



UNIVERSITI PUTRA MALAYSIA

***INTERRELATIONSHIP BETWEEN SCREEN TIME, PLAYFULNESS,
PARENTAL MONITORING AND EMOTIONAL INTELLIGENCE AMONG
CHINESE PRESCHOOL CHILDREN IN KUALA LUMPUR, MALAYSIA***

TUN JU ERN

FEM 2020 25



**INTERRELATIONSHIP BETWEEN SCREEN TIME, PLAYFULNESS,
PARENTAL MONITORING AND EMOTIONAL INTELLIGENCE
AMONG CHINESE PRESCHOOL CHILDREN IN KUALA LUMPUR,
MALAYSIA**

By

TUN JU ERN

**Thesis Submitted to the School of Graduate Studies, Universiti Putra
Malaysia, in Fulfilment of the Requirements for the Degree of
Master of Science**

February 2021

All material contained within the thesis, including without limitation text, logos, icons, photographs and all other artwork, is copyright material of Universiti Putra Malaysia unless otherwise stated. Use may be made of any material contained within the thesis for non-commercial purposes from the copyright holder. Commercial use of material may only be made with the express, prior, written permission of Universiti Putra Malaysia.

Copyright © Universiti Putra Malaysia



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master of Science

**INTERRELATIONSHIP BETWEEN SCREEN TIME, PLAYFULNESS,
PARENTAL MONITORING AND EMOTIONAL INTELLIGENCE
AMONG CHINESE PRESCHOOL CHILDREN IN KUALA LUMPUR,
MALAYSIA**

By

TUN JU ERN

February 2021

Chair : Associate Professor Zarinah binti Arshat, PhD
Faculty : Human Ecology

Emotional intelligence develops during the crucial early stage of age among preschool children and many negative impacts may arise and affect their lives due to the deficits in emotional intelligence. The purpose of the present study is to determine the relationship between screen time, playfulness, parental monitoring and emotional intelligence among Chinese preschool children in Kuala Lumpur. Additionally, this study wishes to find out the unique predictor of emotional intelligence and whether child's sex and parental monitoring would play moderating roles in these relationships. There were 217 mothers of Chinese preschool children aged between four to six years old study at selected private preschools in Kuala Lumpur were recruited as respondents in this study by using Stratified Proportionate Random Sampling technique. Self-administered questionnaire was distributed to mothers. Children's screen time was assessed by using Screen Time Questionnaire (STQ), whereas the information of playfulness was collected by using Child Behavior Inventory of Playfulness (CBI). Adult Involvement in Media Scale (AIM) was employed to measure parental monitoring and lastly Parent Rating Scales of Emotional Intelligence was utilized to assess children's emotional intelligence. All instruments used in the current study showed good reliability in the local context with overall reliability score of above .70. As the results, there was no significant relationship between screen time and emotional intelligence. However, playfulness ($r = .42, p < .01$) and parental monitoring ($r = .35, p < .01$) were significantly positive correlated with emotional intelligence. Besides, playfulness ($\beta = .29, p < 0.00$) and parental monitoring ($\beta = .27, p < 0.00$) were found as predictors of emotional intelligence. Nevertheless, child's sex and parental monitoring could not consider as moderators in this study. In sum, the study provides valuable information to parents on how screen time, playfulness

and parental monitoring influence emotional intelligence among preschool children.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Master Sains

**HUBUNGAN ANTARA PENGGUNAAN MASA SKRIN,
SUKA BERMAIN, PEMANTAUAN IBU BAPA DAN
KECERDASAN EMOSI DALAM KALANGAN KANAK-
KANAK PRASEKOLAH CINA DI KUALA LUMPUR,
MALAYSIA**

Oleh

TUN JU ERN

Februari 2021

Pengerusi : Profesor Madya Zarinah Arshat, PhD
Fakulti : Ekologi Manusia

Kecerdasan emosi berkembang pada peringkat awal usia dalam kalangan kanak-kanak prasekolah dan banyak impak negatif yang mungkin timbul dan mempengaruhi kehidupan mereka disebabkan defisit dalam kecerdasan emosi. Tujuan kajian ini adalah untuk menentukan hubungan antara masa skrin, suka bermain, pemantauan ibu bapa dan kecerdasan emosi dalam kalangan kanak-kanak prasekolah Cina di Kuala Lumpur. Selain itu, kajian ini ingin mengetahui peramal unik kecerdasan emosi dan samada jantina kanak-kanak dan pemantauan ibu bapa akan memainkan peranan sederhana dalam hubungan ini. Terdapat 217 ibu yang mempunyai kanak-kanak prasekolah Cina berumur antara empat hingga enam tahun yang belajar di prasekolah swasta terpilih di Kuala Lumpur telah dipilih sebagai responden dalam kajian semasa dengan menggunakan teknik *Stratified Proportionate Random Sampling*. Data telah dikumpulkan dengan menggunakan borang soal selidik tadbir sendiri. Masa skrin kanak-kanak telah dinilai dengan menggunakan *Screen Time Questionnaire (STQ)*, manakala maklumat tentang suka bermain telah dikumpulkan dengan menggunakan *Child Behavior Inventory of Playfulness (CBI)*, *Adult Involvement in Media Scale (AIM)* digunakan untuk mengukur pemantauan ibu bapa dan akhirnya *Parent Rating Scales of Emotional Intelligence* telah digunakan untuk menilai kecerdasan emosi kanak-kanak. Semua instrumen yang digunakan dalam kajian ini menunjukkan kebolehpercayaan yang baik dalam konteks tempatan dengan skor kebolehpercayaan keseluruhan di atas .70. Hasil kajian menunjukkan bahawa tidak terdapat perkaitan yang signifikan antara masa skrin dan kecerdasan emosi. Walau bagaimanapun, suka bermain ($r = .42, p < .01$) dan pemantauan ibu bapa ($r = .35, p < .01$) mempunyai korelasi positif yang signifikan dengan kecerdasan emosi. Selain

itu, suka bermain ($\beta = .29, p < 0.00$) dan pemantauan ibu bapa ($\beta = .27, p < 0.00$) merupakan peramal unik kecerdasan emosi. Walaupun begitu, jantina kanak-kanak dan pemantauan ibu bapa tidak dapat dianggap sebagai moderator dalam kajian ini. Ringkasnya, kajian ini memberikan maklumat berharga kepada ibu bapa tentang bagaimana masa skrin, suka bermain dan pemantauan ibu bapa mempengaruhi kecerdasan emosi dalam kalangan kanak-kanak.



ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my thesis supervisor Assoc. Prof. Dr Zarinah Arshat for her hard work in guiding me to complete my thesis. Appreciation for continually receiving her encouragement and guidance throughout the long process by providing significant, thoughtful, helpful and useful knowledge and insights. Besides, I would like to thank my thesis committee member, Dr Nellie Ismail for her suggestions, encouragements and recommendations in helping me to complete my thesis. To my beloved family and friends, my daddy, Herman, Chen Chen and Caryn, I would like to offer my sincere acknowledgment to them. Thanks for their lifelong supports, caring and unconditionally regards on me. Last but not least, special thanks to all respondents, principals, teachers who participated in this study and thanks a lot to the developers of the instruments who granted permissions for me to utilize and modify their instruments based on suitability. Without all of you, I would not be able to complete and finish my thesis.

