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AN INTEGRATED MODEL TO REDUCE ONLINE RISKS FOR CHILDREN

MISHA TEIMOURI

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AN INTEGRATED MODEL TO REDUCE ONLINE RISKS FOR CHILDREN

By

MISHA TEIMOURI

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirement for the Degree of Doctor of Philosophy

July 2015
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DEDICATION

In the name of God who enables me to learn, I dedicate this thesis to my parents, whom I live for, and to my dear sisters, Mitra and Mahshad, who have supported me through the hardest of times.

(In loving memory of my late professor, Dr. Mojtaba Jabalameli, who passed away in 2004, and who has inspired me in both my education and my professional career).
Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

AN INTEGRATED MODEL TO REDUCE ONLINE RISKS FOR CHILDREN

By

MISHA TEIMOURI

July 2015

Chair: Professor Md. Salleh bin Hj. Hassan, PhD
Faculty: Modern Languages and Communication

As Malaysian children continue to spend a lot of time online, they are exposed to unknown undesirable experiences. Testing an integrated model of online protection behaviour using three theoretical approaches, namely the parental mediation model (Livingstone, Haddon & Görzig, 2012); protection motivation theory (Rogers, 1975); and the health belief model (Janz & Becker, 1984; Glanz & Rimer, 2005), this study aims to suggest a way to reduce online risks for children. Online risk to children is measured using a 39-item scale adapted from two national studies in Europe (EU Kids Online; 2006–9) and the US [(Youth Internet Safety Survey-1 (YISS-1), 2000; YISS-2, 2005; YISS-3, 2010)]. A quantitative survey was conducted among 420 school children and one of their respective parents/guardians; structural equation modeling-partial least squares (SEM-PLS) was applied using SmartPLS (Version 3.2.1) to test the proposed model. The results of this study suggest that children with higher perception of the severity of risks, higher self-efficacy, and who are mediated to a higher degree by their parents, are less exposed to the risks they are encounter online, and that children with higher digital literacy are also more exposed to those risks. Direct-indirect mediation analyses reveal that those children with a higher perception of the severity of online risks are less at risk if they have higher digital literacy and practice more privacy protection.

This study found that the risks categorized in European countries and the US are less common in Malaysia. As predicted, parental mediation strategies were a significant factor in reducing online risks for children as well as children’s Internet self-efficacy. Parents are therefore advised to become more engaged with their children’s Internet use since this study found that the parental mediation reduces the online risk for children. Children need to be advised to improve their Internet self-efficacy and how best to cope with risky situations online. They must be conscious of the possible risks to them and learn how to be
safe while using Internet. Hence, as this study suggested if a child’s online protection behaviour occurs in conjunction with parental mediation, children in the Malaysian context would encounter fewer online risks.

The results offer a model of Internet risk protection that could not only be practiced by Malaysian families, but also be applied by society, policymakers, and practitioners. There are a number of limitations to this study, such as a lack of definition of online risks and topic sensitivity, both in the Malaysian context. Overall, the modified model proposed in this study was confirmed. However, further investigation is required in order to classify online risks to children and offer more solutions to reducing the online risks faced by Malaysian children.
Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

SATU MODEL BERSEPADU BAGI MENGURANGKAN RISIKO ATAS TALIAN TERHADAP KANAK-KANAK

Oleh

MISHA TEIMOURI

Julai 2015

Pengerusi: Professor Md. Salleh bin Hj. Hassan, PhD
Fakulti: Bahasa Moden dan Komunikasi


Hasil kajian ini juga mendapati risiko atas talian yang dikategorikan di negara-negara Eropah dan Amerika Syarikat kurang berlaku di Malaysia. Seperti ramalan, strategi-strategi mediasi ibu bapa merupakan faktor penting bagi mengurangkan risiko atas talian untuk kanak-kanak serta meningkatkan keberkesanan jatidiri terhadap Internet oleh kanak-kanak. Oleh itu, ibu bapa
dinaisihatkan untuk lebih melibatkan diri dalam penggunaan Internet anak-anak mereka. Kanak-kanak perlu kan nasihat ibubapa untuk meningkatkan keberkesanan jatidiri mereka terhadap Internet dan bagaimana menangani risiko atas talian. Mereka harus sedar akan risiko yang bakal dihadapi dan belajar cara menggunakan Internet secara selamat. Oleh itu, dalam konteks Malaysia, kajian ini mencadangkan jika perlindungan atas talian terhadap kanak-kanak dilaksanakan melalui kewujudan mediasi ibu bapa, kanak-kanak akan kurang menghadapi risiko atas talian.

