SELF-CONTROL AS A MEDIATOR IN THE RELATIONSHIP BETWEEN MOBILE TECHNOLOGY USAGE AND SOCIAL COMPETENCE

SYED AHMAD MUHAJIR ALHADDAD BIN SYED ESA

THESIS SUBMITTED IN FULFILLMENT FOR THE DEGREE OF MASTER OF PSYCHOLOGY

FACULTY OF PSYCHOLOGY AND EDUCATION
UNIVERSITI MALAYSIA SABAH
2019

UMS
UNIVERSITI MALAYSIA SABAH

UNIVERSITI MALAYSIA SABAH

BORANG PENGESAHAN STATUS TESIS

JUDUL: **SELF-CONTROL AS A MEDIATOR IN THE RELATIONSHIP BETWEEN MOBILE TECHNOLOGY USAGE AND SOCIAL COMPETENCE**

IJAZAH: **IJAZAH SARJANA (PSIKOLOGI)**

Saya **SYED AHMAD MUHAJIR ALHADDAD BIN SYED ESA**, Sesi **2016-2019**, mengaku membenarkan tesis Sarjana ini disimpan di Perpustakaan Universiti Malaysia Sabah dengan syarat-syarat kegunaan seperti berikut:-

1. Tesis ini adalah hak milik Universiti Malaysia Sabah
2. Perpustakaan Universiti Malaysia Sabah dibenarkan membuat salinan untuk tujuan pengajian sahaja.
3. Perpustakaan dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.
4. Sila tandakan (/):

☐	SULIT	(Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA 1972)
☐	TERHAD	(Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi/badan di mana penyelidikan dijalankan)
☑	TIDAK TERHAD	

Disahkan Oleh,

NORAZLYNNE MOHD. JOHAN @ JACYLYNE
PUSTAKAWAN
UNIVERSITI MALAYSIA SABAH
(Tandatangan Pustakawan)

_____
SYED AHMAD MUHAJIR ALHADDAD BIN SYED ESA
MP1521022T

_____
(Dr. Nurul Hudani Md. Nawi)
Penyelia Utama

Tarikh : 23 September 2019

_____
(Cik Agnis Sombuling)
Penyelia Bersama

DECLARATION

I hereby declare that, this is my own work with the statements and reports presented in this thesis are all credited to their original owners with sources included.

20 January 2019

_____

Syed Ahmad Muhajir Alhaddad Syed Esa
MP1521022T

CERTIFICATION

NAME   : **SYED AHMAD MUHAJIR ALHADDAD SYED ESA**

NO. MATRIK   : **MP1521022T**

TITLE   : **SELF-CONTROL AS A MEDIATOR IN THE RELATIONSHIP BETWEEN MOBILE TECHNOLOGY USAGE AND SOCIAL COMPETENCE**

DEGREE   : **MASTER OF PSYCHOLOGY (PSYCHOLOGY)**

VIVA DATE   : **19 JULY 2019**

CERTIFIED BY

1. **MAIN SUPERVISOR**

    Dr. Nurul Hudani Md. Nawi

    Signature

2. **CO-SUPERVISOR**

    Ms. Agnis Sombuling

ACKNOWLEDGMENT

ABSTRACT

Social competence is important for the development of early adolescence. It has an impact on children's social behavior and their interaction with others. With the advent of mobile technology today, more and more children are using mobile technology devices to socialize with others. Therefore, this study attempts to investigate the influence of mobile technology usage on social competence among early adolescents. In addition, this study also attempts to study the potential of self-control as the mediating variable for the effect of mobile technology usage towards social competence among early adolescents. This is a quantitative study that make use of survey where data is collected via questionnaire. A total of 236 students from three schools in Gombak, Selangor were chosen as respondents in the study by using stratified random sampling with 300 targeted sample. A set of questionnaires is used in this study, comprise of Mobile Phone Problem Use Scale (MPPUS-10) to measure mobile technology usage, Social Competence Scale for Teenager (SCST) to measure social competence and Self-scoring Self-control Scale (SSSC) to measure self-control. The data obtained were analyzed in accordance with the hypotheses formed using three types of tests which are independent t test, correlation and SEM by using IBM Statistical Package for the Social Sciences (SPSS) version 24 and Analysis of a Moment Structures (AMOS) version 22. Results show that mobile technology usage significantly affect social competence negatively, while social competence and self-control are positively correlated. In addition, a full mediation is found as the effect of mobile technology usage on social competence diminished when self-control act as a mediator. Thus, it is evident from this study that mobile technology usage has an impact on social competence and self-control which is important for early adolescents.

Keywords: Mobile technology, Social Competence, Self-Control and Early
              Adolescents.

ABSTRAK

KAWALAN KENDIRI SEBAGAI PENENGAH DI DALAM HUBUNGAN ANTARA PENGGUNAAN TEKNOLOGI MUDAH ALIH DAN KECEKAPAN SOSIAL

Kecekapan sosial penting untuk perkembangan remaja awal. Ia mempunyai kesan kepada tingkah laku sosial dan interaksi mereka bersama orang lain. Dengan kedatangan teknologi mudah alih pada hari ini, semakin ramai anak-anak yang menggunakan peralatan teknologi mudah alih untuk bersosial dengan orang lain. Maka, kajian ini dijalankan bagi mengkaji pengaruh penggunaan teknologi mudah alih terhadap kecekapan sosial dalam kalangan remaja awal. Tambahan lagi, kajian ini turut mengkaji potensi kawalan kendiri sebagai pemboleh ubah penengah kepada kesan penggunaan teknologi mudah alih terhadap kecekapan sosial. Kajian ini merupakan kajian kuantitatif yang menggunakan kaedah tinjauan bagi mengumpulkan maklumat melalui borang soal selidik. Seramai 236 orang pelajar dari tiga buah sekolah di Gombak, Selangor telah terpilih untuk menjadi responden dalam kajian ini melalui kaedah pensampelan rawak berstrata dengan seramai 300 peserta sebagai lingkungan pensampelan. Satu set soal selidik digunakan dalam kajian terdiri daripada Mobile Phone Problem Use Scale (MPPUS-10) bagi mengukur kadar penggunaan teknologi mudah alih, Social Competence Scale for Teenager (SCST) bagi mengukur kecekapan sosial dan Self-scoring Self-control Scale (SSSC) bagi mengukur kawalan kendiri. Maklumat yang diperolehi kemudiannya dianalisis berdasarkan hipotesis yang dibentuk menggunakan tiga jenis ujian seperti ujian-t, ujian korelasi dan Structural Equation Modeling (SEM) melalui IBM Statistical Package for the Social Sciences (SPSS) versi 24 dan Analysis of a Moment Structures (AMOS) versi 22. Hasil kajian menunjukkan penggunaan teknologi mudah alih mempengaruhi kecekapan sosial secara negatif, manakala kecekapan sosial dan kawalan kendiri berhubung secara positif. Tambahan pula, mediasi secara penuh didapati kerana pengaruh penggunaan teknologi mudah alih terhadap kecekapan sosial lenyap apabila kawalan kendiri berfungsi sebagai penengah. Oleh itu, kajian ini membuktikan bahawa penggunaan teknologi mudah alih mempunyai kesan terhadap kecekapan sosial dan kawalan kendiri adalah penting bagi golongan awal remaja.

Kata Kunci: Teknologi Mudah Alih, Kecekapan Sosial, Kawalan Kendiri dan Awal Remaja.

