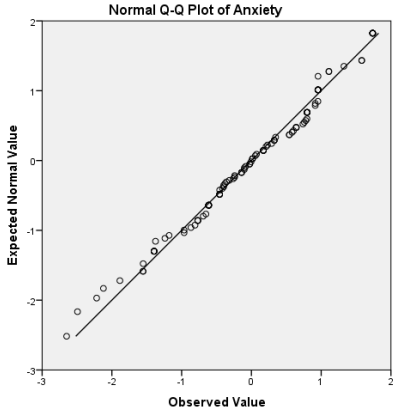
Satisfaction model

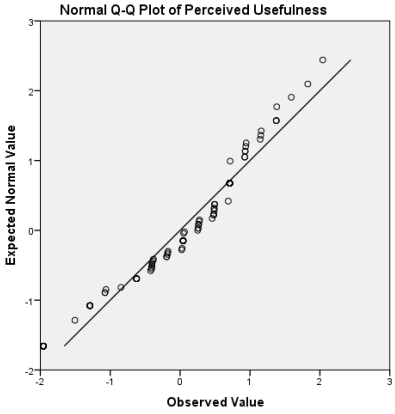


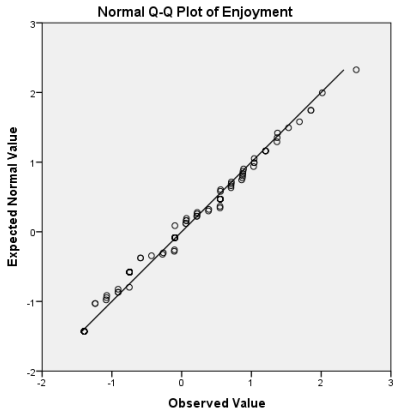


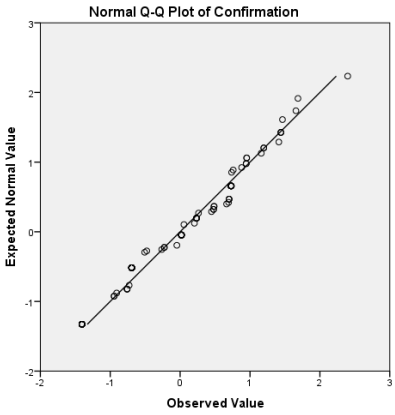


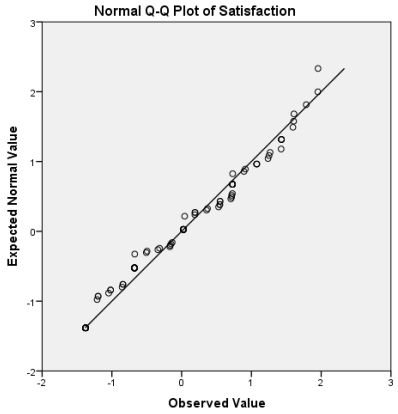




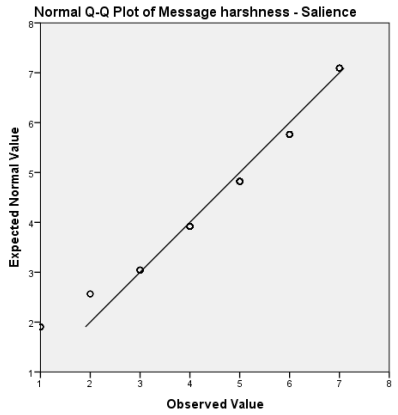


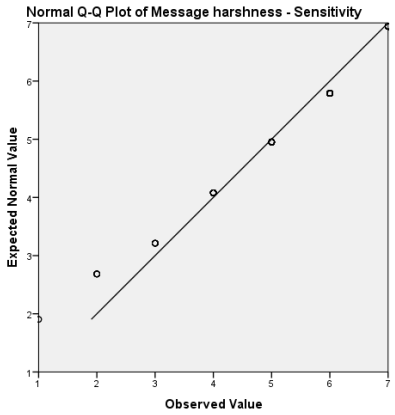

Normal Q-Q Plot of Enjoyment
Expected Normal Value
Observed Value

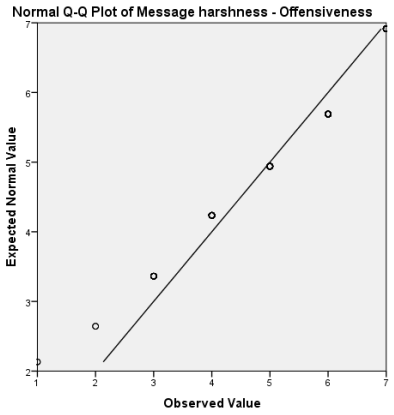

Normal Q-Q Plot of Confirmation
Expected Normal Value
Observed Value

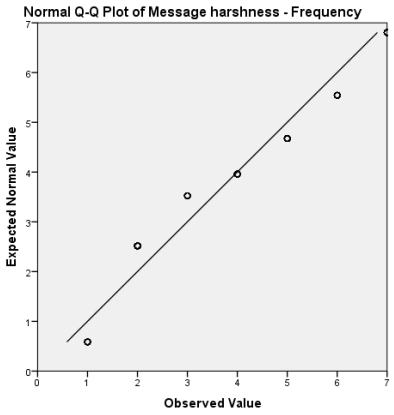