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

Zarinah Arshat, PhD

Associate Professor
Faculty of Human Ecology
Universiti Putra Malaysia
(Chairman)

Nellie Ismail, PhD

Senior Lecturer
Faculty of Human Ecology
Universiti Putra Malaysia
(Member)

ZALILAH MOHD SHARIFF, PhD

Professor and Dean
School of Graduate Studies
Universiti Putra Malaysia

Date: 10 June 2021

TABLE OF CONTENTS

	Page
ABSTRACT	i
ABSTRAK	iii
ACKNOWLEDGEMENTS	v
APPROVAL	vi
DECLARATION	viii
LIST OF TABLES	xiii
LIST OF FIGURES	xv
LIST OF ABBREVIATIONS	xvi
CHAPTER	
1	
INTRODUCTION	
1.1 Background of the Study	1
1.2 Statement of Problem	5
1.3 Significant of the Study	8
1.4 Research Questions	9
1.5 Objective of the Study	9
1.5.1 General Objective	10
1.5.2 Specific Objectives	10
1.6 Hypotheses of the Study	10
1.7 Theoretical Background of the Study	11
1.7.1 Bronfenbrenner's ecological theory and Ecological Techno-Subsystem theory	11
1.7.2 Vygotsky's sociocultural theory of learning	14
1.7.3 Gardner's Multiple Intelligence theory	15
1.8 Conceptual Framework of the Study	15
1.9 Definition of Terminology	17
1.9.1 Preschool Children	17
1.9.2 Screen Time	18
1.9.3 Playfulness	18
1.9.4 Parental Monitoring	18
1.9.5 Emotional Intelligence	19
1.10 Chapter Summary	19
2	
LITERATURE REVIEW	
2.1 Introduction	20
2.2 Emotional Intelligence in Children	20
2.3 Screen Time in Young Children	21
2.4 Playfulness	23
2.5 Child's Characteristics, Mother's Characteristics, Family Characteristics with Emotional Intelligence	24

2.6	Screen Time and Emotional Intelligence	25
2.7	Playfulness and Emotional Intelligence	27
2.8	Parental Monitoring as Moderator	29
2.8.1	Parental Monitoring as Moderator between Screen Time and Emotional Intelligence	29
2.8.2	Parental monitoring as Moderator between Playfulness and Emotional Intelligence	32
2.9	Child's Sex as Moderator	33
2.9.1	Child's Sex as Moderator between Screen Time and Emotional Intelligence	33
2.9.2	Child's Sex as Moderator between Playfulness and Emotional Intelligence	35
2.10	Research Gaps	36
2.11	Chapter Summary	39
3	MATERIALS AND METHODS / METHODOLOGY	
3.1	Introduction	41
3.2	Research Design	41
3.3	Location of the Study	41
3.4	Population and Sampling	43
3.4.1	Population Characteristics	43
3.4.2	Sampling Procedure	44
3.5	Sample Size	48
3.6	Data Collection	50
3.7	Measurements	51
3.7.1	Screen Time	52
3.7.2	Playfulness	54
3.7.3	Parental Monitoring	56
3.7.4	Emotional Intelligence	57
3.7.5	Translation	58
3.8	Pilot Test	59
3.9	Reliability and Validity	60
3.9.1	Reliability	60
3.9.2	Validity	62
3.10	Data Analysis	64
3.10.1	Exploratory Data Analysis	64
3.10.2	Descriptive Statistical Analysis	70
3.10.3	Inferential Analysis	70
3.11	Chapter Summary	71
4	RESULTS AND DISCUSSION	
4.1	Descriptive Statistics	72
4.1.1	Mother's Characteristics	72
4.1.2	Child's Characteristics	73
4.1.3	Family's Characteristics	74
4.1.4	Patterns of Screen Time,	75

	Playfulness, Parental Monitoring and Emotional Intelligence	
4.2	Inferential Statistics	77
4.2.1	Pearson Correlation Analysis	77
4.2.2	Relationship between Screen Time, Playfulness, Parental Monitoring and Emotional Intelligence	78
4.3	Multiple Regression Analysis	81
4.3.1	The Predictors of Child's Emotional Intelligence	84
4.4	Hierarchical Multiple Regression Analysis	85
4.4.1	Parental Monitoring as Moderator between Playfulness and Emotional Intelligence	87
4.4.2	Child's Sex as Moderator between Playfulness and Emotional Intelligence	89
4.4.3	Parental Monitoring and Child's Sex between Screen Time and Emotional Intelligence	90
4.5	Summary of the Results	90
5	SUMMARY, CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH	
5.1	Summary of the Findings	92
5.1.1	Objective 1	93
5.1.2	Objective 2	93
5.1.3	Objective 3	93
5.1.4	Objective 4	94
5.1.5	Objective 5	94
5.1.6	Objective 6	94
5.2	Conclusion	95
5.3	Implications of the Findings	97
5.3.1	Theoretical Implications	97
5.3.2	Practice and Policy Implications	98
5.4	Limitations of the Study	100
5.5	Recommendations for Future Research	101
5.6	Chapter Summary	102
	REFERENCES	103
	APPENDICES	120
	BIODATA OF STUDENT	155
	LIST OF PUBLICATIONS	156

LIST OF TABLES

Table		Page
3.1	Number of preschool children in selected private preschools	47
3.2	Sample size calculated for different confidence level and precision	49
3.3	Subscales and items in STQ revised version	52
3.4	Range of category by three sigma rule	54
3.5	Classification for STQ	54
3.6	Factors and items in CBI	55
3.7	Aspects and items in Adult Involvement in Media (AIM) scale parent version	56
3.8	Classification for AIM scale	57
3.9	Factors and items in Parents Rating Scales of Emotional Intelligence	58
3.10	Reliability coefficients of instruments for pilot test	60
3.11	Reliability coefficients of instruments for actual study	61
3.12	Skewness and Kurtosis of Study Variables	69
4.1	Mother's characteristics (N= 217)	73
4.2	Child's characteristics (N= 217)	74
4.3	Family characteristics (N= 217)	75
4.4	Patterns of Screen Time, Playfulness, Parental Monitoring and Emotional Intelligence (N= 217)	76
4.5	Correlations between Mother's Characteristics, Child's Characteristics and Family Characteristics with Emotional Intelligence	78
4.6	Pearson correlation between study variables	79

4.7	Correlations between Subscales of Screen Time, Playfulness and Parental Monitoring with Emotional Intelligence	80
4.8	Result of Multiple Regression Analysis on the Predictor of Emotional Intelligence	85
4.9	Relationship between Playfulness and Emotional Intelligence moderate by Parental Monitoring	87
4.10	Relationship between Playfulness and Emotional Intelligence moderate by Child's Sex	89
4.11	Summary of findings	91



LIST OF FIGURES

Figure		Page
1.1	Framework: Screen time, playfulness, parental monitoring and emotional intelligence among Chinese preschool aged children	16
3.1	Proportionate stratified random sampling procedure among six private preschools	46
3.2	Proportionate stratified random sampling procedure	47
3.3	P-P plot of screen time	65
3.4	P-P plot of playfulness	66
3.5	P-P plot of parental monitoring	66
3.6	P-P plot of emotional intelligence	67
3.7	Normal distribution of screen time	67
3.8	Normal distribution of playfulness	68
3.9	Normal distribution of parental monitoring	68
3.10	Normal distribution of EI	69
4.1	Plots of predicted values of DV against regression standardized residuals	82
4.2	P-P plot of predicted values of DV against regression standardized residuals	83
4.3	Histogram of standardized residual for checking outliers	84
4.4	Moderation model	85
4.5	The moderation effect of parental monitoring	88

LIST OF ABBREVIATIONS

EI	Emotional Intelligence
IQ	Intelligence Quotient
KPSK	National Pre-School Curriculum Standard
SEA	Southeast Asia
MOE	Ministry of Education
STQ	Screen Time Questionnaire
CBI	Child Behavior Inventory of Playfulness
AIM	Adult Involvement in Media Scale
AAP	American Academy of Pediatrics
Gene-A	Alpha Generation
UNCRC	United Nations Convention on the Rights of the Child
SES	Socio-Economic Status
MVPA	Moderately-to-Vigorously Physically Active
AIM-P	Adult Involvement in Media Scale parent version
UNESCO	United Nations Educational Scientific and Cultural Organization
KL	Kuala Lumpur
MCMC	Malaysian Communications and Multimedia Commission
TV	Television
SRS	Simple Random Sampling
JKEUPM	Jawatankuasa Etika Universiti Putra Malaysia
WHO	World Health Organization
CALC	Centre for the Advancement of Language Competence

UPM	Universiti Putra Malaysia
BSQ	Behavioral Style Questionnaire
EISC	Emotional Intelligence Scale for Children
PDT	Parent Development Theory
SPSS	Statistical Package for Social Science
EDA	Exploratory Data Analysis
VIF	Variance inflation factors
r	Pearson Correlation Coefficient
R	Multiple Regression
M	Means
SD	Standard Deviation
EST	Child Entertainment Screen Time
CST	Child Calming Screen Time
GST	Child General Screen Time
CV	Coviewing
LOA	Limits On Amount
LOC	Limits On Content
AM	Active Mediation
R_1	Recognition
R_2	Response
CDF	Cumulative Distribution Function

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Nowadays, Emotional intelligence (EI) is emerging as a relatively important and growing area of behavioural investigation in education, psychology, learning and development to have more in-depth study in order to understand the nature of the emotional intelligence construct due to the increasingly recognize of the importance of emotions (Serrat, 2017; Zeidner, Matthews, Roberts & MacCann, 2003; Zeidner, Roberts & Matthews, 2002; Mayer, Caruso & Salovey, 2000; Sullivan, 1999). From past to present, emotional intelligence is generally seen as an egalitarian form of intelligence if compared to traditional IQ and as a general umbrella term for various levels of ability (Zeidner et al., 2003; Mayer et al., 2000). The concept of emotional intelligence was first introduced by Salovey and Mayer (1990). When defining emotional intelligence, there is a great diversity of theories and hence it has no single and specific definition (Zeidner et al., 2003). Emotional intelligence was also defined as a set of abilities that included recognizing, perceiving, understanding, generating, regulating and managing the emotions of the self and others in order to adapt and deal with external and internal stress (Reker, 2003; Sullivan, 1999; Baron, 1997).