LIST OF CONTENTS

UMS
UNIVERSITI MALAYSIA SABAH

UNIVERSITI MALAYSIA SABAH

LIST OF TABLES

UMS

UNIVERSITI MALAYSIA SABAH

LIST OF FIGURES

LIST OF ACRONYMS / SYMBOLS

SMS	- Short text message
MCMC	- Malaysian Communication and Multimedia Commission
NST	- News Straits Times
MPPUS	- Mobile Phone Problem Use Scale
SCST	- Social Competence Scale for Teenager
SCSC	- Self-Scoring Self-Control Scale
SEM	- Structural equation modelling
SMK	- Sekolah Menengah Kebangsaan
KPM	- Kementerian Pendidikan Malaysia
SPSS	- Statistical Package for Social Science
AMOS	- Analysis of a Moment Structures
CFA	- Confirmatory factor analysis
EFA	- Exploratory factor analysis
AVE	- Average variance extracted
RMSEA	- Root Mean Square Error of Approximation
GFI	- Goodness of Fix Index
TLI	-Tucker-Lewis Index
CFI	-Comparative Fir Index
A	- Cronbach Alpha
N	- Population Size
N	- Sample Size
Sig.	- Signifcance
%	- Percentage
*	- Significance at two-tailed 0.05
**	- Significance at one-tailed 0.01

LIST OF APPENDICES

UMS
UNIVERSITI MALAYSIA SABAH

CHAPTER 1

INTRODUCTION

1.1   Overview of Chapter

In this chapter, the researcher highlights the information related to the research areas on mobile technology usage in Malaysia for the past 10 years as well as determining the issues surrounding social competence among children. It briefly introduces the role of self-control in early adolescents and the possibility of its function in mediating the effect of mobile technology usage and social competence. This chapter will focus on deliberating the background information on social competence as the outcome of social behaviour at a global scale as well as in Malaysian context. Other than that, the justifications for early adolescents as the samples for this study are also revealed. This chapter is structured based on the statement of the problems which highlights the issues surrounding social competence research gap that warrants the present research to be carried out. Five research questions and five objectives have been designed to provide a focus of the present study. At the end of this chapter, the researcher provides the overview of the study conducted.

1.2   Background of the Study

With the vast development of technology today, children have involved directly in the change of behaviour to suit with the needs demanded by their environment and society. Ancient Greek philosopher, Aristotle once described humankind with the term 'social animal', a creature that seeks for the companionship of others as part of their wellbeing (Barker, 1946). This view is also shared by Al-Ghazali as cited in Khasinah (2013), designated human as *hayawan al-natiq* or talking animals due to how distinct humans are when it comes to socializing as compared to mere animals. The gift of

communication is bestowed upon men even at its primitive form through instinct as the child cries when separated from the mother or in hunger for food. This is one of the earliest forms of interaction between humans involving a child and his or her caretaker. As the child grows, so does his or her development of social skills. Instead of simply expressing emotions by crying to express sadness or smiling to express happiness, words were used to describe more developed social communication where feelings and opinions are expressed. To this day, most of these skills were acquired naturally by children as they came in contact with the people around them. Unlike feral children growing up around animals without human interactions, they lack the social skills required to facilitate proper social interactions with others of the same species which illustrate how significant the human connection with others through communications (Candland, 1995).

This signifies the importance of social skill as it reflects the individual's capacity to initiate or maintain social communication. Thus, beside emotional, cognitive and behavioural skills which are required for successful social adaption, social skill is also regarded as one of the important components in understanding social competence (Semrud-Clikeman, 2007). The recent technology advancement has modified the way humans interact with others. It has not only changed the way people communicate but also the way they socialize and learn (Goodman-Deane, Mieczakowski, Johnson, Goldhaber, & Clarkson, 2016). This is conspicuous among the generation today where social interaction plays a very vital role in engaging the human world.

As a result, daily interactions are becoming more complex since the adoption of mobile technological usage for communication has lessen the value for traditional face to face communication. People have embraced different ways of communicating with others such as through short text message (SMS), WhatsApp, e-mail or the virtual world that has come into existence by the magnitude of the influence of social network technology. This highlights the significance of social competence which is the basis for not only interacting effectively but also in determining many important favourable psychological outcomes (Satici, Saricali, Ahmet Satici, & Eraslan Capan, 2014).

2

Along with the advent of social communication technology development, a negative trend is slowly emerging in society, a trend that affects adults and children alike. More and more Malaysian adolescents have begun to develop and display what is known as disruptive social behaviours due to the problems related to social adaptation in the global era, where social interaction can take place almost everywhere (Daud, Coombes, Venkateswar, & Ross, 2012). On a different note, previous research relating to social competence in the Malaysian context has shown that it is widely studied by researchers who have focused on young entrepreneurs (Osman & Bakar, 2014), educators (Shanmugasundaram & Mohamad, 2011), parents (Uba, Hassan, Mofrad, Abdulla, & Yaacob, 2012), and college students (Iksan et al., 2012; Demir, Jaafar, Bilyk, & Mohd Ariff, 2012). Hence, it is apparent that social competence related research in Malaysia is centred mostly around adults. In global research, social competence is very much studied at all levels ranging from childhood to adulthood (Dodge, 2014; Larson, Whitton, Hauser, & Allen, 2007). This has called for the attention to further assess social competence in children, as this aspect warrants comprehensive investigation in Malaysia since the role social competence plays affects all groups, including children and adults (Denham & Burton, 2012).

Another interesting fact related to the studies of social competence in Malaysia is that the research conducted seems closely related to other constructs namely social capital (Osman & Bakar, 2014), emotional competencies (Shanmugasundaram & Mohamad, 2011) or physical competencies (Jiar & Xi, 2012). In the West, studies on social competence appear to extend towards variety of dimensions such as parenting (Leidy, Guerra, & Toro, 2010), mental health (Jones, Greenberg, & Crowley, 2015) and even children's academic achievement (Zorza, Marino, de Lemus, & Mesas, 2013). From this standpoint, it can be said that the context of studies involving social competence is positively oriented with little focus for its deficiency, especially in Malaysia. It is also important to note that research conducted by Ang, Mansor, and Tan (2013) about social competence in Malaysia manages to highlight some important cues indicating the lack of social competence among Malaysian graduates. This is one of the key findings which

demonstrates how the question of social competence in Malaysia is a subject worthy of research.

1.2.1 Mobile Technology Usage in Malaysia

In this 21st century, the advent of technological advancement has led to the development of communication without boundaries. Information can be retrieved, distributed, and shared with anyone at any time and space with just a matter of a click away. As reported by Malaysian Communication and Multimedia Commission (2014) in Hand Phone Users Survey, there were 43.2 million mobile phone subscriptions in Malaysia as compared to the year 2005 with only 16.2 million of mobile phone subscriptions. Thus, the survey has confirmed that over the past 10 years, the ownership of a handheld device like mobile phones alone has increased by more than 200%. Based on the data, it can be forecast that there will be a double increase in the ownership and greater usage of mobile technologies, specifically the use of mobile phones among Malaysians by the year 2017.

The spike in the growth of mobile phone users in Malaysia can be explained by looking at several factors such as socioeconomic status, availability, and accessibility of mobile phones. Over the years, many mobile phones were created and sold everywhere unlike 10 years ago where only limited users can afford to buy a mobile phone due to its expensive cost. However, it is not surprising today as more and more adolescents are getting access to affordable mobile technology; perks of being born in the electronic era. Due to this, Niu (2013) has likened mobile devices as extensions of adolescents' own bodies. In fact, according to a survey conducted by Lenhart, Duggan, Perrin, Stepler, and Parker (2015) from Pew Research Centre, it was found that 92% of the Malaysian teenagers go online daily while more than 50% from this group use their smartphones several times a day.

In Malaysia however, not much attention has been given by local researcher towards the usage of mobile technology among children. Although there are studies conducted pertaining to the usage of smartphones in Malaysia such as by Kee and Emmanuel (2016), Osman, Talib, Sanusi, Shiang-Yen, and Alwi (2012), and

Anumudu, Adzharuddin, and Yasin (2018), none of them seem to focus on the usage of smartphones by children. The subjects are mostly adults and college students at most. For the past five years, a wider ownership of mobile technology has taken place which accommodates not only for communication function but also other daily applications. Thus, mobile technology has paved the way for the emergence of a new social behaviour in which social competence is employed by children to create and maintain positive or negative social relationships via virtual means.

1.2.2 Social Competence: Behavioural Issues in Malaysia

Social competence deficiency has been recognized as a major contributor to behavioural problems (Gundersen, 2010; Kim, Guo, Koh, & Cain, 2010; Rabar & Martinac Dorcic, 2017). This is also evident from the literature available concerning behavioural problems in Malaysia, such as the study by Ling, Pheng, Sin, and Soon-Aun (2017) which focuses on personality traits, peer delinquency and aggression (Pung, Yaacob, Baharudin, & Osman, 2015). Hence, findings related to behavioural problems in Malaysia can be attributed to social competence deficiency and this can be used as the basis for understanding this social phenomenon as it applies to the Malaysian scenario. This is also supported by the fact that social competence deficiency occurs when the necessary social skills needed by an individual to fit within a particular society is not acquired and this can leads to a negative outcome such as behavioural problems in adolescents (Lee, Hankin, & Mermelstein, 2010).