Normal Q-Q Plot of Satisfaction
Expected Normal Value
Observed Value

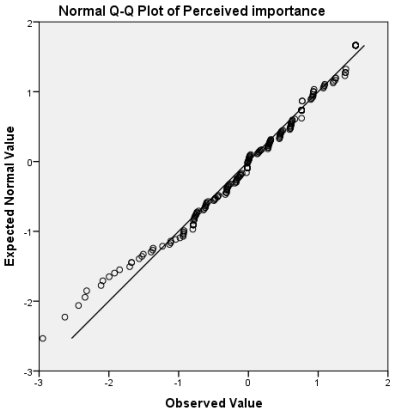
PCS model

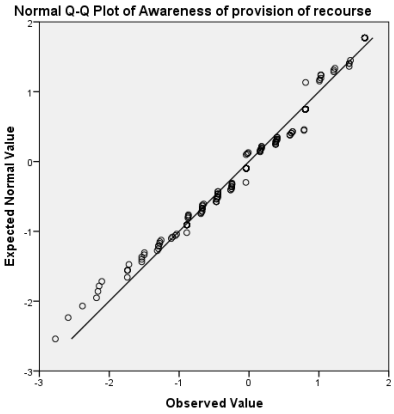

Normal Q-Q Plot of Message harshness - Salience
Expected Normal Value
Observed Value

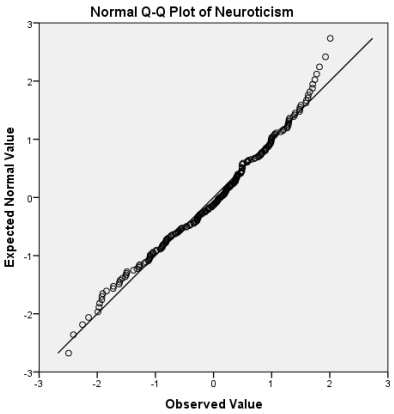

Normal Q-Q Plot of Message harshness - Sensitivity
Expected Normal Value
Observed Value

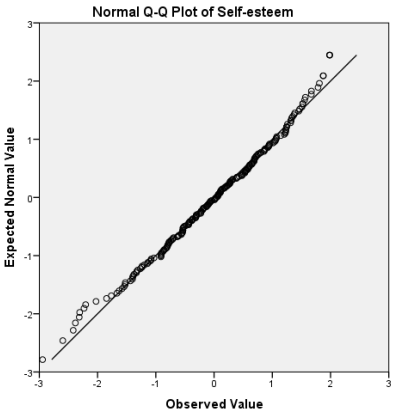

Normal Q-Q Plot of Message harshness - Offensiveness
Expected Normal Value
Observed Value