Hasil kajian ini menyediakan satu model perlindungan risiko Internet yang tidak hanya boleh diamalkan oleh keluarga di Malaysia, tetapi juga di gunakan oleh masyarakat, pembuat dasar dan pengamal media baru ini. Terdapat beberapa limitasi dalam kajian ini dari konteks Malaysia, seperti kekurangan definisi risiko atas talian dan mengenai perkara-perkara sensitif tentang risiko atas talian. Secara keseluruhan, kajian ini telah mengesahkan model yang dicadangkan. Walau bagaimanapun, kajian lanjut perlu dilakukan untuk mengklasifikasikan risiko atas talian untuk kanak-kanak dan menawarkan lebih banyak penyelesaian untuk mengurangkan risiko atas talian yang dihadapi oleh kanak-kanak Malaysia.
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I would like extend my sincere appreciation and gratitude to my dear supervisor, Prof. Salleh Hassan, who has always been positive, supportive, encouraging, and humble. To work with him has been an unforgettable experience, with heaps of fun and excitement. I admire him: for his support with care and promptness; for his patient and encouragement in times of difficulties; for listening my ideas and discussions; for his assistance and guidance; for his kindness and generosity. He made us feel a friend, which I appreciate from my heart.

I would also like to express gratitude to Dr. Jusang Bolong and Dr. Nor Azura Adzharuddin for all of their assistance, guidance, and kindness. My sincere thanks also go to Professor Ezhar Tamam for his invaluable advice. May Allah bless them all.

Special thanks goes to my Malaysian best friend, Azlina Daud; I cannot thank her enough for being always there during the stressful moments. It has been an extraordinary journey to work with her as a friend. I would also like to extend my deepest gratitude to my dear friends Somayeh Naeimi, Serina Yussof, and Elahe Taheri; it has been my privilege to work closely with them as a team and I am very proud of what we have achieved together. I would never forget all beautiful, fun and excitement moments I shared with them. I am indebted to my friend Reza Jafari Aryan for making the time working on my Ph.D. a memorable experience.

My sincere thanks also go to Jinny Hayman, a specialist in editing academic work from U.K for her great job in proofreading my dissertation.

This research is part of the study has been awarded with RM 100,000 (Malaysian Ringgit) by Universiti Putra Malaysia under the university research grant (RUGS). A total of 1200 school students aged 9-16, and 400 parents in two districts in Selangor, Malaysia served as the respondents in this study. The aim of this project was to enhance knowledge regarding Malaysian children’s internet use and risks, their parents’ mediating role and digital literacy to guide them to a safer online environment, the impact of the internet safety program to protect adolescence online, together with adolescence Facebook users and self-being. The project started in September 2012 and will end in March 2015. My sincere thanks go to student, parents, teachers, and school management for participating in this survey.
I certify that a Thesis Examination Committee has met on (July 15, 2015) to conduct the final examination of Misha Teimouri on her thesis entitled “An Integrated Model to Reduce Online Risks for Children” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

Members of the Thesis Examination Committee were as follows:

**Zulhamri Abdullah, PhD**  
Associate Professor  
Faculty of Modern Languages and Communication  
Universiti Putra Malaysia  
(Chairman)

**Mohd Nizam Osman, PhD**  
Faculty of Modern Languages and Communication  
Universiti Putra Malaysia  
(Internal Examiner)

**Ezhar Tamam, PhD**  
Professor  
Faculty of Modern Languages and Communication  
Universiti Putra Malaysia  
(Internal Examiner)

**Ang Peng Hwa, PhD**  
Professor  
College of Humanities, Arts, & Social Sciences  
Nanyang Technological University, Singapore  
(External Examiner)

---

**ZULKARNAIN ZAINAL, PhD**  
Professor and Deputy Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date:
This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

Md Salleh bin Hj Hassan, PhD  
Professor  
Faculty of Modern Languages and Communication  
Universiti Putra Malaysia  
(Chairman)