One of the major contributors to the act of bullying among children and adolescents also relates to the lack of social competence (Irshad & Atta, 2013). The act of bullying can manifest in many forms such as physical assault or verbal insults. However, nowadays bullying has also extended to include cyberbullying as it detrimentally effects the victim's social and emotional wellbeing, which are well documented in the study by Hamm et al., (2015). In the Malaysian context, Balakrishnan (2015) reported that there is no significant difference in terms of age for those who are involved in cyberbullying activities. On the contrary, younger participants were found to engage more in cyberbullying activities. In addition,

according to Yayasan Generasi Gemilang (GG) as reported in Star Online, states that one in every four Malaysian children has experienced cyberbullying.

Another behavioural problem related to social competence deficiency also includes delinquent behaviour. This is evident by the very contribution of social competence as a resilient factor among adolescents which prevents them from getting involved in delinquent behaviour or getting along with deviant peers (Stepp, Pardini, Loeber, & Morris, 2011). In the Malaysian context, Abdullah, Ortega, Ahmad and Ghazali (2015) have found a disturbing rate of increasing delinquent behaviour in both urban and suburban areas among youth as young as 15 years old. Also, it was found that there was no significant difference in terms of gender for delinquent behaviour which indicates that both male and female show an equal probability of resorting to delinquent behaviour.

On a different note, social stress or peer stress has also been found to be related to social competence deficiency in early adolescence (Erath & Tu, 2014). It could occur when children are unable to adapt or adjust themselves to an unfamiliar environment, rendering them incapabile of making new friends or initiating social interaction. Similarly, Yaacob, Juhari, Talib and Uba, (2009) have also reported the experience of social stress among early adolescents in Malaysia. In addition, they have also found that early adolescents experience social stress which occurs in negative affective states making them vulnerable to psychological problems. Based on the issues elaborated, social competence deficiency is apparent in behavioural problems among children in Malaysia as reflected by the findings of previous researchers.

1.2.3 The Role of Self-Control

Self-control is one of the most studied variables by researchers worldwide. Due to its nature of consistency throughout the lives of individuals, many researchers have looked at the roles it plays in personality, mental development, and even health. Self-control is understood as the control of one's behaviour or ability to resist temptation. In Malaysia, the studies conducted on self-control were well received as

6

there were many research resources produced on the topic (Kamaluddin, Shariff, & Saat, 2013; Pung et al., 2015).

Furthermore, most of the research conducted in Malaysia as mentioned earlier did not focus sufficiently on Malaysian minors such as children, particularly early adolescents. One specific research related to the study of self-control among early adolescents conducted in Malaysia was by Pung et al., (2015) which focused on the link between self-control, peer delinquency, and aggression in adolescents in Malaysia. In this study, it was found that low self-control has an indirect effect on aggression through peer delinquency.

To analyse on the issue of self-control among adolescents, the researcher examined previous study conducted by Franken, Moffitt, Steglich, Dijkstra, Harakeh, and Vollebergh (2016). They found that self-control plays a significant role in moderating externalized behaviour among early adolescents born in the Netherlands. It was asserted that early adolescents with lower self-control were more vulnerable towards externalized behaviour such as alcohol consumption, antisocial behaviour, or smoking.

Another role of self-control among adolescents includes developing positive behaviours. Converse, Piccone and Tocci (2014) found that adolescents in the United States of America with high self-control are more likely to display positive behaviours which can contribute to academic achievement. Thus, adolescents with high self-control prone to spend their time wisely by studying and are less likely to be involved with negative behaviour such as dropping out of school.

Overall, the research conducted pertaining to the role of self-control is vast and still ongoing to this day. In this current research, the researcher has attempted to highlight the role of self-control in mediating the effects of mobile technology usage on social competence among early adolescents.

1.3　Problem Statement

Many past researches have been carried out to highlight the issue of heavy reliance and addiction of adolescents towards technology such as computers; yet electronic devices such as mobile phones, iPads, and Tabs have not received the same degree of attention. Rosen, Whaling, Carrier, Cheever, and Rokkum (2013) have added that more research should be done to assess mobile device usage because of its difficulty in the assessment since users utilise the applications of social media, electronic communication, and information, taking in the necessary information in a matter of seconds. This is further supported by Genc (2014) which calls for further studies to investigate the practicality of mobile technology usage by children. Previous studies have also explored mobile technology usage among students of higher learning (Al-Barashdi, Bouazza, & Jabur, 2015; Mahat, Ayub, & Luan, 2012). Thus, there is lack of information on mobile technology use among young adolescents which requires attention from researchers.

A careful profiling is necessary in understanding mobile technology usage among adolescents of which drives this present research to be carried out. In addition, there is also the issue pertaining to gender with regards to mobile technology usage. Previous research has shown inconsistent findings where differences between male and female have varied from each other in terms of frequency of use or utilization (Goswami & Dutta, 2015). This opens the opportunity for the present research to further explore the gap of research related to gender equity which is important to affirm and address the level of mobile technology use. The present research will provide empirical evidence not only from the standpoint for the level of mobile technology usage in general but also gender difference among Malaysian adolescents.

The evolution of technology has influenced the way people communicate and behave. Ploderer, Reitberger, Oinas-Kukkonen, and van Gemert-Pijnen (2014) have shown that mobile technology not only influences the way people communicate but also their social behaviours. The accessibility and usability of mobile technology has facilitated social communication which no longer requires face to face interactions and visual cues. It goes beyond physical proximity as demonstrated through the

REFERENCES

Abdullah, H., Ortega, A., Ahmad, N., & Ghazali, S. (2015). Aggressive and Delinquent Behavior among High Risk Youth in Malaysia. *Asian Social Science, 11* (16).

Ader, H. J. (2008). Phases and initial steps in data analysis. *Chapter, 14,* 333-356.

Agbaria, Q., & Atamna, A. (2014). Classroom environment and self-control skills and their relationship with adolescent's violence in the Arabic community of Israel. *American Journal of Applied Psychology, 2,* 42-52.

Ambrose, H. (2013). Young children's emotion regulation and social skills: the role of maternal emotional socialization and mother-child interactional synchrony.

Andone, I., Błaszkiewicz, K., Eibes, M., Trendafilov, B., Montag, C., & Markowetz, A. (2016, September). How age and gender affect smartphone usage. In *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct* (pp. 9-12). ACM.

Ang, C., Mansor, A., & Tan, J. (2013). Social competence in emerging adults. *Malaysian Journal of Youth Studies, 8,* 43-53.

Anish, K. R., Divya, G. S., & Skaria, S. M. (2014). Social competence model for adolescents: reflections from an intervention study. *Artha-Journal of Social Sciences, 13* (2), 1-19.

Al-Barashdi, H. S., Bouazza, A., & Jabur, N. H. (2015). Smartphone addiction among university undergraduates: a literature review. *Journal of Scientific Research & Reports, 4* (3), 210-225.

Allen, J. P., Porter, M. R., McFarland, F. C., Marsh, P., & McElhaney, K. B. (2005). The two faces of adolescents' success with peers: Adolescent popularity, social adaptation, and deviant behavior. *Child development, 76* (3), 747-760.

Anumudu, C. E., Adzharuddin, N. A., & Yasin, M. A. I. (2018). Smartphone Usage Motives and Academic Performances among Undergraduates in University Putra Malaysia.

Arain, M., Haque, M., Johal, L., Mathur, P., Nel, W., Rais, A., & Sharma, S. (2013). Maturation of the adolescent brain. *Neuropsychiatric disease and treatment, 9,* 449.

Arneklev, B. J., Grasmick, H. G., & Bursik, R. J. (1999). Evaluating the dimensionality and invariance of" low self-control." *Journal of Quantitative Criminology, 15* (3), 307-331.

Asher, S. R., Markell, R. A., & Hymel, S. (1981). Identifying children at risk in peer relations: A critique of the rate-of-interaction approach to assessment. *Child Development*, 1239-1245.

Asher, S. R., Parker, J. G., Walker, D. L., Bukowski, W. M., Newcomb, A. F., & Hartup, W. W. (1996). The company they keep: Friendship in childhood and adolescence. *WM Bukowski, AF Newcomb & WW Hartup (Eds.)*, 366-405.

Balakrishnan, V. (2015). Cyberbullying among young adults in Malaysia: The roles of gender, age and Internet frequency. *Computers in Human Behavior, 46*, 149-157.

Barker, E. (1946). Aristotle: Politics.

Barkley, R. A. (1997). *ADHD and the Nature of Self-Control.* New York: The Guilford Press.

Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego Depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology, 74* (5), 1252-1265.