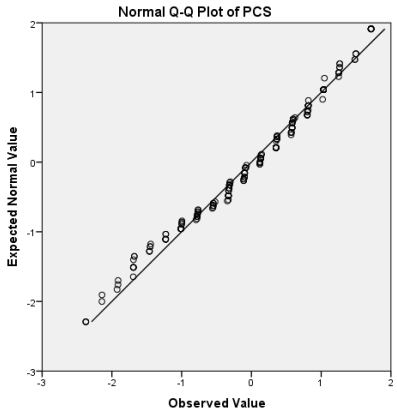

Normal Q-Q Plot of Message harshness - Frequency
Expected Normal Value
Observed Value


Normal Q-Q Plot of Perceived importance
Expected Normal Value
Observed Value


Normal Q-Q Plot of Awareness of provision of recourse
Expected Normal Value
Observed Value

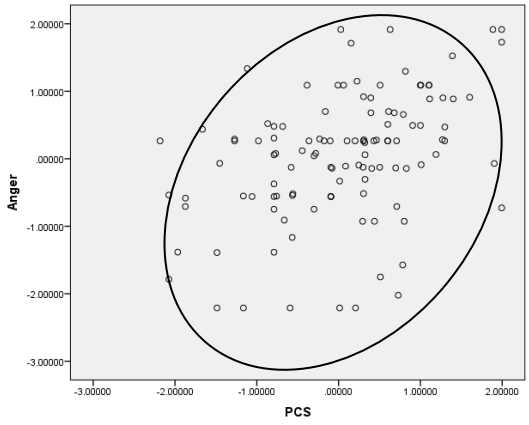

Normal Q-Q Plot of Neuroticism
Expected Normal Value
Observed Value

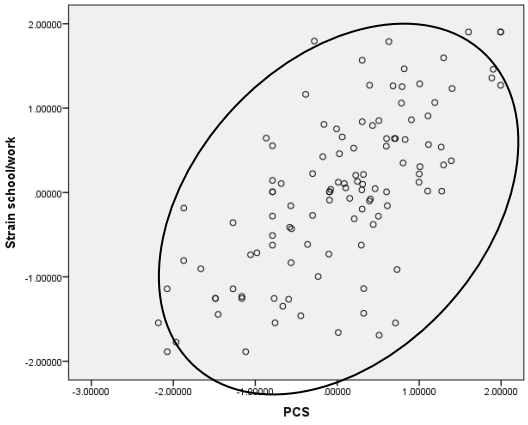

Normal Q-Q Plot of Self-esteem
Expected Normal Value
Observed Value

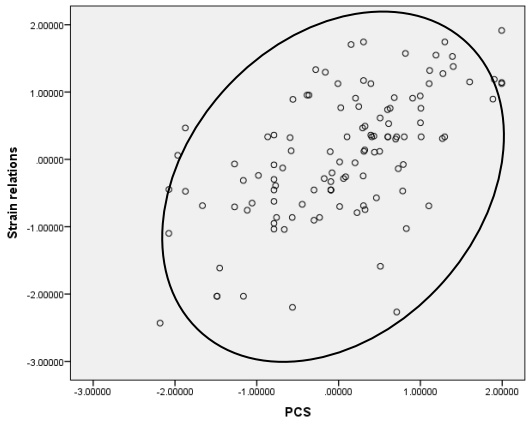

Normal Q-Q Plot of PCS
Expected Normal Value
Observed Value
2
1
0
-1
-2
-3
-3
-2
-1
0
1
2