Jusang bin Bolong, PhD  
Associate Professor  
Faculty of Modern Languages and Communication  
Universiti Putra Malaysia  
(Member)

Nor Azura binti Adzharuddin, PhD  
Senior Lecturer  
Faculty of Modern Languages and Communication  
Universiti Putra Malaysia  
(Member)

BUJANG BIN KIM HUAT, PhD  
Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia  

Date:
DECLARATION BY GRADUATE STUDENT

I hereby confirm that:
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Signature: Date: July 2015

Misha Teimouri GS31727
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<td>AVE</td>
<td>Average Variance Extracted</td>
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<td>CR</td>
<td>Construct (composite) reliability</td>
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<td>HBM</td>
<td>Health Belief Model</td>
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<td>MCMC</td>
<td>Malaysian Communication and Multimedia Commission</td>
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<td>PLS</td>
<td>Partial Least Squares</td>
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<td>PMM</td>
<td>Parental Mediation Model</td>
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<td>PMT</td>
<td>Protection Motivation Theory</td>
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<td>R²</td>
<td>Coefficient of Determination</td>
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<td>SEM</td>
<td>Structural Equation Modeling</td>
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<td>VAF</td>
<td>Variance Accounted For</td>
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INTRODUCTION

Until relatively recently, television and film was the only audio-visual medium to which most children were exposed (Clark, 2011). The risks associated with children’s television viewing were primarily limited to their being exposed to sexual and violent materials, the nature of which were known and easy to control. Today, children are surrounded by a variety of digital media, which exposes them to enormous risks that have not yet been fully identified or quantified. Within the academic literature, although studies defining the risks of online activity for children have risen substantively, it is difficult to get a clear picture of online risk and harm (Slavtcheva-Petkova, Nash, & Bulger, 2015).

From media studies, much research proposes the necessity of parental assistance in guiding their children’s media usage in the prevention of the negative experiences (Clark, 2011; Nikken & Jansz, 2011). In prior studies, television was the preferred topic of discussion and investigation. Newer studies still consider traditional parental mediation styles to be applicable for Internet use. However, given that children tend to use the Internet alone (Buckingham & Willett, 2013), parental mediation has been more challenging, since parents are unable to constantly monitor, control, and supervise children’s online activities. In addition to parental involvement, it is necessary for children to be aware of the risks they may be exposed to while they are using the Internet, and how to protect themselves when they are faced with those risks.

Although there is not a “golden key” to keeping children safe online, especially given that the online landscape is rapidly evolving, it is possible to diminish unpleasant consequences with educational strategies, parental involvement, and teaching of self-protection techniques. While no theory yet specifies the determinants of online safety, the researcher has borrowed constructs from theories that focus comprehensively on health behaviour in order to generate a model promoting safe online behaviour.

1.1 Problem Statement

Nowadays, the Internet is gradually becoming an essential part of young users’ lives in Malaysia. While there are various benefits of using the Internet, there is also an increasing number of negative aspects to it, such as exposure to pornography, inappropriate and undesirable conduct and content (Liau, Khoo & Ang, 2008). Despite the high possibility of online risks in Malaysia, there has been little research into the risks associated with Malaysian children’s online use (Soh Chin Hooi, 2010; Baboo, Pandian, Prasad, & Rao, 2013). A Malaysian
national survey shows that 83% of school children are exposed to different types of online risks; more specifically, 70% of children had been exposed to online harassment, and 64% had received/send inappropriate message/image online (DiGi CyberSAFE, 2014). Meanwhile, only one-thirds of them take a high level of online safety action, and most of them (70%) were not concerned with the invasion of their privacy. In the meantime, 70% of parents still believe that their children are safe when they are connected to the Internet (DiGi CyberSAFE, 2014).

Children’s Internet usage is shaped by a multitude of factors, including social mediation factors (actions of teachers, parents, sibling, and peers), in which parents play a vital role (Livingstone et al., 2012). However, in practice, it is difficult for parents to mediate their children’s online activities due the individualization of Internet usage (Lee, 2012). A report by the International Telecommunication Union (ITU, 2009) shows that there is an alarming gap between what parents think and children know; even though 92% of parents are confident to establish rules for their children’s online activity, only 66% of children think the same. While most parents consider the Internet as a beneficial sources for children to facilitate their learning and creativity (Livingstone & Bober, 2009), While 90% of children are exposed to negative experiences online, only 40% of parents are aware of what their children are doing or what they are accessing during the time they spend online (Ismail, 2011).