The key constructs of emotional intelligence should be recognized and studied in children (Scharfe, 2000). In four-branch model (Mayer et al., 2000), one of the factors which was emotion understanding become better in three and four years old children but pre-schoolers have difficulties in understanding mixed and complex emotions. For emotion management and regulation, pre-schoolers would apply simple rules for feeling and emotion display while differing in how easily they learnt those regulative strategies during socialization (Zeidner et al., 2003; Mayer et al., 2000; Denham, 1998).

Furthermore, many past researches had addressed individual differences when discussing about emotional intelligence. It was because long tradition among clinicians found out that people showed differences in the capacity of understanding or expressing emotions and such differences may be rooted in skills that were able to be learnt and hence affect their mental health indirectly (Salovey & Mayer, 1990). This can be supported by some researchers who highlighted the relationship between emotional intelligence and individual differences in emotional function in children and also realized that individual differences like biological and constitutional factors affect the development of emotional intelligence (Zeidner et al., 2003; Saarni, 2000; Scharfe, 2000). Moreover, the expectations of society and parents were different in terms of

children's sexuality and culturally, and hence emotional intelligence was associated meaningfully with gender differences (Naghavi & Redzuan, 2011).

In Malaysia, formal education begins as early as at the age of four years old and hence it is the starting age to study in the preschool. Preschools provide early child education program for children age four to six years old (MyGovernment, 2019; Mustafa & Azman, 2013; Curriculum Development Centre, 2007). However, this is not obligatory education. Nevertheless, majority of children in Malaysia begin their preschool education formally below six years of age as preparation to enter the elementary school. Therefore, private kindergartens or preschools in Malaysia provide various approaches in learning for children aged four to six years and they are required to use the National Preschool Curriculum as stipulated in the National Education Act 1996 (MyGovernment, 2019; Mustafa & Azman, 2013; Curriculum Development Centre, 2007). Both of the government and private preschools have similar purposes, which are the curriculum emphasize on communication skills, social skills and other skills, and it prepares children to enter the elementary schools with primary education system (Curriculum Development Centre, 2007). In Malaysia, although government preschools provide free charges or less fees if compared with private preschools, however, Malaysian parents are more likely and opting to send their kids for private education and register their children at private preschools and this trend is emerging now (CR, 2015; Mustafa & Azman, 2013; Curriculum Development Centre, 2007).

Moreover, there were several reasons of focusing preschool-aged children in this research. Firstly, some previous researches have recognized there were developmental differences between preschool and later childhood (Kostyrka-Allchorne, Cooper & Simpson, 2017; Hamilton, Spinks, White, Kavanagh & Walsh, 2016). For instance, in the early stage of age were the formation of personality and emotional aspects of enhancement which were the main aspects in their development (Fadzil et al., 2016). Therefore, this statement could be supported by TV-based data which have revealed that a child's earliest screen time can be formative (Kostyrka-Allchorne et al., 2017; Hamilton et al., 2016). It was similar with other researchers who mentioned preschool-aged children may be habit-forming if they have higher screen time, and early overexposure to the electronic devices increased the likelihood of overuse in later life (Hamilton et al., 2016; Duch, Fisher, Ensari & Harrington, 2013). Hence, many preschool-aged children accumulated screen time at home and also in child care or preschools via using a variety of screens devices (Common Sense Media, 2013; Duch et al., 2013). There were many past researches have shown and proved that excessive use of electronic devices and higher levels of screen time would bring negative effects to their emotional intelligence (Hosokawa & Katsura, 2018; Verroulx, 2018; Rikkers, Lawrence, Hafekost & Zubrick, 2016). Secondly, emotional intelligence is not given attention in the preschool educational context in Malaysia, especially in private educational settings (Rohaizad, Kosnin & Khan, 2017; Yunus, 2013; National Pre-School Curriculum Standard, 2010; Curriculum Development Centre, 2007). Thirdly, preschool children nowadays spend an average of two-hours daily using screens (Chaput et al., 2017). Therefore, this study would like

to focus only on the preschool-aged children in Malaysia which are from four to six years old.

In preschools under the supervision of the Ministry of Education (MOE) in Malaysia, emotional intelligence is not given enough attention and emphasis (Rohaizad et al., 2017). It could be supported by a previous study which found that majority of preschool children in southern part of west Malaysia were weak in mastering the elements of emotional intelligence (Rohaizad, Kosnin & Nora, 2012). Therefore, the government has started to emphasize the importance of EI by trying to create a balanced and harmonious kid and aiming to develop the potential of children at the of age four to six years in the physical, emotional, spiritual, intellectual and social (Rohaizad & Kosnin, 2014; National Pre-School Curriculum Standard, 2010). National Pre-School Curriculum Standard (KSPK) (2010) and the revised KSPK (2017) included emotion as one of the domains of learning of the kindergarten curriculum in Malaysia. KSPK (2017) mentioned that the self-help skills should emphasize the development of socio-emotions.

If preschool children showed deficits in emotional intelligence, many problems in adjustment may arise and their lives were insufficiently rewarded and hence they would regulate their emotions in alienating ways or take drastic actions to escape from problems (Rohaizad & Kosnin, 2014; Salovey & Mayer, 1990; Skinner, 1986). For instance, preschool children who were not able to recognize emotions in others always made friends to feel badly and hence may be perceived as dull-witted and ultimately be rejected. They might be unable to plan lives that could fulfil them emotionally and these planning deficits may lead them to live with depression or even suicidal ideation (Salovey & Mayer, 1990). In addition, preschool-aged children with lower emotional intelligence tend to involve in the future truancy, drug abuse, and become lawlessness if early mediation techniques like parental monitoring are absent (Carlson, Tiret, Bender & Benson, 2011). Thus, emotional intelligence is an important element to study and emphasized among preschool children.

In this contemporary time, electronic devices have become common and hence it is undeniable that the usage time or screen time of electronic devices among children is gradually increasing because they have more opportunities to use it in anywhere and anytime if compared to the last time. Screen time is defined as the total time spent by using smartphones, tablets, computers or handled devices in anywhere and they were available all hours (Olszewski, 2015).

Hosokawa and Katsura (2018) mentioned that child target users of mobile devices are becoming younger nowadays and there is a changing in today's technology driven world, from traditional media like television and video games to new media like home computers, mobile devices such as smartphones and digital tablets. Hence, this shows that media become a dominant part in children's lives gradually and hence children might have lessened time to play if they always use electronic devices. In fact, playing games was important for children's learning and with the aid of nowadays electronic devices or

technologies like smart phone, the digitally minded kids have better play environments (Genc, 2014). Thus, child's play and playfulness in this new era is not similar again with the more traditional methods of play in last time.

Play meant any activity that is personally directed by the child and it is freely chosen and intrinsically motivated (Korkmaz, 2017). The impulse to play among children was innate and hence playing and playfulness were important and they are essential elements of childhood that supported their development like emotional (Hosokawa & Katsura, 2018; Wilson, 2010). However, there were some studies showed that high level of electronic devices usage or screen time will affect the development of emotional intelligence and children who spent more time in front of screens would have emotional distress and poor emotional connections with peers and family members (Verroulx, 2018) whereas playfulness was proved to be related with children's emotional intelligence and play was a good way for children to express themselves, communicate their feelings and thoughts, integrate and practice their learning about emotional and hence it had been proved could promote emotional intelligence in children (Christian, 2012). Therefore, the imbalance of using electronic device or screen time and play time will cause effects to children's emotional intelligence. Nevertheless, the effects of screen time to emotional intelligence are depended on how the children use it. For instance, the quantity of usage time and the quality of screen time would affect child development like their emotional intelligence (Hosokawa & Katsura, 2018). However, not all the parents aware of how to choose the right electronic devices, apps, or set the duration of using electronic devices for their kids (Fadzil, Abdullah & Salleh, 2016).