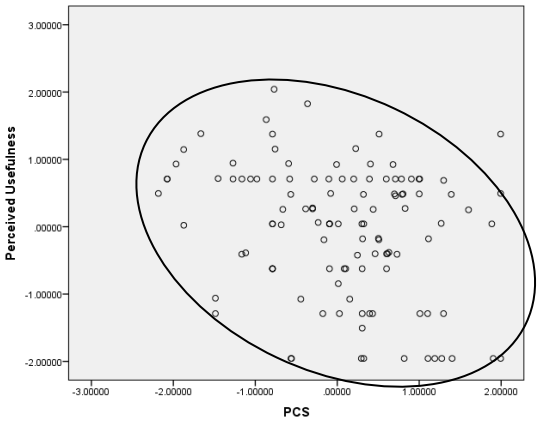
Appendix I – Bivariate scatter plots

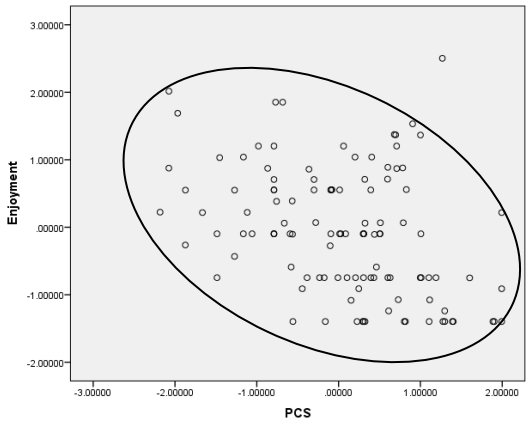
Satisfaction model

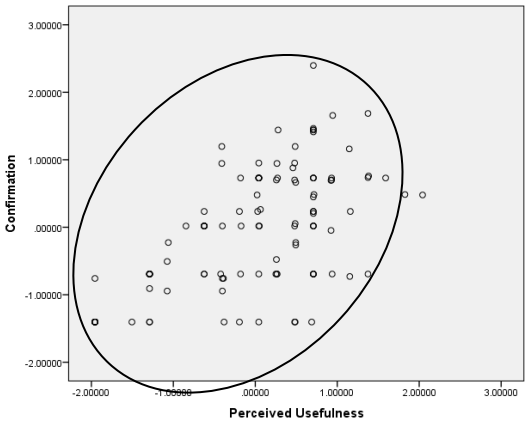


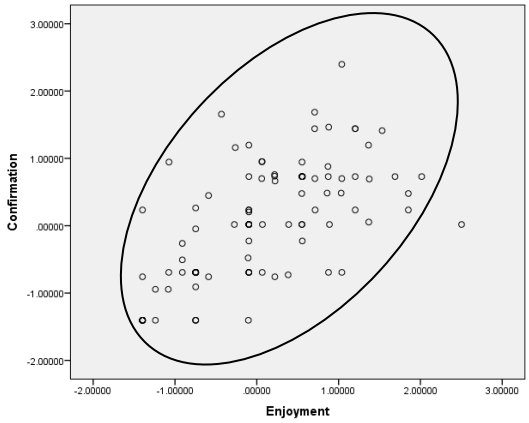


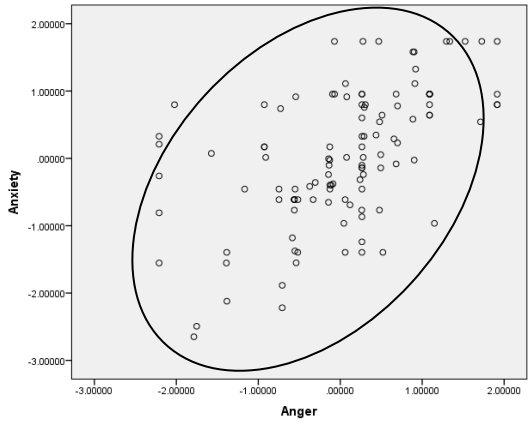


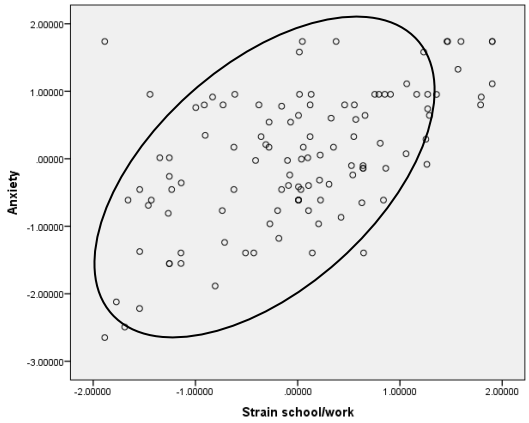


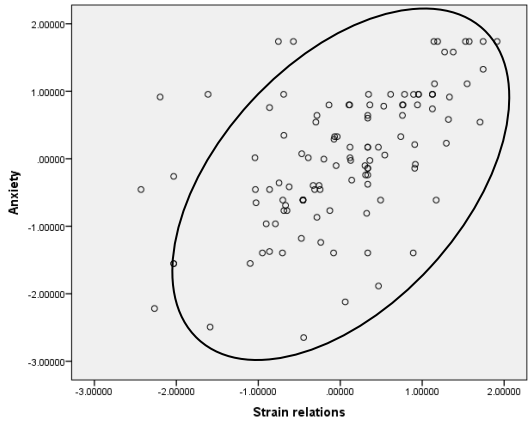


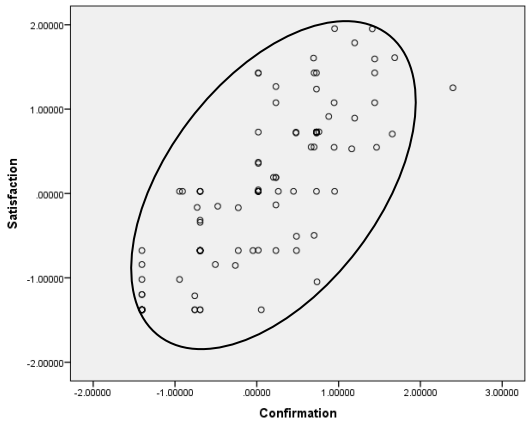