Parents’ involvement in monitoring their child’s Internet safety use is very important (Chhachhar, Qureshi, Maher, & Ahmed, 2014). Malaysian DIGI Cyber-Safe revealed that while 40% of parents have never taught their children how to practice safety, 27% of parents have talked to their children about online safe practice, (“Internet Safety for School Children,” 2013). Furthermore, only 30% of parents monitor their children’s Internet use (“1-in-3 Malaysian kids victims of cyber-bullying,” 2012).

Most Malaysian students are still unaware of the potentially negative use of this technology (Raman, 2011). While Lallmahamood (2008) believes that 92.4% of Malaysian adults are very concerned about privacy matters when using the Internet, younger users are not (Shafie et al., 2011). Children’s awareness of the severity of the potential risks associated with Internet use, as well as their belief that they are themselves able to perform risk-reducing behaviours, will help them to protect themselves from online risks (Youn, 2009). Empirical research on the effects of protection motivation constructs (e.g. self-efficacy, perceived severity, and susceptibility) and safety behaviour to reduce risks is inconclusive. While it was found that self-efficacy associated with protective behaviour by some researchers (Chai, Bagchi-Sen, Morrell, Rao, & Upadhyaya, 2009; Feng & Xie, 2014), others have found the opposite (Mohamed & Hawa, 2012).

Considering the problems outlined, along with increasing the time children spend online, they are more exposed to risks associated with the Internet. cyber-
related risks such as cyber-bullying, disclosure of private/personal information, visits to X-rated websites, and exposure to violent content have increased in Malaysia (Chan, 2012; Azizan, 2013). Meanwhile, little is known about how parents monitor children’s online activities to avert negative exposure. The lack of Malaysia-specific research about the online risks children’s are exposed to, as well as parental monitoring of children’s Internet usage, and children’s online protection/self-regulation, have been detailed as a problem of the scope of this current study.

1.2 Research Questions

Based on the aforementioned issues, this study aims to address the following research questions:

1. What is the level of online risk that children are exposed to?

2. Is ‘online risk’ effected by ‘parental mediation’; ‘perceived severity of (and susceptibility to) online risk’; ‘Internet self-efficacy’; ‘digital literacy’; and ‘online privacy concerns’?

3. Is the relationship between ‘perceived severity of (and susceptibility to) online risk’ and ‘online risk’ mediated by ‘digital literacy’ and ‘online privacy concerns’?

1.3 Research Objectives

The general objective of this study is to test an integrated model of online protection behaviour and parental mediation on the online risks associated with children’s Internet usage.

The specific objectives are:

1. To identify the level of online risk that children are exposed to.

2. To determine the effects of ‘parental mediation’, ‘perceived severity of (and susceptibility to) online risk’, ‘Internet self-efficacy’, ‘digital literacy’, and ‘online privacy concerns’ on ‘online risk’.

3. To determine the mediation effect of ‘digital literacy’ and ‘online privacy concerns’ on the relationship between ‘perceived severity of (and susceptibility to) online risk’ and ‘online risk’.
1.4 Significance of the Study

This study contributes to the literature that examines the issues associated with Internet usage among children. It also could help to increase children’s awareness of the possible threats of online activities, as well as to improve their online protection and safety skills. The study also contributes to parents to re-evaluate their mediation approaches and to comprehend the nature of new-media usage. In addition, this study will present updated data on the risk pattern of Internet usage among Malaysian children.

Furthermore, the results of the current study could also be employed in the creation of new strategies and policies around safer Internet usage among children. Since 2010, multiple events have aimed at educating Internet users about the online privacy and identity protection that have been running in Malaysia by bodies such as the Malaysian Communication and Multimedia Commission (MCMC); Cyber Security Malaysia; the Women Family and Community Development Ministry; and other stakeholders authorized to increase awareness of information security and online safety among families (e.g. Safer Internet Day (SID); Cyber Safe Programs; Cyber 999 Help Centre; “Be Aware, Secure and Vigilant; Cyber Security Awareness Week; DiGi Cyber-safe Program; Child Online Protection Seminar) (Cyber Security Malaysia, 2011).