Moreover, the current issue and major problem is families in Asia less in monitoring children's screen time. The past research showed that Malaysia has a small but the highest percentage which was 5% of parents who did not monitor at all when their kids were using devices if compared to the other South East Asia countries (Mirchandani Unantenne, Mittal & Siew-Steven, 2014). Besides, 98 % of parents in Southeast Asia allowed their children of aged between three and eight years old to use electronic devices (Mirchandani et al., 2014). Furthermore, the Women, Family and Community Development Ministry in Malaysia said through a survey of 1165 parents who attended programmes organised by the 1 Malaysia National Family Month in November, there was only 24% of parents check their children aged between three and 17 about their gadget content and it was surprisingly around 80% of parents allowed their children to own gadgets (Mallow, 2018). There is a fact that parents in this new era would use electronic device as the medium to make their kids under control even though some parents realized the negative effects of the usage of smart phones to their preschool children but they did not take any preventive measures (Fadzil et al., 2016; Genc, 2014). Hence, interaction between parents and children has some big changes in today digital world and the use of electronic devices has become one of the main issues for parent-child conflicts (Shuo, 2018).

Besides, parental monitoring is important because caregiver-infant interaction, the quality of early attachment between child and parents, modelling, reinforcement, feedback and parental socialization practices would have effect in the development of children's emotional intelligence (Zeidner et al., 2003; Zeidner et al., 2002; Saarni, 1999, 2000; Salovey & Sluyter, 1997). Children would learn to understand, comprehend, express and regulate emotions by exchanging their emotions with parents (Naghavi & Redzuan, 2011). Parental monitoring was normally based on parents' attitudes towards screen time and it could be described as the parent's actions in protecting, supervising and checking their kids when they are using electronic devices and after using it (Nikken & Schols, 2015; Livingstone & Helsper, 2008).

If preschool children spent more high-quality time with their parents in joint activities like playing together or co-viewing electronic devices, they would have fewer emotional problems (Galboda-Liyanage, Prince, & Scott, 2003) and hence it might contribute to high level of emotional intelligence because there was a statistic showed that electronic device use and screen time during early childhood for more than two hours per day would cause increased behavioral problems, fewer verbal and nonverbal interactions between parents and children dyad (Bozzola et al., 2018). Hence, interactions and playing help to build more connections between parents and children rather than using electronic devices (Bozzola et al., 2018). Therefore, there is an emerging problem among children related to an abuse of electronic device usage and hence the right balance between screen time like using electronic device and physical activity such as playing should be obtained (Bozzola et al., 2018; DeShetler, 2014) since it could affect children's emotional intelligence. Thus, parental monitoring is important in order to achieve the balance between screen time and play among children.

In summary, a good understanding of the importance of play, playfulness and negative effects of screen time to children's EI are important. As mentioned earlier, EI is a key in leading individuals to succeed in their lives and avoid involving in negative activities. Hence, emotional intelligence should be emphasised among children beginning from the kindergarten level. There are many factors that influence children's EI. However, the present study only focuses on the current issue which is screen time, playfulness and parental monitoring associated with emotional intelligence among preschool-aged children with different sex.

1.2 Statement of Problem

Generally, statement of problem is a section for researchers to answer some specific questions such as the purposes and objectives of the study, the research questions, and cases that could be applied from the results gained through the study in the statement of problem (O'Sullivan, Berner, Taliaferro, & Rassel, 2016).

In Malaysia, the preschool program was less emphasizing on emotional development and EI (Rohaizad et al., 2017), especially private preschools (Mustafa & Azman, 2013). Thus, the latest KPSK (2017) has started to highlight emotional intelligence and socio-emotional of preschool children. Therefore, EI is an important element and variable that should be emphasized in the research. Nowadays, many children always access to their own or shared family electronic devices or parent-owned devices and this statement could be proved by showing quantitative evidence regarding electronic device use among children in Southeast Asia (SEA), which is 98% of parents in SEA allow their kids to use electronic devices despite common perceptions that prolonged usage of devices would have negative effects on children's development (Mirchandani et al., 2014). According to Malaysian Communications and Multimedia Commission (2017), 3.9% of preschool children in Malaysia have smartphone. Thus, this is the current issue that should be investigated to study its effects on preschool-aged children.

However, there is still very little research on the impact of screen time of children because electronic devices are newly emerging in this era. Most of the previous researches were likely to examine the effects of the traditional devices or media like television, computers and video games on children's development but not included the modern electronic devices like smart phone and tablets (Hosokawa & Katsura, 2018). Those modern and new technologies are eventually become an essential part in children's and parents' lives. However, the prior literature did not reveal much the effects of new and modern electronic device use like smartphones and tablets by children and its impacts on children's emotional intelligence, and hence there is still limited evidence on the impact of modern electronic device use (Hosokawa & Katsura, 2018). In fact, excessive screen time like using tablets and smartphone would affect children's development on some degrees (Hosokawa & Katsura, 2018). Therefore, the present study is trying to extend past literature by investigating the effects of screen time including the time spent in modern technologies like smartphone and tablets on children's emotional intelligence.

Besides, there was lack of research focused on the preschool-aged children when investigating the relationship between screen time and emotional intelligence because most of them were conducted by focusing on infant or middle-aged children as their target sample. This could be supported by Topper (2017) who mentioned that there was only a small percentage of studies on electronic devices had been conducted with early and middle childhood children. There were a lot of articles and researches conducted in Western countries but lack of research discussed about the preschool-aged children in Malaysia context when investigating about the relationships, and hence the findings cannot be generalised to the population in South Eastern countries. Although children nowadays expose frequently to the electronic devices at a younger age and in more diverse ways, however, its impact on the emotional intelligence of children is relatively unknown because this is only the first generation of children growing up with electronic devices from birth (Radesky et al., 2015). Hence, preschool-aged children's interactions with new technology like electronic devices and their development through the usage of devices

should be studied. Thus, there is an urgent need for addressing the relationship between screen time, playfulness and emotional intelligence on preschool-aged children between four and six years old in Malaysia.

Moreover, nowadays, the methods or the types of children's play become different if compared with last time. Childhood in this new generation and play environments are accompanied with more high advanced technology and less interaction with peers and natural environment (Loukatari, Matsouka, Papadimitriou, Nani & Grammatikopoulos, 2019). Playing is extremely important for children because they learnt and developed through playing (Loukatari et al., 2019). Hence, play nowadays is drawn from more traditional play methods and changes in children's play and playfulness happen. These changing would affect their play outcomes and playfulness to their development such as emotional intelligence and making connections to real life (Loukatari et al., 2019). Therefore, it is possible to believe that negative effects of screen time on children's EI could be overcome if they have balance time spent in playing and using devices. Thus, study about the relations between the current play of children and their playfulness with emotional intelligence is needed in order to fill the gap in previous studies by exploring the relationships.

In addition, it is undeniable that parents play an important role in monitoring and regulating screen time among their kids to ensure it is being used in an appropriate and meaningful way (Topper, 2017; Radesky, Peacock-Chambers, Zuckerman & Silverstein, 2016). Thus, parental monitoring could be a contributing factor in affecting the relationship between screen time, playfulness and emotional intelligence among preschool-aged children. However, research less focused on how parental monitoring could act as a possible moderator in these relationships. Hence, the role of parental monitoring, in assisting or diminishing emotional intelligence, has yet to be determined due to the reason that limited research in the field of emotional intelligence and parenting has been done (Alegre, 2012). Thus, the association between screen time, playfulness and emotional intelligence being moderated by parental monitoring still remains unexplored. Besides, there is lack information on the role of child's sex in relationships. Little study had considered whether males and females differ in how screen time and playfulness are associated with emotional intelligence. As a result, this illustrates the need for research to further examine whether child's sex is a possible moderator when studying these relationships. Given the important role of parents on preschool-aged children's screen time, this study was designed to assess the moderation effect of parental monitoring and child's sex in the relationships between screen time, playfulness and emotional intelligence in a sample of Malaysian preschool-aged children with different genders.

Last but not least, the goal of the current study is trying to fill these existing gaps by exploring the relationships between screen time, playfulness and emotional intelligence among preschool-aged children with different sex in local context and how parental monitoring and child's sex could play their moderating roles in affecting these relations. If children abused or addicted to

electronic devices, this would influence their emotional development and indirectly cause negative effects to their emotional intelligence. However, the negative effects to their emotional intelligence might be overcome if they achieved balance time spent in playing and using electronic devices, or when parental monitoring is existed. The present study is a good resource for parents, school, community, educational department and government to be aware of this current issue and hence they could plan or design some prevention or intervention program. Therefore, this present study is important and needed to carry out by addressing all current issues and problems highlighted aforementioned.