Baumeister, R. F., & Mick, D. G. (2002). Yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *Journal of Consumer Research, 28* (4), 670-677.

Baron, N. S., & Campbell, E. M. (2012). Gender and mobile phones in cross-national context. *Language Sciences, 34* (1), 13-27.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51* (6), 1173.

Bandy, T., & Moore, K. A. (2010). Assessing self-regulation: A guide for out-of-school time program practitioners. *Washington, DC, Child Trends.*

Bedard, K., Bouffard, T., & Pansu, P. (2014). The risks for adolescents of negatively biased self-evaluations of social competence: The mediating role of social support. *Journal of Adolescence* 37 (2014) 787-798.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of cross-cultural psychology, 1* (3), 185-216.

Byrne, B. M. (2010) Structural equation modeling with AMOS: Basic concepts, applications and programming.

Bianchi, A., & Phillips, J. G. (2005). Psychological predictors of problem mobile phone use. *CyberPsychology & Behavior, 8* (1), 39-51.

Blackwell, B. S., & Piquero, A. R. (2005). On the relationships between gender, power control, self-control, and crime. *Journal of Criminal Justice, 33* (1), 1-17.

Blumberg, S. J., Carle, A. C., O'connor, K. S., Moore, K. A., & Lippman, L. H. (2008). Social competence: development of an indicator for children and adolescents. *Child Indicators Research, 1* (2), 176.

Brown, B., & Chalmers, M. (2003). Tourism and mobile technology. In *ECSCW 2003* (pp. 335-354). Springer, Dordrecht.

Boling, M. W., Barry, C. M., Kotchick, B. A., & Lowry, J. (2011). Relations among early adolescents' parent-adolescent attachment, perceived social competence, and friendship quality. *Psychological Reports, 109* (3), 819-841.

Burton Jr, V. S., Cullen, F. T., Evans, T. D., Alarid, L. F., & Dunaway, R. G. (1998). Gender, self-control, and crime. Journal of Research in Crime and Delinquency, 35 (2), 123-147.

Byrne, B. M. (2013). *Structural equation modeling with Mplus: Basic concepts, applications, and programming.* Routledge.

Cairns, R. B., & Cairns, B. D. (1994). *Lifelines and risks: Pathways of youth in our time.* Cambridge University Press.

Casey, B. J., & Caudle, K. (2013). The teenage brain: Self-control. *Current directions in psychological science, 22* (2), 82-87.

Casey, B. J., Jones, R. M., Levita, L., Libby, V., Pattwell, S. S., Ruberry, E. J., ... & Somerville, L. H. (2010). The storm and stress of adolescence: insights from human imaging and mouse genetics. *Developmental Psychobiology: The Journal of the International Society for Developmental Psychobiology, 52* (3), 225-235.

Caplan SE. Preference for online social interaction: a theory of problematic Internet use and psychosocial well-being. Communication Research 2003; 30:625–648

Cavanaugh, J. M., Giapponi, C. C., & Golden, T. D. (2016). Digital technology and student cognitive development: The neuroscience of the university classroom. *Journal of Management Education, 40* (4), 374-397.

Converse, P. D., Piccone, K. A., & Tocci, M. C. (2014). Childhood self-control, adolescent behavior, and career success. *Personality and Individual Differences, 59,* 65-70.

Carey, J. W. (1993). Linking qualitative and quantitative methods: Integrating cultural factors into public health. *Qualitative Health Research* 3: 298–318.

115

Candland, D. K. (1995). *Feral children and clever animals: Reflections on human nature*. Oxford University Press.

Chang, C. C., Tseng, J. S., & Yan, C. F. (2012). Perceived convenience in an extended technology acceptance model: Mobile technology and English learning for college students. *Australasian Journal of Educational Technology, 28* (5), 809-826.

Child Trends, B. (n.d.). *Social Competence Scale for Teenagers*. Retrieved from http://performwell.org/index.php/find-surveyassessments/outcomes/social-development/social-competencesocial-skills/social-competence-scale-for-teenagers

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological bulletin, 56* (2), 81.

Cavell, T. A. (1990). Social adjustment, social performance, and social skills: A tri-component model of social competence. *Journal of clinical child psychology, 19* (2), 111-122.

Cillessen, A. H. N., & Bellmore, A. D. (2014). Social Skills and Social Competence in Interactions with Peers. In P. K. Smith & C. H. Hart (Eds.), *The Wiley Blackwell Handbook of Childhood Social Development* (2nd. ed.). Blackwell Publishing Ltd.

Civelek, M. E. (2018). Essentials of structural equation modeling.

Cho, M. (2014). The relationships among smart phone use motivations, addiction, and self-control in nursing students. *Journal of Digital Convergence, 12* (5), 311-323.

Cho, H. Y., Kim, D. J., & Park, J. W. (2017). Stress and adult smartphone addiction: Mediation by self-control, neuroticism, and extraversion. *Stress and Health, 33* (5), 624-630.

Chow, S. (2016). How chat apps are being used by sex predators. Retrieved from https://www.rage.com.my/dangerous-connections/

Chen, B., Liu, F., Ding, S., Ying, X., Wang, L., & Wen, Y. (2017). Gender differences in factors associated with smartphone addiction: a cross-sectional study among medical college students. *BMC psychiatry, 17* (1), 341.

Collins, W. A., & Van Dulmen, M. (2006). The significance of middle childhood peer competence for work and relationships in early adulthood. *Developmental contexts in middle childhood: Bridges to adolescence and adulthood,* 23-40.

Crandall, C. S., Preacher, K. J., Bovaird, J. A., Card, N. A., & Little, T. D. (2012). Structural equation modeling of mediation and moderation with contextual

factors. In *Modeling contextual effects in longitudinal studies* (pp. 211-234). Routledge.

Cratty, B. J. (2017). Adapted physical education: Self-control and attention. *Focus on Exceptional Children, 37* (3).

Creswell, J. W. (2003). Research design: Qualitative, quantitative, and mixed methods design.

Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (Eds.). (1992). Optimal experience: Psychological studies of flow in consciousness. Cambridge university press.

Cooper, D. R., & Schindler, P. S. (2011). Business research methods, 11th (international) edition. Shanghai.

Cohen, J. (1992). A power primer. Psychological bulletin, 112(1), 155.

Cohen, L., & Manion, L. (2001). Research Methods in Education 5th Edition Rotledge Falmer, New York.

Cohn, E. G., & Farrington, D. P. (1999). Changes in the most-cited scholars in twenty criminology and criminal justice journals between 1990 and 1995. Journal of Criminal Justice, 27 (4), 345-359.

Chapple, C. L., Hope, T. L., & Whiteford, S. W. (2005). The direct and indirect effects of parental bonds, parental drug use, and self-control on adolescent substance use. *Journal of Child & Adolescent Substance Abuse, 14* (3), 17-38.

Daud, M. N., Coombes, L., Venkateswar, S., & Ross, K. (2012). Globalisation: The Experience of Malay Adolescents with Conduct Problems.

Daud, M., & Jalil, J. A. (2017). Protecting Children against Exposure to Content Risks Online in Malaysia: Lessons from Australia. *Jurnal Komunikasi, Malaysian Journal of Communication, 33* (1).

Dan, S. P., & Zalilah, M. S. (2007). Sex and ethnic differentials in physical activity levels of adolescents in Kuantan. *Malaysian journal of nutrition, 13* (2), 109-120.

Dawes, J. (2008). Do data characteristics change according to the number of scale points used? An experiment using 5-point, 7-point and 10-point scales. *International journal of market research, 50* (1), 61-104.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management science, 35* (8), 982-1003.

Denham, S. A., & Burton, R. (2012). *Social and Emotional Prevention and Intervention Programming for Preschoolers*. Springer Science & Business Media.

Denham, S., McKinley, M., Couchard, E., & Holt, R. (1990). Emotional and behavioural predictor of preschool peer ratings. *Child Development, 61,* 1145-1152.

Denzin, N. K., & Lincoln, Y. S. (1994). Introduction: Entering the field of qualitative research. In: N. K. Denzin & Y. S. Lincoln (eds.), *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage, pp. 1–17.

Demir, M., Jaafar, J., Bilyk, N., & Mohd Ariff, M. R. (2012). Social skills, friendship and happiness: A cross-cultural investigation. *The Journal of social psychology, 152* (3), 379-385.

Dearnley, C., Taylor, J., Hennessy, S., Parks, M., Coates, C., Haigh, J., ... & Dransfield, M. (2009). Using mobile technologies for assessment and learning in practice settings: Outcomes of five case studies. *International Journal on E-Learning, 8* (2), 193-207.