Meanwhile, the Malaysian government is particularly concerned about the negative impacts of the Internet on children, and has already implemented actions such as censorship of Internet content, restricting and banning cybercafés, as well as using filters to block online pornography websites (Liau et al., 2008).

In terms of theoretical approaches, this study contributes to what extent the Parental Mediation Model (PMM) extends the sufficiently of the Protection Motivation Theory (PMT) and Health Belief Model (HBM) to predict reducing online risks to children. The theoretical contribution of this study is integrating PMM into PMT and HBM to promote online protection behaviour among children, since parental involvement has been found as one of the most influential factors effect children’s Internet usage (Clark, 2011). Health behaviour and health promotion theories have been applied to identify factors influence individual’s healthy behaviour adoption. These theories being proposed to explain the behavioural change for an individual (e.g. PMT and HBM) (Glanz & Rimer, 2005; Prentice-Dunn & Rogers, 1986; Rogers, 1975). The PMT is suggested to be one of the most representative and influential of risk learning theories, to identify how people choose to behave when faced with various threats (Lwin, Li, & Ang, 2012). Health belief model is also emphasizing the individuals’ perception about the threats or an action to prevent the threats (Janz & Becker, 1984; Ronis, 1992; Rosenstock, 1974). However, this study

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1http://www.saferinternetday.org/web/malaysia/home
contributes these theories needed to be integrated with parental mediation to be applicable in the case an online protection research, especially when the children are the subject of research.

This study uses instruments developed through a mix-method of quantitative and qualitative research design. However, the instruments have not been validated within Malaysian context using the quantitative method. Hence, in this study, quantitative survey used to confirm the validity of the instrument of this study.

Furthermore, previous study about online risks were used the classical measurement approaches to estimate the relationship among latent constructs. Unlike the classical measurement approaches, which measure a latent variable by effective (reflective) indicators, today’s researchers deal with the latent constructs which are involved causal (formative) indicators. The application of causal indicators as formative measures has become a solution for researchers who are struggling with the implications of reflective indicators. In this study, the researcher measured online risks latent variables by formative indicators since (i) the indicators are cause of constructs, (ii) indicators are characteristic explaining construct, and (iii) indicators are not interchangeable (Hair, Hult, Ringle, & Sarstedt, 2014). For example, for measuring “personal data misuse” indicator “have you ever been hacked” cannot be changed by indicator “have you ever lost money online”. Hence, this study contributes the application of Partial Least Squares to proceed the statistical analyses for this study.

This study therefore aims to identify the influence of children’s self-protection techniques against online risks, in an attempt to contribute to a deeper perspective of the nature of the risks associated with Internet usage among children in Malaysia.

1.5 Scope of the Study

The scope of this thesis is limited to primary and secondary school-age children between the ages of 9 and 16 in Malaysia, Selangor and their parents/guardians. The study was limited to the one state, namely Selangor, which has the highest number of Internet users in Malaysia (Household Use of the Internet Survey 2010, MCMC). This study focuses on the parental role and children’s self-protection when it comes to children’s exposure to online risks. The definition of online risks is limited to Western measurements, due to the lack of Malaysia-specific research about them. Topic sensitivity, time, and budget limitations, lack of national research, and sampling complexity were some of the limitations to this study, all of which will be discussed in more detail in the final chapter.
1.6 Construct Definition

In this study, online risk to children is defined as a set of wanted or unwanted inappropriate activities by children (as an actor, a receiver, or a participant), which includes (1) Unwanted exposure to pornography, such as requests to be exposed to unwanted sexual activities/sexual talk/divulging sexual information against their will; (2) Risky sexual online behaviour, in which children participate in sexual behaviour online; (3) Sexting, which refers to sending/receiving sexual images/videos/texts online; (4) Potentially harmful user-generated content, where children are exposed to online violent content such as self-harm, suicide, pro-anorexia, drugs, hate/racism (5) Personal data misuse, whereby children’s information is misused or they are a victim of Internet fraud or theft (6) Cyber bullying, which refers to children being the victim of aggressive behaviour in the cyberspace (Faryadi, 2011; Hasebrink, Görzig, Haddon, Kalmus, & Livingstone, 2011; Marwick, Diaz & Palfrey, 2010; Livingstone, Haddon, Görzig, & Olafsson, 2011a, 2011b; Wolak, Finkehor & Mitchell; 2008).