1.3 Significance of the Study

The significance of this current study is important for several reasons. First and foremost, by going through this study, the findings might contribute to knowledge in the field of child development psychology, especially in the context of preschool children. This study is concerned on the preschool children and their emotional intelligence, which have been shown that currently less research is focused on these sample and variable.

The result of this study makes a major contribution to research on preschool children's screen time and emotional intelligence by demonstrating the relationship between these two variables. Understanding the link between screen time and emotional intelligence would provide essential practical implications for researchers and also parents or teachers. Specifically, it helps researchers, parents or teachers to consider whether screen time is harmful or helpful to their preschool kids' emotional intelligence. Thus, parents or teachers may help preschool children to use electronic device in a more suitable way in order to help them to diminish negative effects on their development or emotional intelligence.

Secondly, this study provides insight to the researchers and parents about the positive effects of play and playfulness to emotional intelligence among preschool children. Understanding the importance and benefits of play and playfulness to the development of preschool children should help researchers, practitioners, parents or teachers to prepare more chances for them to play and they could design significant play programs like play-based classroom in the future that are suitable for them with accordance to the kid's characteristics. Hence, children could gain positive developments and parents will realize that they shouldn't always use electronic devices to control their kids by occupying their time with screened media, tablets or smartphones. In sum, this study would give some insights for parents about there are necessities to maintain the balance between the usages of electronic device and play time in their preschool kids' lives.

In addition, the identification of significant moderators or predictors in this research would benefit to practitioners in designing and implementing programs and intervention or conducting further studies in preschool children. The present study examines the extent to which the relationships of this study may be moderated by child's sex and parental monitoring. In the future, researchers, teachers, parents and school authorities can increase efforts such as emphasizing parental monitoring to children during their usage time of electronic devices and helping their children to choose suitable electronic devices or applications when the findings disclose that parental monitoring is a predictor of emotional intelligence.

Moreover, the outcome in this study also contributes to the research literature for future use and could be used as a reference for further studies in relevant topics. The result of the study gives valuable information on the relationships between screen time, playfulness and emotional intelligence among preschool children, with child's sex as and also parental monitoring as potential moderators in these relationships. Further, the findings from this study may provide a breakthrough for future research and government to develop programme for preschool children and play-based classroom or play-based environment at home which are suitable with their kids' characteristics and with the balance of screen time in order to improve their emotional intelligence by considering all of these variables and moderators in this study.

1.4 Research Question(s)

This study was trying to answer the following specific research questions:

1. Is there any significant relationship between screen time, playfulness, parental monitoring and emotional intelligence among Chinese preschool children?
2. Are there any unique predictors of emotional intelligence among Chinese preschool children ?
3. Does parental monitoring moderate the relationship between screen time, playfulness and emotional intelligence among Chinese preschool children?
4. Does child's sex moderate the relationship between screen time, playfulness and emotional intelligence among Chinese preschool children?

1.5 Objectives of the Study

In this section, the general objective and specific objectives of the study would be discussed.

1.5.1 General Objective

The general objective was to determine the relationships between screen time, playfulness and emotional intelligence among Chinese preschool children, and also the roles of parental monitoring and child's sex as moderators on these relationships.

1.5.2 Specific Objectives

1. To describe mother characteristics (age, years of education and employment status), child's characteristics (age and sex), family characteristics (family total monthly income, number of children), screen time, playfulness, parental monitoring and emotional intelligence among Chinese preschool children.
2. To identify the relationship between mother characteristics (age and years of education), child characteristics (sex and age), family characteristic (number of children and family monthly income) with emotional intelligence.
3. To determine the relationships between screen time, playfulness, parental monitoring and emotional intelligence among Chinese preschool children.
4. To determine the unique predictors of emotional intelligence among Chinese preschool children.
5. To determine the moderating effect of parental monitoring on the relationships between screen time, playfulness and emotional intelligence among Chinese preschool children.
6. To determine the moderating effect of child's sex on the relations between screen time, playfulness and emotional intelligence among Chinese preschool children.

1.6 Hypotheses of the Study

There were several alternative hypotheses (H_a) stated in this study in line with specific objectives (objective 3, 4, 5 and 6):

Objective 3: To determine the relationships between screen time, playfulness, parental monitoring and emotional intelligence among Chinese preschool children.

H_{a1} : There is significant relationship between screen time and emotional intelligence among Chinese preschool children.

H_{a2} : There is significant relationship between playfulness and emotional intelligence among Chinese preschool children.

H_{a3} : There is significant relationship between parental monitoring and emotional intelligence among Chinese preschool children.

Objective 4: To determine the unique predictors of emotional intelligence among Chinese preschool children.

Ha4 : Mother's characteristics (years of education), screen time, playfulness and parental monitoring significantly predict emotional intelligence.

Objective 5: To determine the moderating effect of parental monitoring on the relationship between screen time, playfulness and emotional intelligence among Chinese preschool children.

Ha5 : There is moderating effect of parental monitoring among Chinese preschool children on the relationship of screen time and emotional intelligence.

Ha6 : There is moderating effect of parental monitoring among Chinese preschool children on the relationship of playfulness and emotional intelligence.

Objective 6: To determine the moderating effect of child's sex on the relations between screen time, playfulness and emotional intelligence among Chinese preschool children.

Ha7 : There is moderating effect of child's sex among Chinese preschool children on the relationship of screen time and emotional intelligence.

Ha8 : There is moderating effect of child's sex among Chinese preschool children on the relationship of playfulness and emotional intelligence.

1.7 Theoretical Background of the Study

In explaining the relationship between electronic device usage, playfulness, parental monitoring and emotional intelligence, Bronfenbrenner's ecological theory (Bronfenbrenner, 1979) and Ecological Techno-Subsystem theory (Johnson & Ptoplampu, 2008), Vygotsky's sociocultural theory of learning (1978) and Gardner's Multiple Intelligence Theory (1983) could be applied in this study to support the theoretical and conceptual framework.

1.7.1 Bronfenbrenner's Ecological Theory and Ecological Techno Subsystem Theory

These theories helped to explain the relationship between screen time, playfulness and emotional intelligence, and also the roles of parental monitoring and child's sex. Bronfenbrenner's ecological theory described that people constantly interact and always adjust with the environment and hence human development should be studied within settings and contexts (Bronfenbrenner, 1979). According to this theory, children's development occurs through frequent and reciprocal interactions between the child with an immediate environment, and these frequent interactions must occur for a period of time to shape development (Boyd & Bee, 2014; Bronfenbrenner & Morris, 1998). Therefore, in this era, this theory could be applied to explain that children's development is taking place through their frequent and repeated interactions with ever-present screened media or electronic devices like smartphones or tablets. It is supported by Techno-Subsystem theory (Johnson & Ptoplampu, 2008) which mentioned that the immediate environment nowadays with the presence of cell phone, portable audio devices, Internet,

computers, portable video devices and television would affect their developments. Thus, children's screen time may influence some aspect of their development, such as emotional. In sum, according to this theory, children's development is taking place through their frequent and repeated interactions with the using of devices. Therefore, it should be considered that children's use and parent-child co-use of electronic devices influence some aspect of development.

In these theories, Bronfenbrenner (1979) and Johnson and Pupilampu (2008) mentioned there are five ecological systems to explain the individual's interactions with the environment, which are microsystem, mesosystem, exosystem, macrosystem and chronological system whilst microsystem, mesosystem and exosystem could be used to explain and support the parental monitoring in this study. Macrosystem could help in explaining both potential moderators which are child's sex and parental monitoring. Microsystem is the first layer that consists activities, social roles and interpersonal relations in face-to-face interaction and exposed directly. This setting directly influences children through their immediate participation in home, and parents, caregivers, teachers or peers are within this subsystem. Thus, parents play an important role to guide their preschool children in playing and their screen time because it might affect their emotional intelligence. This could be supported by Alegre (2012) who mentioned that parenting practices could predict children's emotional intelligence.

Next, the second layer is mesosystem which refers to the interrelationship of the child's microsystem. According to Bronfenbrenner (1979) and Johnson and Pupilampu (2008), the mesosystem is composed of a network of the relationships between the various interacting factors. Co-use of electronic devices and co-play between parents and children, and playing between children and peers are good examples.