Department of Statistics (2016), "GDP By State - National Accounts - 2010-2015". Retrieved from https://www.dosm.gov.my/v1/

DeLisi, M. (2014). Low self-control is a brain-based disorder. *The nurture versus biosocial debate in criminology: On the origins of criminal behavior and criminality,* 172-184.

Dodge, K. A. (1985). Facets of social interaction and the assessment of social competence in children. In *Children's peer relations: Issues in assessment and intervention* (pp. 3-22). Springer, New York, NY.

Dodge, K. A. (2014). A social information processing model of social competence in children. In *Cognitive perspectives on children's social and behavioral development* (pp. 85-134). Psychology Press.

Domingo, M. G., & Garganté, A. B. (2016). Exploring the use of educational technology in primary education: Teachers' perception of mobile technology learning impacts and applications' use in the classroom. *Computers in Human Behavior, 56,* 21-28.

Drago, E. (2015). The effect of technology on face-to-face communication. *Elon Journal of Undergraduate Research in Communications, 6* (1).

Erath, S. A., & Tu, K. M. (2014). Peer stress in preadolescence: Linking physiological and coping responses with social competence. *Journal of Research on Adolescence, 24* (4), 757-771.

Economides, A. A., & Grousopoulou, A. (2008). Use of mobile phones by male and female Greek students. *International Journal of Mobile Communications, 6* (6), 729-749.

Engels, R. C., Finkenauer, C., Meeus, W., & Deković, M. (2001). Parental attachment and adolescents' emotional adjustment: The associations with social skills and relational competence. *Journal of Counseling Psychology, 48* (4), 428.

Essau, C., & Hutchinson, D. E. L. Y. S. E. (2008). Alcohol use, abuse and Dependence. *Adolescent Addiction: Epidemiology, Asessment, and treatment, 61*.

Fabes, R. A., Gaertner, B. M., & Popp, T. K. (2006). Getting Along with Others: Social Competence in Early Childhood. In K. McCartney & D. Philips (Eds.), *Blackwell Handbook of Early Childhood Development*. Blackwell Publishing.

Fantuzzo, J., & McWayne, C. (2002). The relationship between peer-play interactions in the family context and dimensions of school readiness for low-income preschool children. *Journal of Educational Psychology, 94* (1), 79.

Finkel, E. J., & Fitzsimons, G. M. (2011). The effects of social relationships on self-regulation. In *Handbook of self-regulation: Research, theory, and applications*. Guilford Press.

Finkel, E. J., DeWall, C. N., Slotter, E. B., Oaten, M., & Foshee, V. A. (2009). Self-regulatory failure and intimate partner violence perpetration. *Journal of Personality and Social Psychology, 97* (3), 483-499.

Fichten, C. S., Tagalakis, V., Judd, D., Wright, J., & Amsel, R. (1992). Verbal and nonverbal communication cues in daily conversations and dating. *The Journal of Social Psychology, 132* (6), 751-769.

Foerster, M., Roser, K., Schoeni, A., & Röösli, M. (2015). Problematic mobile phone use in adolescents: derivation of a short scale MPPUS-10. *International journal of public health, 60* (2), 277-286.

Ford, J. A., & Blumenstein, L. (2013). Self-control and substance use among college students. *Journal of drug issues, 43* (1), 56-68.

Franken, A., Moffitt, T. E., Steglich, C. E., Dijkstra, J. K., Harakeh, Z., & Vollebergh, W. A. (2016). The role of self-control and early adolescents' friendships in the development of externalizing behavior: The SNARE study. *Journal of youth and adolescence, 45* (9), 1800-1811.

Gardner, M., & Steinberg, L. (2005). Peer influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: an experimental study. *Developmental psychology, 41* (4), 625.

Garland, R. (1991). The mid-point on a rating scale: Is it desirable? *Marketing Bulletin, 2* (3), 66- 70.

Garrett-Peters, P. T., & Fox, N. A. (2007). Cross-cultural differences in children's emotional reactions to a disappointing situation. *International Journal of Behavioral Development, 31* (2), 161-169.

Gailliot, M. T., & Baumeister, R. F. (2018). The physiology of willpower: Linking blood glucose to self-control. In *Self-Regulation and Self-Control* (pp. 137-180). Routledge.

Goodman-Deane, J., Mieczakowski, A., Johnson, D., Goldhaber, T., & Clarkson, P. J. (2016). The impact of communication technologies on life and relationship satisfaction. *Computers in Human Behavior, 57,* 219-229.

Goodman, E., & Huang, B. (2002). Socioeconomic status, depressive symptoms, and adolescent substance use. *Archives of pediatrics & adolescent medicine, 156* (5), 448-453.

Goswami, A., & Dutta, S. (2015). Gender differences in technology usage—a literature review. *Open Journal of Business and Management, 4* (01), 51.

Gunawardena, C. N. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International journal of educational telecommunications, 1* (2), 147-166.

Gundersen, K. K. (2010). Reducing behaviour problems in young people through social competence programmes. *International Journal of Emotional Education, 2* (2), 48-62.

George, D., & Mallery, P. (2003) SPSS for windows step by step: A sample Guide & reference Boston; Allyn & Bacon.

Genc, Z. (2014). Parents' perceptions about the mobile technology use of preschool aged children. *Procedia-Social and Behavioral Sciences, 146,* 55-60.

Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime.* Stanford University Press.

Guo, P., Watts, K., & Wharrad, H. (2016). An integrative review of the impact of mobile technologies used by healthcare professionals to support education and practice. *Nursing open, 3* (2), 66-78.

Grasmick, H. G., Tittle, C. R., Bursik, R. J., & Arneklev, B. J. (1993). Testing the core empirical implications of Gottfredson and Hirschi's general theory of crime. *Journal of Research in Crime and Delinquency.*

UNIVERSITI MALAYSIA SABAH

Gresham, F. M. (1986). Conceptual issues in the assessment of social competence. *Children's social behavior: Development, assessment, and modification*, 143-179.

Gresham, F. M., & Elliott, S. N. (1990). *Social Skills Rating System*. Circle Pines, MA: American Guidance Services.

Guilford, J. P. (1956). *Fundamental Statistics in Psychology and Education: 3d Ed.* McGraw-Hill.

Gibson, C. L., Ward, J. T., Wright, J. P., Beaver, K. M., & DeLisi, M. (2010). Where does gender fit in the measurement of self-control?. *Criminal Justice and Behavior, 37*(8), 883-903.

Hair Jr, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). SEM: An introduction. *Multivariate data analysis: A global perspective*, 629-686.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). Multivariate data analysis: Pearson new international edition. Pearson Higher Ed.

Hartup, W. W., & Moore, S. G. (1990). Early peer relations: Developmental significance and prognostic implications. *Early childhood research quarterly, 5*(1), 1-17.

Hamm, M. P., Newton, A. S., Chisholm, A., Shulhan, J., Milne, A., Sundar, P., ... & Hartling, L. (2015). Prevalence and effect of cyberbullying on children and young people: A scoping review of social media studies. *JAMA pediatrics, 169*(8), 770-777.

Hampton, V. R., & Fantuzzo, J. W. (2003). The validity of the Penn Interactive Peer Play Scale with urban, low-income kindergarten children. *School Psychology Review, 32*(1), 77.

Hans, G. (2006). Are girls (even) more addicted? Some gender patterns of cell phone usage. *Sociol-ogy in Switzerland: Sociology of the Mobile phone. Online Publications. Zuerich, June*, 3.

Herche, J., & Engelland, B. (1996). Reversed-polarity items and scale unidimensionality. *Journal of the Academy of Marketing Science, 24*(4), 366-374.

Higgins, G. E., & Tewksbury, R. (2006). Sex and self-control theory: The measures and causal model may be different. Youth & Society, 37(4), 479-503.

Hirschi, T. (2004). Self-control and crime. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications* (pp. 537-552). New York, NY, US: Guilford Press.

Hilao, M. P., & Wichadee, S. (2017). Gender Differences in Mobile Phone Usage for Language Learning, Attitude, and Performance. *Turkish Online Journal of Distance Education, 18* (2), 68-79.

Hippel, W.V., & Gonsalkorale, K. (2005). "That is bloody revolting!" Inhibitory control of thoughts better left unsaid. *Psychological science, 16 7*, 497-500.