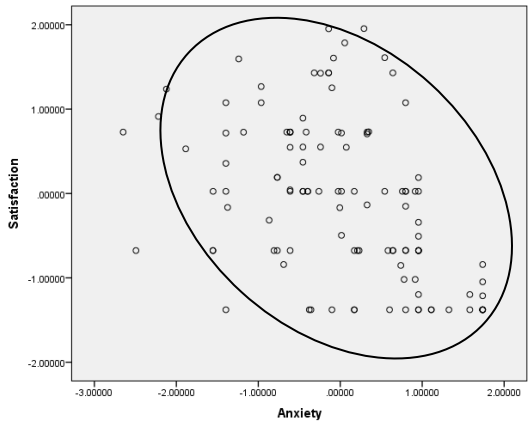

Confirmation
Enjoyment


Anxiety
Anger

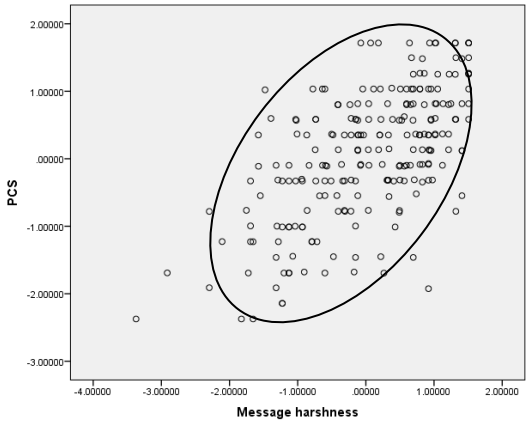

Anxiety
Strain school/work

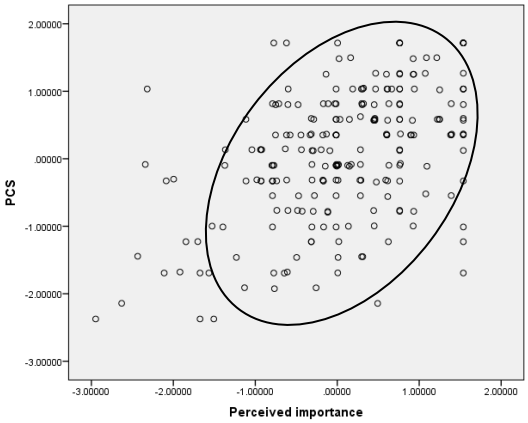

Anxiety
Strain relations

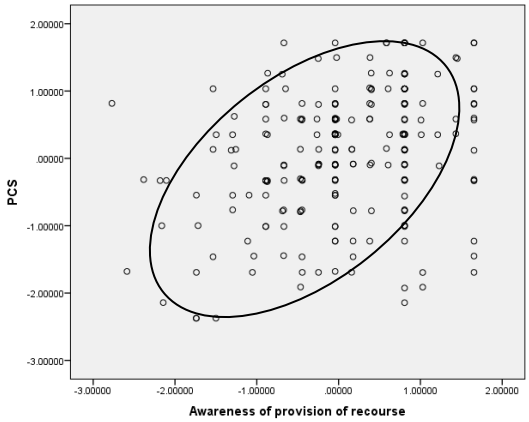

Satisfaction
Confirmation

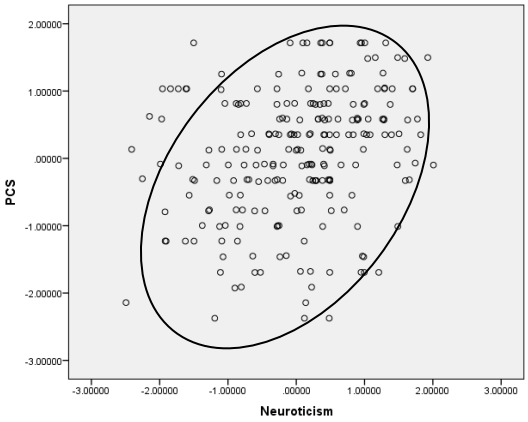

Satisfaction
Anxiety