The third layer is exosystem and it refers to the social setting, like institutions of culture that affect children's development indirectly (Boyd & Bee, 2014). The setting of his or her surrounding would affect their development and hence the effects of this layer are impersonal and indirect. The exosystem consists of a broad belief system, value and institutional pattern that are provided by individuals with different backgrounds in the social setting (Johnson & Pupilampu, 2008; Bronfenbrenner, 1979). They do not have direct interaction with the children, but are able to influence their emotional development and emotional intelligence indirectly. For instance, family influences like parents' working hours, total monthly income and mother's years of education. These social settings seem like do not participate and affect children's emotional intelligence level directly, but of all these social settings influence the parent-child interactions and relationships like co-using electronic devices at home, parental monitoring in children's screen time, parent-child co-play, and the balance of time in using electronic devices and play, further, affecting children's emotional intelligence indirectly.

Next, the macrosystem involves the belief and values of the culture in which the child lives. Parents' beliefs and parental monitoring might be affected by the cultural values, customs, and principles. Thus, children may be affected by their parents' beliefs and cultural traditions practiced by their family (Johnson & Pupilampu, 2008; Bronfenbrenner, 1979). For instance, parents' attitudes, beliefs and control towards screen time and playfulness of their children in different genders, and also parents' beliefs towards the importance of childhood play and playfulness might affect their emotional intelligence. Hence, parental monitoring would be influenced by parents' own values about the importance of play and playfulness to their preschool children and the importance of limiting or controlling the use of electronic device to their kids. Besides, there were previous studies showed that parents had different beliefs and attitudes towards monitoring their son's and daughter's time of usage of electronic devices (Gentile et al., 2012). Moreover, culturally, some researches revealed there were gender differences in child's play and playfulness, screen time and emotional intelligence (Reimers et al., 2018; Thomory & Mykhailovska, 2016; Mirchandani et al., 2014; Besenyi, Kaczynski, Stanis & Vaughan, 2013; Gentile et al., 2012; Bailey, 2011; Onchwari & Keengwe, 2011; Hay, 2007; Zachopoulou, Trevlas & Tsirikiki, 2004; Tallandini, 2004; Lindsey & Colwell, 2003).

The last layer is chronological system which is termed by historical and chronological context. According to Bronfenbrenner (1979), the environment is ever-changing indeed. Hence, the changes in life such as the birth of a sibling, the beginning of school, moving to a new living environment or school, and parents' marital relationship could be caused some effects on the children's development (Bronfenbrenner, 1979), such as affect their emotional intelligence levels. For instance, if the child moves to a new school or new living place, he or she might need some time to adapt to the new environment and build new relationships with the teachers and friends in the new school or with the new neighbours. Besides, according to Techno-Subsystem theory (Johnson & Pupilampu, 2008), the immediate environment nowadays with the availability of smartphones, computers and other electronic devices would affect children's development like emotional. Thus, the changing of traditional media like video games and television to new modern media like smartphone and tablets nowadays, and also the traditional play like playing congkak and guli to modern play types in the new era like playing VR games might bring some effects to the children's emotional intelligence level. In sum, all of these new conditions or circumstances in new environments will affect children's emotional intelligence.

According to Bronfenbrenner (1979) and Johnson and Pupilampu (2008), children would interact actively within these environmental changing contexts. Each context may affect the child's perspective, thought and behaviour which might cause some impacts to their emotional development and emotional intelligence in life. In this study, the first four layers of systems which were microsystem, exosystem, mesosystem and macrosystem would be focused on in order to reach the objectives of the research. These four systems would help to examine the relationships between screen time, playfulness, parental

monitoring and emotional intelligence among preschool children and also investigate the moderating roles of parental monitoring and child's sex in these relationships.

1.7.2 Vygotsky's Sociocultural Theory of Learning

This sociocultural theory of learning could be applied in explaining the role of parental monitoring in the relationship between screen time, playfulness and emotional intelligence among preschool children. According to Vygotsky (1978), scaffolding is a process when in the presence of the guidance of adults or older siblings, children learn new cognitive skills and those adults or siblings structure the child's learning experience.

Adults play an important role in order to create an appropriate scaffold for children. The adult must model the best strategy and adapt the whole process to the child's developmental level, or called as zone of proximal development (Rogoff, 1990). According to Vygotsky (1978), zone of proximal development (ZPD) described the distance between a task that a child can do independently and a task that a child can master through play or with the help of adults, older siblings or more competent peers because the task is too hard for the child to do alone but can manage with guidance.

According to Vygotsky (1978), when a more experienced person offers scaffolding and shows support to children in attempting to overcome those challenges beyond their current independent ability, and guiding them until children achieve mastery and autonomy, then children are living in an optimal learning environment. During parent-child joint activities like when playing together, or using electronic devices together, scaffolding happens when parents provide feedback, explanations, modelling, and answers to their questions in a sensitive and responsive manner in the interactions with children, and help them to reach mastery of challenges that children are facing (Fay-Stammach, Hawes & Meredith, 2014). It could be supported by another research which mentioned that parents and also electronic screens can both scaffold the child's development when they matched with the child's zone of proximal development (Nikken & Schols, 2015). The research indicated that when parents supported their child in using electronic devices, they adjusted the amount and type of their scaffolding activities to young children's developing media activities (Nikken & Schols, 2015). Thus, this theory helps to explain that parental monitoring should be further investigated whether it could be a potential moderating variable between electronic device usage, play and emotional intelligence.

1.7.3 Gardner's Multiple Intelligence Theory

This theory could support the dependent variable in this study, which was emotional intelligence. According to Gardner (1983), there were two forms of personal intelligence which specified as intrapersonal and interpersonal intelligence. Intrapersonal intelligence focused on the recognition and evaluation of personal feelings. Interpersonal intelligence involved the recognition and evaluation of others' feelings and actions. Besides, Gardner (1983) explained how the more advanced levels of the personal intelligences are manifested such as the ability to put internal feelings into words is considered to be high in intrapersonal intelligence.

Thus, it described the factors of emotional intelligence in this study, which was recognition factor that represented basic skills in the development of emotional intelligence, such as perception of emotions in the self and others, and also response factor which described the abilities to understand and manage emotions in the self and in others (Sullivan, 1999).

Therefore, this theory could support emotional intelligence in this study because its concepts are very important and close to the concept of emotional intelligence (Sullivan, 1999; Norboevich, 2020). The abilities and concepts highlighted in intrapersonal and interpersonal intelligence were directly related to emotional intelligence (Norboevich, 2020).

1.8 Conceptual Framework of the Study

The conceptual framework of the present study was illustrated as Figure 1.1 based on the research objectives, the Bronfenbrenner's ecological theory (Bronfenbrenner, 1979) and Ecological Techno-Subsystem theory (Johnson & Puplampu, 2008) as discussed in the theoretical perspective section.