Hollingworth, L. S. (1918). Comparison of the sexes in mental traits. Psychological Bulletin, 15 (12), 427.

Hops, H., & Finch, M. (1985). Social competence and skill: A reassessment. In *Children's peer relations: Issues in assessment and intervention* (pp. 23-39). Springer, New York, NY.

Horvat, J., Oreski, D., & Markic, D. (2011, June). Gender differences in the Internet usage among postgraduate students. In *Information Technology Interfaces (ITI), Proceedings of the ITI 2011 33rd International Conference on* (pp. 281-286). IEEE.

Hyde, J. S. (2005). The gender similarities hypothesis. American psychologist, 60 (6), 581.

Iksan, Z. H., Zakaria, E., Meerah, T. S. M., Osman, K., Lian, D. K. C., Mahmud, S. N. D., & Krish, P. (2012). Communication skills among university students. *Procedia-Social and Behavioral Sciences, 59*, 71-76.

Irshad, E., & Atta, M. (2013). Social competence as predictor of bullying among children and adolescents. *Journal of the Indian Academy of Applied Psychology, 39* (1), 35-42.

Ishaq, G., Rafique, R., & Asif, M. (2017). Personality traits and news addiction: Mediating role of self-control. Journal of the Dow University of Health Sciences (JDUHS), 11 (2).

Ismail, I. B., & Idrus, R. M. (2009). Development of SMS Mobile Technology for M-Learning for Distance Learners. *iJIM, 3* (2), 55-57.

Ivert, A. K., Andersson, F., Svensson, R., Pauwels, L. J., & Torstensson Levander, M. (2018). An examination of the interaction between morality and self-control in offending: A study of differences between girls and boys. Criminal Behaviour and Mental Health, 28 (3), 282-294.

Jiar, Y. K., & Xi, L. (2012, March). Are there short-term effects of social, emotional and physical competence in early childhood education and care centres?. In *Proceedings of the 6th international conference on Communications and Information Technology, and Proceedings of the 3rd World conference on Education and Educational Technologies* (pp. 28-31). World Scientific and Engineering Academy and Society (WSEAS).

Jones, D. E., Greenberg, M., & Crowley, M. (2015). Early social-emotional functioning and public health: The relationship between kindergarten social competence and future wellness. *American journal of public health, 105* (11), 2283-2290.

Juvonen, J., & Weiner, B. (1993). An attributional analysis of students' interactions: The social consequences of perceived responsibility. *Educational Psychology Review, 5* (4), 325-345.

Kalem, G., & Turhan, Ç. (2015). Mobile technology applications in the healthcare industry for disease management and wellness. *Procedia-Social and Behavioral Sciences, 195,* 2014-2018.

Kamibeppu, K., & Sugiura, H. (2005). Impact of the mobile phone on junior highschool students' friendships in the Tokyo metropolitan area. Cyber Psychology and Behavior, 8 (2), 121–130.

Kamaluddin, M. R., Shariff, N. S. M., & Saat, G. A. M. (2013). A unidimensional scale for self-control within Malaysian settings. *Education in Medicine Journal, 5* (4).

Kassim, N. M., & Zain, M. (2008). Trends in Mobile Technology and Business in Malaysia. In *Trends in Mobile Technology and Business in the Asia–Pacific Region* (pp. 127-152).

Kasahara, G. M. (2017). *Gender Differences in Social Media Use and Cyberbullying in Belize* (Doctoral dissertation, Minnesota State University, Mankato).

Kee, C. N. L., & Emmanuel, J. S. (2016). What Mobile Devices Mean to the 21st Century Teenagers?

Kelly, A. M., Townsend, K. W., Davis, S., Nouryan, L., Bostrom, M. P., & Felix, K. J. (2018). Comparative assessment of grit, conscientiousness, and self-control in applicants interviewing for residency positions and current orthopaedic surgery residents. Journal of surgical education, 75(3), 557-563.

Kementerian Pendidikan Malaysia, (2018). Bilangan Sekolah Mengikut Kumpulan Jenis dan Negeri. Retrieve from https://moe.gov.my/index.php/my/statistik-kpm/bilangan-sekolah-mengikut-kumpulan-jenis-dan-negeri

Khasinah, S. (2013). Hakikat Manusia Menurut Pandangan Islam Dan Barat. *Jurnal Ilmiah Didaktika, 13* (2).

Kim, H. K., & Davis, K. E. (2009). Toward a comprehensive theory of problematic Internet use: Evaluating the role of self-esteem, anxiety, flow, and the self-rated importance of Internet activities. Computers in Human Behavior, 25 (2), 490-500.

Kim, E., Guo, Y., Koh, C., & Cain, K. C. (2010). Korean immigrant discipline and children's social competence and behavior problems. *Journal of pediatric nursing, 25* (6), 490-499.

King, K. M., Fleming, C. B., Monahan, K. C., & Catalano, R. F. (2011). Changes in self-control problems and attention problems during middle school predict alcohol, tobacco, and marijuana use during high school. *Psychology of Addictive Behaviors, 25* (1), 69.

Kline, R. B. (2015). *Principles and practice of structural equation modeling.* Guilford publications.

Kwon, H. S., & Chidambaram, L. (2000, January). A test of the technology acceptance model: The case of cellular telephone adoption. In *System Sciences, 2000. Proceedings of the 33rd Annual Hawaii International Conference on* (pp. 7-pp). IEEE.

Larson, J. J., Whitton, S. W., Hauser, S. T., & Allen, J. P. (2007). Being close and being social: Peer ratings of distinct aspects of young adult social competence. *Journal of personality assessment, 89* (2), 136-148.

LaGrange, T. C., & Silverman, R. A. (1999). Low self-control and opportunity: Testing the general theory of crime as an explanation for gender differences in delinquency. Criminology, 37 (1), 41-72.

Lee, A., Hankin, B. L., & Mermelstein, R. J. (2010). Perceived social competence, negative social interactions, and negative cognitive style predict depressive symptoms during adolescence. *Journal of clinical child & adolescent psychology, 39* (5), 603-615.

Lee, Y. K., Chang, C. T., Lin, Y., & Cheng, Z. H. (2014). The dark side of smartphone usage: Psychological traits, compulsive behavior and technostress. *Computers in human behavior, 31*, 373-383.

Leidy, M. S., Guerra, N. G., & Toro, R. I. (2010). Positive parenting, family cohesion, and child social competence among immigrant Latino families. *Journal of Family Psychology, 24* (3), 252.

Lenhart, A., Duggan, M., Perrin, A., Stepler, R., Rainie, H., & Parker, K. (2015). *Teens, social media & technology overview 2015* (pp. 04-09). Pew Research Center.

Lepp, A., Barkley, J. E., & Karpinski, A. C. (2015). The relationship between cell phone use and academic performance in a sample of US college students. *Sage Open, 5* (1), 2158244015573169.

Liang, B., Tracy, A., Kenny, M., & Brogan, D. (2008). Gender differences in the relational health of youth participating in a social competency program. *Journal of Community Psychology, 36* (4), 499-514.

Liang, T. P., Huang, C. W., Yeh, Y. H., & Lin, B. (2007). Adoption of mobile technology in business: a fit-viability model. *Industrial management & data systems, 107* (8), 1154-1169.

Ling, R. (2001). "We Release Them Little by Little": Maturation and Gender Identity as Seen in the Use of Mobile Telephony. *Personal and Ubiquitous Computing, 5* (2), 123-136.

Ling, R. (2004). *The mobile connection: The cell phone's impact on society.* Elsevier.

Ling, T. Z., Pheng, J. K. A., Sin, W. W., & Soon-Aun, T. (2017). The Relationship between Personality Traits and Behavioral Problems among Adolescents in Malaysia. *Sains Humanika, 9* (3-2).

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of psychology.*

Lowry, P. B., Gaskin, J., Twyman, N., Hammer, B., & Roberts, T. (2012). Taking 'fun and games' seriously: Proposing the hedonic-motivation system adoption model (HMSAM).

Logue, A. W. (1995). *Self-control: Waiting until tomorrow for what you want today.* Prentice-Hall, Inc.

Luecken, L. J., Roubinov, D. S., & Tanaka, R. (2013). Childhood family environment, social competence, and health across the lifespan. *Journal of Social and Personal Relationships, 30* (2), 171-178.

Luthar, S. S. (1995). Social competence in the school setting: Prospective cross-domain associations among inner-city teens. *Child development, 66* (2), 416-429.