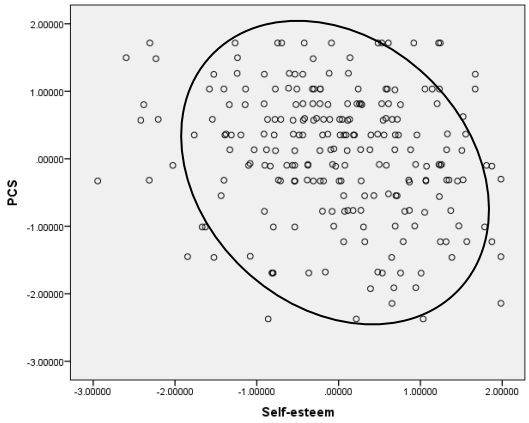
PCS model


PCS
Message harshness


PCS
Perceived importance

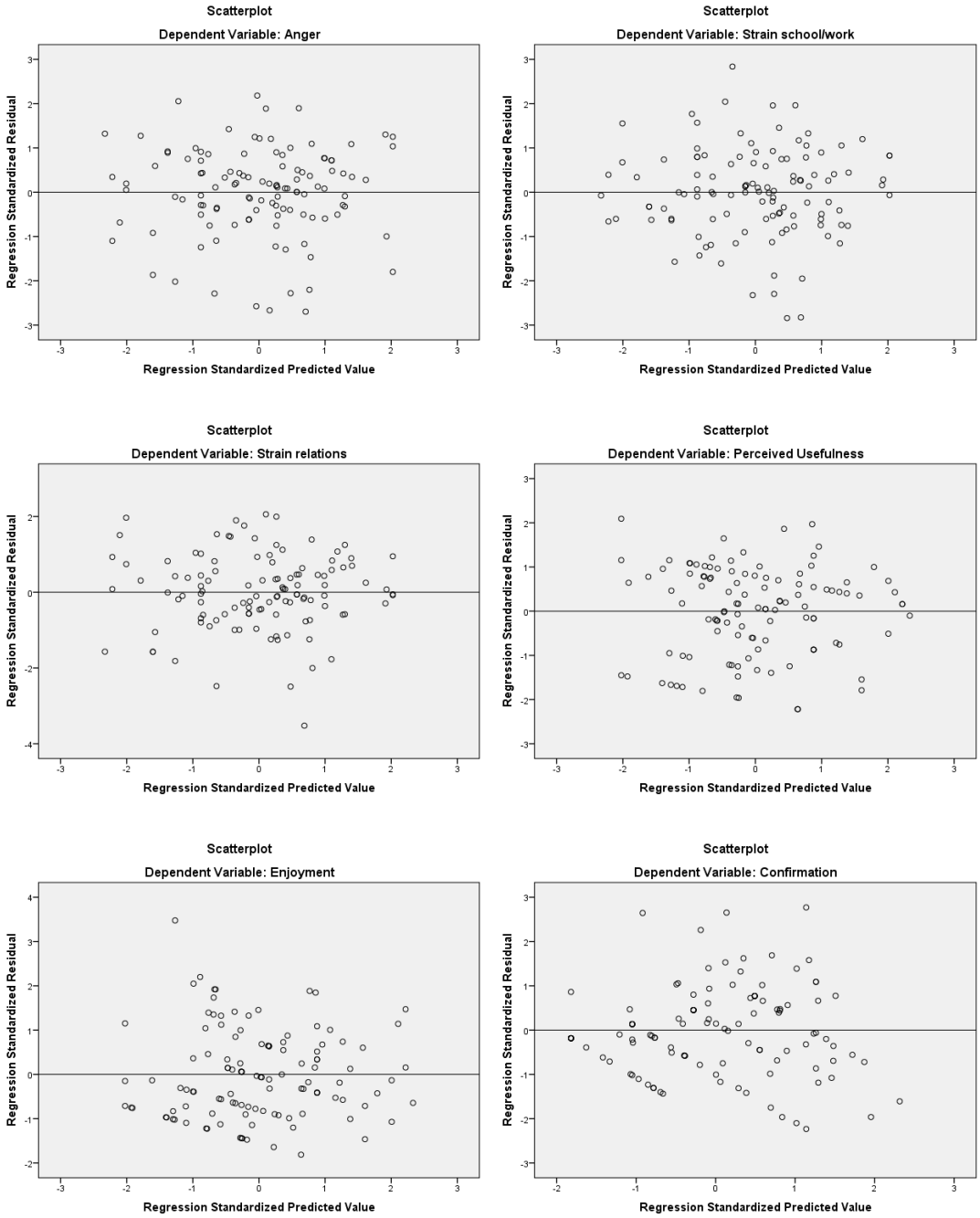

PCS
Awareness of provision of recourse

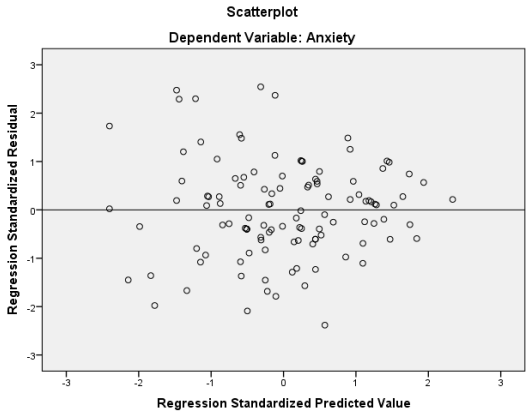

PCS
Neuroticism

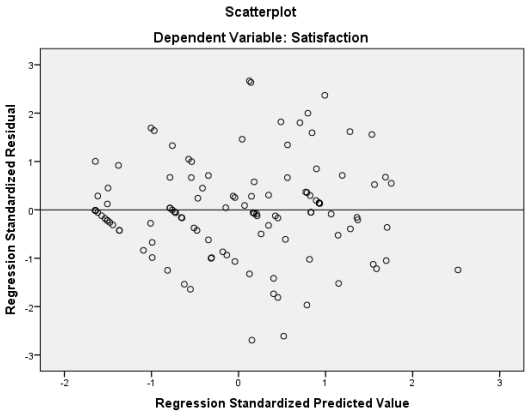

PCS
Self-esteem

Appendix J – Residual plots – Homoscedasticity analysis

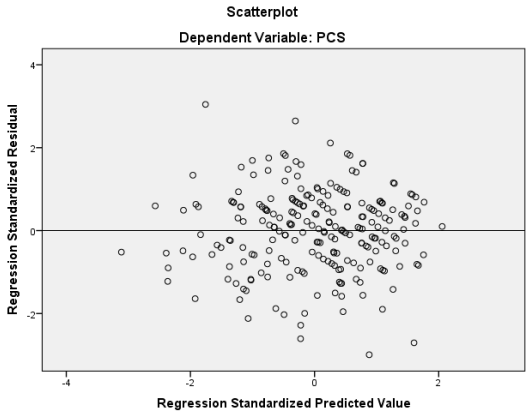
Satisfaction model




Scatterplot
Dependent Variable: Anxiety
Regression Standardized Residual
Regression Standardized Predicted Value


Scatterplot
Dependent Variable: Satisfaction
Regression Standardized Residual
Regression Standardized Predicted Value

PCS model


Scatterplot
Dependent Variable: PCS
Regression Standardized Residual
Regression Standardized Predicted Value