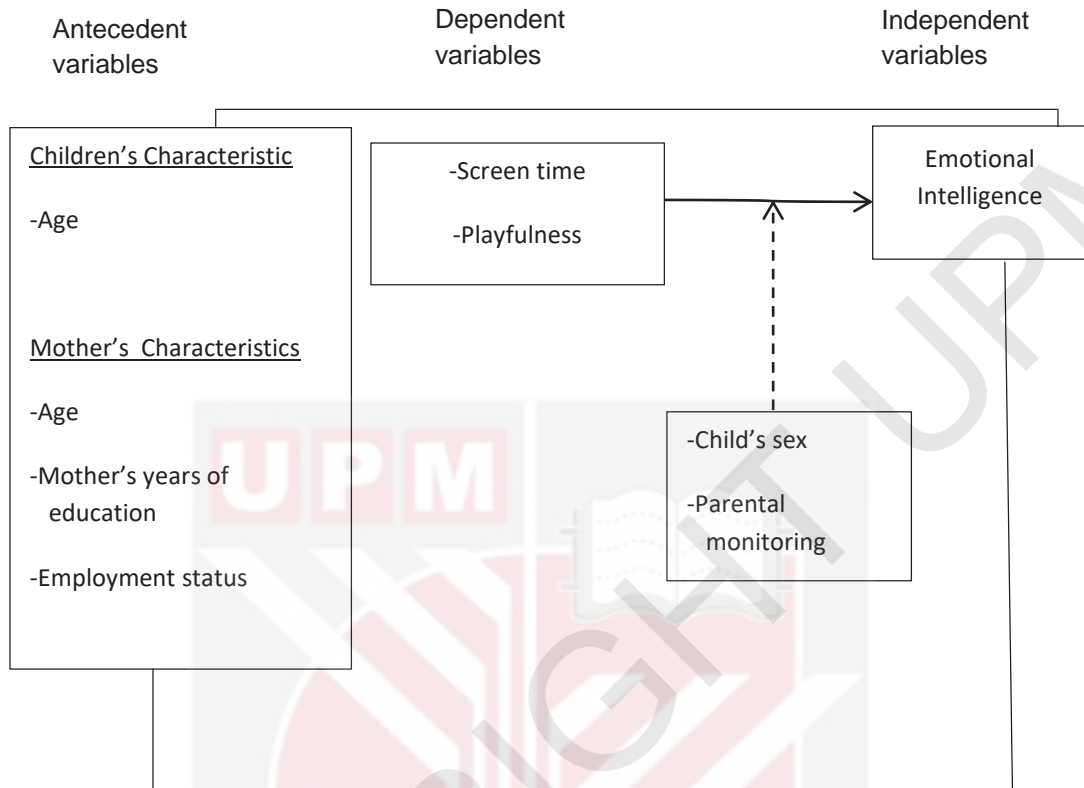


Figure 1.1: Conceptual framework: “Relationships between screen time, playfulness, parental monitoring and emotional intelligence among Chinese preschool aged children”

This study would like to describe children's characteristics, mother's characteristics, family characteristics, screen time, playfulness, parental monitoring and emotional intelligence among preschool-aged children. In this present study, electronic device usage like their screen time and playfulness were hypothesized to have significant associations with emotional intelligence among preschool-aged children. Besides, possible moderators would be child's sex and parental monitoring.

From the theoretical background, Bronfenbrenner's ecological theory and Ecological Techno-Subsystem theory explained that children's development is happened and affected by their frequent and repeated interactions with electronic devices like smartphones and tablets. Besides, four layers of the ecological system which are microsystem, mesosystem, exosystem and macrosystem could be applied to examine the relationships between screen time, playfulness, parental monitoring and emotional intelligence among preschool children.

These four systems also suggested that parental monitoring and child's sex could be possible moderators in the relationship of screen time, playfulness and emotional intelligence. Parents have their roles in guiding and providing opportunity to children to play because it might affect their emotional intelligence. This theory also explained that children may be affected by their parents' beliefs and cultural traditions practiced by their family (Bronfenbrenner, 1979) and hence parental monitoring would be influenced by parents' own values about the importance of children's playfulness and the importance of monitoring their kids in using electronic devices. Moreover, exosystem and macrosystem could help to explain that child's sex as a moderator in these relationships. Besides, Vygotsky's sociocultural theory of learning and Gardner's Multiple Intelligence theory could help to explain and support the variable of parental monitoring and emotional intelligence in this study, respectively.

In sum, the independent variables of the current study were screen time and playfulness while the dependent variable was emotional intelligence. Antecedent variables were mother's characteristics (age, years of education and employment status), child's characteristics (age) and family characteristics (total family monthly income and numbers of children). Parental monitoring and child's sex are assumed to be moderators. Hence, this study aimed to explore the relationship between screen time, playfulness and emotional intelligence among preschool-aged children and to find out the unique predictors of children's emotional intelligence. The researcher would like to test whether parental monitoring and child's sex could moderate these relationships by referring to the theories stated in the previous section.

1.9 Terminology of Definition

This section provides the conceptual and operational definitions of the variables in the study.

1.9.1 Preschool Children

Conceptual: In Malaysia, preschool children refer to children age four to six years old who receive formal education in the preschool (MyGovernment, 2019; Mustafa & Azman, 2013; Curriculum Development Centre, 2007).

Operational: Operationally, it corresponds to Chinese preschool children in private preschools from Kuala Lumpur area aged 4 to 6 years old (MyGovernment, 2019).

1.9.2 Screen Time

Conceptual: Screen time means total time spent engaged in visual or screen media activities like playing handheld devices, computers, TV and others and no longer limited to certain places only because it is available at all the time (Olszewski, 2015; Mayo Clinic, 2011).

Operational: Screen time was measured by using Screen Time Questionnaire (STQ) revised version, which is developed by Olszewski (2015). Thus, the higher the mean scores, the higher the screen time among children.

1.9.3 Playfulness

Conceptual: Playfulness is the expression of the child's drive to engage with, connect with, and explore the surrounding world freely and pleasurably (Sanderson, 2010).

Operational: Playfulness was measured by using Child Behavior Inventory of Playfulness (CBI) (Christian, 2011; Rogers, et al., 1998). If the child yields a high score on playfulness factor, it means the child indicates a playful personality disposition.

1.9.4 Parental Monitoring

Conceptual: Parental monitoring depends on parents' attitudes about media and their actions like monitoring, applying restrictions on media use, supervising the child when using electronic devices (Nikken & Schols, 2015) and checking up on the child's activity on electronic devices, covertly or overtly, after they use it (Livingstone & Helsper, 2008).

Operational: Parental monitoring of children's screen time habits was measured by using The Adult Involvement in Media Scale (AIM) (Gentile et al., 2014; Anderson, Gentile & Buckley, 2007). If the scores are higher, the parental monitoring level is higher.

1.9.5 Emotional Intelligence

Conceptual: Emotional intelligence could be referred as abilities or skills to perceive and express emotions accurately, understand and interpret emotional content, manage and regulate emotions of the self and others (Serrat, 2017; Brouzos, 2014; Reker, 2003).

Operational: Emotional intelligence was measured by the scores in Parent Rating Scales of Emotional Intelligence (Ulutas & Omeroglu, 2012; Salovey & Sluyter, 1997) based on the model of emotional intelligence abilities. If the child yields higher scores in this scale which is rated by their mother, it means that the child has higher emotional intelligence level.

1.10 Summary

This chapter explained clearly about the background of the research, problem statement, objectives, research questions, hypotheses being tested and significance of this present study. Besides, the conceptual and operational definitions of variables tested which are screen time, playfulness, emotional intelligence and parental monitoring has been discussed. Theoretical framework has been mentioned and conceptual framework is built based on the theoretical framework. This chapter attempted to give better understanding on what this research was planned to study.

REFERENCES

- Ackerman, D. J., & Friedman-Krauss, A. H. (2017). Preschoolers' executive function: Importance, contributors, research needs and assessment options. *ETS Research Report Series, 2017(1)*, 1-24.
- Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. London, United Kingdom: Sage Publications Limited.
- Alegre, A. (2011). Parenting styles and children's emotional intelligence: What do we know? *The Family Journal, 19(1)*, 56-62.
- Alegre, A. (2012, October). The relation between the time mothers and children spent together and the children's trait emotional intelligence. *In Child & Youth Care Forum, 41(5)*, 493-508. Springer US.
- American Academy of Pediatrics (1999). Committee on public education: Media education. *Pediatrics, 4* (2-1), 341-343.
- American Academy of Pediatrics (2016). *Media and Young Minds*. Retrieved from <http://pediatrics.aappublications.org/content/early/2016/10/19/peds.2016-2591#ref-24>.
- American Statistical Association. (2017). G* Power 3.1 manual. *In American Statistical Association, 76*, 1-80.
- Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2007). *Violent video game effects on children and adolescents: Theory, research, and public policy*. New York, NY: Oxford University Press.
- Ang, R. P., Chong, W. H., Chye, S., & Huan, V. S. (2012). Loneliness and generalized problematic Internet use: Parents' perceived knowledge of adolescents' online activities as a moderator. *Computers in Human Behavior, 28(4)*, 1342-1347.
- Ary, D., Jacobs, L. C., & Razavieh, A. (1996). *Introduction to research in education Orlando*. FL: Holt, Reinhart and Winston.
- Assembly, U. G. (1989). Convention on the rights of the child. *United Nations, Treaty Series, 1577(3)*.
- Bailey, A. M. (2011). *Sociodramatic play, family socioeconomic risk, and emotional competence in urban, preschool children*. Seattle, WA: Seattle Pacific University.
- Barnett, L. A. (1998). The adaptive powers of being playful. In M. C. Duncan, G. Chick, & A. Aycock (Eds.). *Play and culture studies: Diversions and divergences in fields of play* (pp. 97-119). Greenwich, CT: Ablex Publishing.