Maccoby, E. E., & Jacklin, C. N. (1980). Sex differences in aggression: A rejoinder and reprise. Child development, 964-980.

Marsh, H. W., Barnes, J., Cairns, L., & Tidman, M. (1984). Self-Description Questionnaire: Age and sex effects in the structure and level of self-concept for preadolescent children. *Journal of Educational psychology, 76* (5), 940.

Malaysian Communication and Multimedia Commission (2014). Hand Phone Users Survey. Retrieved from https://www.mcmc.gov.my/resources/statistics/hand-phone-surveys

Malaysian Communication and Multimedia Commission (2016). Hand Phone Users Survey. Retrieved from https://www.mcmc.gov.my/resources/statistics/hand-phone-surveys

Mahat, J., Ayub, A. F. M., & Luan, S. (2012). An assessment of students' mobile

self-efficacy, readiness and personal innovativeness towards mobile learning in higher education in Malaysia. *Procedia-Social and Behavioral Sciences, 64,* 284-290.

McCullough, M. E., & Willoughby, B. L. (2009). Religion, self-regulation, and self-control: Associations, explanations, and implications. *Psychological bulletin, 135* (1), 69.

Metcalfe, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: dynamics of willpower. *Psychological review, 106* (1), 3.

Ministry of Communications and Multimedia, Department of Information. (2015). Retrieved from https://web.archive.org/web/20160212125740/http://pmr.penerangan.gov.my/index.php/info-terkini/19463-unjuran-populasi-penduduk-2015.html

Misra, S., Cheng, L., Genevie, J., & Yuan, M. (2016). The iPhone effect: the quality of in-person social interactions in the presence of mobile devices. *Environment and Behavior, 48* (2), 275-298.

Morrill, T. B. (2009). Cell phone use and psychosocial development among emerging adults.

Mpofu, E. (1997). Children's social acceptance and academic achievement in Zimbabwean multicultural school settings. Journal of Genetic Psychology, 158, 5–25.

Mulaik, S. A., & James, L. R. (1995). Objectivity and reasoning in science and structural equation modeling.

Nakamura, J., & Csikszentmihalyi, M. (2009). Flow theory and research. *Handbook of positive psychology,* 195-206.

Nayak, M. (2014). Impact of culture linked gender and age on emotional intelligence of higher secondary school adolescents. *International Journal of Advancements in Research and Technology, 3* (9), 64-79.

Neuman, W. L., & Kreuger, L. (2003). *Social work research methods: Qualitative and quantitative approaches.* Allyn and Bacon.

Niu, H. J. (2013). Cyber peers' influence for adolescent consumer in decision-making styles and online purchasing behavior. *Journal of Applied Social Psychology, 43* (6), 1228-1237.

Niu, H. J., & Chang, C. T. (2014). Addiction in cyberspace: flow experience on e-shopping. *International Journal of Web Based Communities, 10* (1), 52-68.

Nobles, M. R., Cramer, R. J., & Kercher, G. A. (2012). *Understanding how some victims become perpetrators: Self-control as a moderator.* Crime Victims' Institute, Sam Houston State University.

Oberst, U., Wegmann, E., Stodt, B., Brand, M., & Chamarro, A. (2017). Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of adolescence, 55,* 51-60.

Osman, M. A., Talib, A. Z., Sanusi, Z. A., Shiang-Yen, T., & Alwi, A. S. (2012). A Study of the Trend of Smartphone and its Usage Behavior in Malaysia. *International Journal of New Computer Architectures and their Applications (IJNCAA), 2* (1), 274-285.

Osman, I., & Bakar, S. (2014). Social capital and social competence in the creation of human capital for Community Based Tourism (CBT) in Malaysia: The case of rural women's entrepreneurship in the Homestay Program.

Österman, K., & Björkqvist, K. (2018). Sex differences in aggression. In *The Routledge International Handbook of Human Aggression* (pp. 47-58). Routledge.

Pallant, J. (2013). SPSS Survival Manual: A Step by Step guide to data analysis using IBM SPSS. Berkshire, England.

Park, W. K. (2005). Mobile phone addiction. In *Mobile communications* (pp. 253-272). Springer, London.

Park, S. Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioral intention to use e-learning. *Educational technology & society, 12* (3), 150-162.

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International journal of electronic commerce, 7* (3), 101-134.

Pettit, G. S., Bates, J. E., Holtzworth-Munroe, A., Marshall, A. D., Harach, L. D., Cleary, D. J., & Dodge, K. A. (2006). Aggression and insecurity in late adolescent romantic relationships: Antecedents and developmental pathways. In A. C. Huston & M. N. Ripke (Eds.), Developmental contexts in middle childhood: Bridges to adolescence and adulthood. (pp. 41–61). Cambridge, UK: Cambridge University Press.

Reyns, B. W., Henson, B., & Fisher, B. S. (2014). Digital deviance: Low self-control and opportunity as explanations of sexting among college students. *Sociological Spectrum, 34* (3), 273-292.

Peleg, O. (2012). Social anxiety and social adaptation among adolescents at three age levels. *Social Psychology of Education, 15* (2), 207-218.

Pfeifer, J. H., & Blakemore, S. J. (2012). Adolescent social cognitive and affective neuroscience: past, present, and future. *Social cognitive and affective neuroscience, 7* (1), 1-10.

Pinch, T. J., & Bijker, W. E. (1984). The social construction of facts and artefacts: Or how the sociology of science and the sociology of technology might benefit each other. *Social studies of science, 14* (3), 399-441.

Pillay, S., & Vijaindren, A. (2016, May 22). Keep the smartphones away from your kids. Retrieved from https://www.nst.com.my/news/2016/05/147114/keep-smartphones-away-your-kids

Pung, P., Yaacob, S., Baharudin, R., & Osman, S. (2015). Low Self-Control, Peer Delinquency and Aggression among Adolescents in Malaysia. *Asian Social Science, 11* (21). doi: 10.5539/ass.v11n21p193

Pornsakulvanich, V. (2017). Personality, attitudes, social influences, and social networking site usage predicting online social support. *Computers in Human Behavior, 76*, 255-262.

Portal Rasmi Pejabat Daerah Gombak (2013). Retrieved from http://www2.selangor.gov.my/gombak.php/pages/view/18?mid=61

Porter, C. E., & Donthu, N. (2006). Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics. *Journal of business research, 59* (9), 999-1007.

Polit, D. F., Beck, C. T., & Hungler, B. P. (2001). Evaluating measurements and data quality. *Essentials of Nursing Research: Methods, Appraisal, and Utilization*, 301-24.

Ploderer, B., Reitberger, W., Oinas-Kukkonen, H., & Gemert-Pijnen, J. (2014). Social interaction and reflection for behaviour change. *Personal and ubiquitous computing, 18* (7), 1667-1676.

Rose-Krasnor, L. (1997). "The nature of social competence: A theoretical review." Social development 6 (1): 111-135.

Romer, D., Duckworth, A. L., Sznitman, S., & Park, S. (2010). Can adolescents learn self-control? Delay of gratification in the development of control over risk taking. *Prevention Science, 11* (3), 319-330.

Rubin, K. H., & Krasnor, L. R. (1986). Social-cognitive and social behavioral perspectives on problem solving. In *Cognitive perspectives on children's social and behavioral development. The Minnesota Symposia on Child Psychology* (Vol. 18, pp. 1-68). Hillsdale, NJ: Erlbaum.

Rydell, A.-M., Hagekull, B., & Bohlin, G. (1997). Measurement of two social competence aspects in middle childhood. *Developmental Psychology, 33*(5), 824–833. doi:10.1037/0012-1649.33.5.824

Rabar, V., & Martinac Dorcic, T. (2017). The Relationship between Imaginary Companions, Social Competence and Behavioral Problems of Preschool Children. *Socijalna psihijatrija, 45*(4), 241-253.

Rehbein, F., Kliem, S., Baier, D., Mößle, T., & Petry, N. M. (2015). Prevalence of internet gaming disorder in German adolescents: Diagnostic contribution of the nine DSM-5 criteria in a state-wide representative sample. *Addiction, 110*(5), 842-851.

Rising, C. J., & Bol, N. (2017). Nudging our way to a healthier population: The effect of calorie labelling and self-control on menu choices of emerging adults. Health communication.

Rosen, L. D., Whaling, K., Carrier, L. M., Cheever, N. A., & Rokkum, J. (2013). The media and technology usage and attitudes scale: An empirical investigation. *Computers in human behavior, 29*(6), 2501-2511.