Parental mediation is defined as the strategy parents use to monitor, co-use, limit, and restrict their children’s online activities, which include: (1) Parental active mediation of Internet use, whereby when the parent is present, they remain nearby and discuss the child’s online activities with them; (2) Parental active mediation of Internet safety, which is when the parent explains about safety and suggest ways for the child to behave safely over the Internet in case of difficulty; (3) Parental technical mediation refers to the use of software by a parent to control or to filter a child’s Internet use; (4) Parental monitoring mediation, whereby a parent monitors the records of the child’s online activities afterwards; and (5) Parental restrictive mediation, which refers to a parent setting rules to control a child’s Internet use of certain applications, activities, or provision of personal information.

In this study, online protection behaviour (motivation) is referring to risk perception and protection action. Risk perception is defined by two concepts: (1) Perceived susceptibility to online risk: Refers to a child’s perception of the potentiality of harm or abuse and (2) Perceived severity of online risk: Refers to a child’s perception of how serious an online risk and its consequences are (Glanz, Rimer 2005). Protection action is defined by three concepts: (1) Online safety concern: Refers to when a child knows how to protect themselves from the potential risks posed by the Internet, and has the basic knowledge and skills to protect themselves during their online activities; (2) Internet self-efficacy: A child’s perception of how capable they are of understanding the risk caused by the Internet and their ability to take protective action against negative outcomes; and (3) Digital literacy: A child’s knowledge about and capability of using the Internet and dealing with possible risks.
In this study, the respondents are referred to as “children”, since this refers to anyone under the age of 18 (based on Convention on the Rights of the Child and Malaysia’s Child Act 2001). The terms “online” refers to when children are connected to the Internet from any digital devices.

1.7 Summary of Chapter One

This study was initially formed due to the researcher’s interest in the negative consequences brought about by children’s online activities. In the early stages, the researcher reviewed available research conducted in Malaysia regarding the risks that the Internet exposes children to. It was found that, along with increasing the time children spend online, they are more exposed to risks associated with the Internet has increased. As discussed earlier in this chapter, it is reported that cyber-related risks such as cyber-bullying, theft/fraud, disclosure of private/personal information, visits to X-rated websites, and exposure to violent content have increased in Malaysia (Chan, 2012; Azizan, 2013). Meanwhile, little is known about how parents monitor children’s online activities to avert negative exposure. The lack of Malaysia-specific research about the online risks children’s are exposed to, as well as parental monitoring of children’s Internet usage, and children’s online protection/self-regulation, have been detailed as a problem of the scope of this current study. To fill the knowledge gap regarding these issues, this study aims to test an integrated model of parental mediation and online protection behaviour in reducing online risks to children through a quantitative survey.

This study therefore uses a multi-national definition of online risks to children developed by the European Kids Online project and Youth Internet Safety Survey (US), the parental mediation model (PMM), the Protection Motivation Theory (PMT), and the Health Belief Model (HBM), developed by a group of US Public Health Service social psychologists, as the basis of an integrated model to reduce online risk to children. The model proposed for this study is based on constructs from PMT and HBM, namely perceived severity of (and susceptibility to) online risk, Internet self-efficacy, online privacy protection behaviour, and digital literacy, together with five constructs from PMM, namely parental mediation of Internet use/safety, parental technical monitoring/restrictive mediation.

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2 http://www.uniteagainstabuse.my/learn/facts#sthash.LizqHrb9.dpuf
REFERENCES


Harcourt, S., Jasperse, M., & Green, V. a. (2014). “We were sad and we were angry”: A systematic review of parents’ perspectives on bullying. *Child & Youth Care Forum, 43*(3), 373–391. doi:10.1007/s10566-014-9243-4


Ševčíková, A., Šerek, J., Barbovschi, M., & Daneback, K. (2014). The roles of individual characteristics and liberalism in intentional and unintentional exposure to online sexual material among european youth: A multilevel


Smahel, E. D., & Wright, M. F. (2014). The meaning of online problematic situations for children Results of qualitative cross-cultural investigation in nine European countries (pp. 1–171).


Electroencephalography (EEG). *Journal of the Association for Information Systems* Forthcoming.