Sachdev, S. B., & Verma, H. V. (2004). Relative importance of service quality dimensions: A multisectoral study. *Journal of services research, 4*(1).

Saidon, J., Musa, R., Harun, M. H. M., & Adam, A. A. (2016). The Conceptual Framework of Pathological Smartphone Use (PSU). *Procedia Economics and Finance, 37*, 426-431.

Salehan, M., & Negahban, A. (2013). Social networking on smartphones: When mobile phones become addictive. *Computers in Human Behavior, 29*(6), 2632-2639.

Satici, B., Saricali, M., Ahmet SATICI, S., & Eraslan Capan, B. (2014). Social Competence and Psychological Vulnerability as Predictors of Facebook Addiction. *Studia Psychologica, 56*(4).

Schoon, I. (2009). *Measuring social competencies* (No. 58). German Council for Social and Economic Data (RatSWD).

Schilhab, T. (2017). Adaptive smart technology use: The need for meta-self-regulation. *Frontiers in psychology, 8*, 298.

Semrud-Clikeman, M. (2007). Social competence in children. In Social competence in children (pp. 1-9). Springer, Boston, MA.

Seo, D. G., Park, Y., Kim, M. K., & Park, J. (2016). Mobile phone dependency and its impacts on adolescents' social and academic behaviors. *Computers in Human Behavior, 63*, 282-292.

Shanmugasundaram, U., & Mohamad, A. R. (2011). Social and emotional

competency of beginning teachers. *Procedia-Social and Behavioral Sciences, 29,* 1788-1796.

Short, J., Williams, E., & Christie, B. (1976). The social psychology of telecommunications.

Shuid, M., & Mohd. Fauzi Yunus. (2001). *Malaysian studies.* Pearson Education (M) Sdn. Bhd.

Srifi, N., Bahiri, R., Rostom, S., Bendeddouche, I., Lazrek, N., & Hajjaj-Hassouni, N. (2013). The validity and reliability of the Moroccan version of the Revised Fibromyalgia Impact Questionnaire. *Rheumatology international, 33* (1), 179-183.

Stepp, S. D., Pardini, D. A., Loeber, R., & Morris, N. A. (2011). The relation between adolescent social competence and young adult delinquency and educational attainment among at-risk youth: The mediating role of peer delinquency. *The canadian journal of Psychiatry, 56* (8), 457-465.

Smith, P. K., & Hart, C. H. (Eds.). (2010). *The Wiley-Blackwell handbook of childhood social development.* John Wiley & Sons.

Swain, S. D., Weathers, D., & Niedrich, R. W. (2008). Assessing three sources of misresponse to reversed Likert items. *Journal of Marketing Research, 45* (1), 116-131.

Taborsky, B., & Oliveira, R. F. (2012). Social competence: an evolutionary approach. Trends in ecology & evolution, 27(12), 679-688.

Tannen, D. (1990). Gender differences in topical coherence: Creating involvement in best friends' talk. Discourse Processes, 13(1), 73-90.

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. Journal of Personality, 72, 271–324.

Tan, Ç., Pamuk, M., & Dönder, A. (2013). Loneliness and mobile phone. *Procedia-Social and Behavioral Sciences, 103,* 606-611.

Tarullo, A. R., Obradovic, J., & Gunnar, M. R. (2009). Self-control and the developing brain. Zero to three, 29 (3), 31.

Tamam, E. (2010). Examining Chen and Starosta's model of intercultural sensitivity in a multiracial collectivistic country. *Journal of Intercultural Communication Research, 39* (3), 173-183.

Thomas, C. L., & Dimitrov, D. M. (2007). Effects of a teen pregnancy prevention program on teens' attitudes toward sexuality: A latent trait modeling approach. *Developmental Psychology, 43* (1), 173.

Topper, C. (2017). Parental Perception of Mobile Device Usage in Children and Social Competency. *ProQuest LLC.*

Tu, C. H. (2001). How Chinese perceive social presence: An examination of interaction in online learning environment. *Educational media international, 38* (1), 45-60.

Tu, C. H., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *The American journal of distance education, 16* (3), 131-150.

Tu, Y., & Yang, Z. (2016). Self-control as mediator and moderator of the relationship between social support and subjective well-being among the Chinese elderly. *Social Indicators Research, 126* (2), 813-828.

Uba, I., Hassan, S. A. B., Mofrad, S., Abdulla, R., & Yaacob, S. N. (2012). Redefining social competence and its relationship with authoritarian parenting. *Procedia-Social and Behavioral Sciences, 46,* 1876-1880.

Urdan, T., & Klein, S. (1998). Early adolescence: A review of the literature. *Washington, DC: US Department of Education Office of Educational Research and Improvement.*

Van Deursen, A. J., Bolle, C. L., Hegner, S. M., & Kommers, P. A. (2015). Modeling habitual and addictive smartphone behavior: The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in human behavior, 45,* 411-420.

Van Heerden, A. C., Norris, S. A., & Richter, L. M. (2010). Using mobile phones for adolescent research in low and middle income countries: preliminary findings from the birth to twenty cohort, South Africa. *Journal of Adolescent Health, 46* (3), 302-304.

Valcke, M., Bonte, S., De Wever, B., & Rots, I. (2010). Internet parenting styles and the impact on Internet use of primary school children. *Computers & Education, 55* (2), 454-464.

Vohs, K. D., & Baumeister, R. F. (2004). *Handbook of self-regulation: Research, theory, and applications.* Guilford Publications.

Vogt, W. P. (2006). Quantitative research methods for professionals in education and other fields. *Columbus, OH: Allyn & Bacon.*

Vrijheid, M., Cardis, E., Armstrong, B. K., Auvinen, A., Berg, G., Blaasaas, K. G., ... & Deltour, I. (2006). Validation of short term recall of mobile phone use for the Interphone study. *Occupational and environmental medicine, 63* (4), 237-243.

Vygotsky, L. (1978). Interaction between learning and development. *Readings on the development of children, 23* (3), 34-41.

Walsh, S. P., White, K. M., & Young, R. M. (2009). The phone connection: A qualitative exploration of how belongingness and social identification relate to mobile phone use amongst Australian youth. *Journal of Community & Applied Social Psychology, 19* (3), 225-240.

Walker, S. (2005). Gender differences in the relationship between young children's peer-related social competence and individual differences in theory of mind. *The Journal of genetic psychology, 166* (3), 297-312.

Wang, L., Fan, C., Tao, T., & Gao, W. (2017). Age and gender differences in self-control and its intergenerational transmission. *Child: care, health and development, 43* (2), 274-280.

Wan, C. S., & Chiou, W. B. (2006). Psychological motives and online games addiction: Atest of flow theory and humanistic needs theory for taiwanese adolescents. CyberPsychology & Behavior, 9 (3), 317-324.

Webster, J., Trevino, L. K., & Ryan, L. (1993). The dimensionality and correlates of flow in human-computer interactions. Computers in human behavior, 9 (4), 411-426.

Trevino, L. K., & Webster, J. (1992). Flow in computer-mediated communication: Electronic mail and voice mail evaluation and impacts. Communication research, 19 (5), 539-573.

Windle, M., Brener, N., Cuccaro, P., Dittus, P., Kanouse, D. E., Murray, N., ... & Schuster, M. A. (2010). Parenting predictors of early-adolescents' health behaviors: Simultaneous group comparisons across sex and ethnic groups. *Journal of youth and adolescence, 39* (6), 594-606.

Wolfe, R. N., & Johnson, S. D. (1995). Personality as a predictor of college performance. *Educational and psychological measurement, 55* (2), 177-185.

Woolley, H. T. (1914). The psychology of sex. Psychological Bulletin, 11(10), 353.

Yaacob, S. N., Juhari, R., Talib, M. A., & Uba, I. (2009). Loneliness, stress, self esteem and depression among Malaysian adolescents. *Jurnal Kemanusiaan, 7* (2).

Yaacob, N. A., Osman, M. M., & Bachok, S. (2014). Factors influencing parents' decision in choosing private schools. *Procedia-Social and Behavioral Sciences, 153,* 242-253.

Zimmer-Gembeck, M. J., & Skinner, E. A. (2011). Perceived control and the development of coping. *The Oxford handbook of stress, health, and coping,* 35-59.

Zorza, J. P., Marino, J., de Lemus, S., & Mesas, A. A. (2013). Academic performance and social competence of adolescents: Predictions based on effortful control and empathy. *The Spanish journal of psychology, 16.*

133