- Baron, R. (1997). *The BarOn Emotional Quotient Inventory (BarOn EQ-i)*. Toronto, ON: Multi-Health Systems Inc.
- 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.
- Besenyi, G. M., Kaczynski, A. T., Stanis, S. A. W & Vaughan, K. B. (2013). Demographic variations in observed energy expenditure across park activity areas. *Preventive Medicine*, 56(1), 79-81.
- Bickham, D. S., Vandewater, E. A., Huston, A. C., Lee, J. H., Caplovitz, A. G., & Wright, J.C. (2003). Predictors of children's electronic media use: An examination of three ethnic groups. *Media Psychology*, 5(2), 107-137.
- Blackman, A. (2015). Screen time for parents and caregivers: Parental screen distraction and parenting perceptions and beliefs (Doctoral dissertation, Pace University, New York).
- Bland, M. (2006). Mean and standard deviation. *Health Sciences M. Sc. Programmer, Applied Biostatistics*, 10.
- Boyd, D. G & Bee, H. L. (2014). *Lifespan Development* (6th ed., pp. 14-26). Harlow, United Kingdom: Pearson Education Limited.
- Bozzola, E., Spina, G., Ruggiero, M., Memo, L., Agostiniani, R., Bozzola, M., ... & Villani, A. (2018). Media devices in pre-school children: The recommendations of the Italian pediatric society. *Italian Journal of Pediatrics*, 44(1), 69.
- Braza, P., Carreras, R., Muñoz, J. M., Braza, F., Azurmendi, A., Pascual-Sagastizábal, E., ... & Sánchez-Martín, J. R. (2015). Negative maternal and paternal parenting styles as predictors of children's behavioral problems: Moderating effects of the child's sex. *Journal of Child and Family Studies*, 24(4), 847-856.
- Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American psychologist*, 34(10), 844.
- Bronfenbrenner, U., & Morris, P. (1998). The ecology of developmental processes. In *Theoretical models of human development* (5th ed.). New York, NY: Wiley.
- Brophy-Herb, H. E., Lee, R. E., Nievar, M. A., & Stollak, G. (2007). Preschoolers' social competence: Relations to family characteristics, teacher behaviors and classroom climate. *Journal of Applied Developmental Psychology*, 28(2), 134-148.

- Brouzos, A., Misailidi, P., & Hadjimattheou, A. (2014). Associations between emotional intelligence, socio-emotional adjustment, and academic achievement in childhood: The influence of age. *Canadian Journal of School Psychology, 29*(2), 83-99.
- Carlson, J. S., Tired, H. B., Bender, S. L., & Benson, L. (2011). The influence of group training in the incredible years teacher classroom management program on preschool teachers' classroom management strategies. *Journal of Applied School Psychology, 27*(2), 134-154.
- Casas, A. K. (2003). Childhood playfulness as a predictor of adult playfulness and creativity: A longitudinal study (Doctoral dissertation, Virginia Tech).
- CDC (2007). Curriculum Development Centre, Ministry of Education Malaysia (Early Childhood Care and Education Policy Implementation Review 2007).
- Chaput, J. P., Colley, R. C., Aubert, S., Carson, V., Janssen, I., Roberts, K. C., & Tremblay, M. S. (2017). Proportion of preschool-aged children meeting the Canadian 24-Hour Movement Guidelines and associations with adiposity: Results from the Canadian Health Measures Survey. *BMC Public Health, 17*(5), 147-154.
- Guidelines and associations with adiposity: results from the Canadian Health Measures Survey. *BMC Public Health, 17*(5), 829.
- Chaudron, S. (2015). Young Children (0-8) and digital technology. A qualitative exploratory study across seven countries (EUR – Scientific and Technical Research Reports). Publications Office of the EU.
- Cho, K. S., & Lee, J. M. (2017). Influence of smartphone addiction proneness of young children on problematic behaviors and emotional intelligence: Mediating self- assessment effects of parents using smartphones. *Computers in Human Behavior, 66*, 303-311.
- Christian, K. M. (2011). The construct of playfulness: Relationships with adaptive behaviors, humor, and early play ability (Doctoral dissertation, Case Western Reserve University).
- Chua, Y. P. (2011). *Kaedah Penyelidikan*. Selangor: McGraw Hill (Malaysia) Sdn. Bhd.
- Ciby, G. (2017). Application of total quality management for assessing education quality and proposing a framework for continual improvement of school education (Doctoral dissertation, Centre for Adult & Continuing Education, Pondicherry University).
- Cochran, J. A. (1963). Further formulas for calculating approximate values of the zeros of certain combinations of Bessel functions

(Correspondence). *IEEE Transactions on Microwave Theory and Techniques*, 11(6), 546-547.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. (2nd ed.). New Jersey: Lawrence Erlbaum Associates, Publishers, Hillsdale.

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

Common Sense Media. (2013). Zero to eight: Children's media use in America report. Retrieved from <http://www.commonsensemedia.org/zero-to-eight-childrens-media-use-in-america-2013>.

Conger, R. D., & Conger, K. J. (2002). Resilience in Midwestern families: Selected findings from the first decade of a prospective, longitudinal study. *Journal of marriage and family*, 64(2), 361-373.

Cordiano, T. J. S. (2009). Construct validity of the Affect In Play Scale-Brief Rating (APS- BR) (Doctoral dissertation, Case Western Reserve University).

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of applied psychology*, 78(1), 98.

CR, N. S. (2015, November 23). Are private schools better than public ones? *New Straits Times*, 13(24). Retrieved from <https://www.nst.com.my/news/2015/11/113362/are-private-schools-better-public-ones>

Crossman, A., & Cole, N. L. (2019, February 26). What Is a pilot study in research?. *In ThoughtCo*. Retrieved from <https://www.thoughtco.com/pilot-study-3026449>

Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods*, 1(1), 16.

Daoud, J. I. (2017, December). Multicollinearity and regression analysis. *In Journal of Physics: Conference Series*, 949(1).

Damanhuri, Z. (2017). Perkembangan Main Dalam Kalangan Kanak-Kanak Awal. *Jurnal Sains Sosial* Jilid, 2, 144-155.

Das, K. R., & Imon, A. H. M. R. (2016). A brief review of tests for normality. *American Journal of Theoretical and Applied Statistics*, 5(1), 5-12.

Dashti, F. A., & Yateem, A. K. (2018). Use of mobile devices: A case study with children from Kuwait and the United States. *International Journal of Early Childhood*, 50(1), 121-134.

- De Groot, A. D., & Spiekerman, J. A. (2020). *Methodology: Foundations of inference and research in the behavioral sciences* (Vol. 6). Walter de Gruyter GmbH & Co KG.
- Denham, S. A. (1998). *The Guilford series on special and emotional development. Emotional development in young children*. New York, NY: Guilford Press.
- Department of Statistics. (2020). Labor force survey. Putrajaya: Department of Statistics.
- Department of Statistics. (2018). Labor force survey. Putrajaya: Department of Statistics.
- DeShetler, L. M. (2014). A case study on how preschool children play: Comparing parental beliefs and preschoolers' home technology use (Doctoral dissertation, University of Toledo).
- Domingues-Montanari, S. (2017). Clinical and psychological effects of excessive screen time on children. *Journal of paediatrics and child health*, 53(4), 333-338.
- Duch, H., Fisher, E. M., Ensari, I., & Harrington, A. (2013). Screen time use in children under 3 years old: A systematic review of correlates. *International Journal of Behavioral Nutrition and Physical Activity*, 10(1), 102.
- Esterach, J. M. (2018). Young children's use and parent-child co-use of tablets: Investigating mobile media's effects on children's executive function (Doctoral dissertation, The University of Nebraska-Lincoln).
- Esterach, J., & Raikes, H., (2016). *The effects of screen media use and parent-child co-use on Head Start children's self-regulation*. Poster presentation at the Early Childhood National Research Conference, Washington DC.
- Fadzil, N. M., Abdullah, M. Y., & Salleh, M. A. M. (2016). The level of tolerance sanctioning children using gadgets by parents lead to nomophobia: Early age gadgets exposure. *International Journal of Arts & Sciences*, 9(2), 615.
- Fanoos, A. (2013). Examining the emotional intelligence level of students of Kohat University of Science and Technology in relation to parents' level of education. *International Journal of Academic Research in Progressive Education and Development*, 2(3).
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191.

- Fay-Stammach, T., Hawes, D. J., & Meredith, P. (2014). Parenting influences on executive function in early childhood: A review. *Child development perspectives*, 8(4), 258-264.
- Field, A. (2009). *Discovering statistics using SPSS*. Thousand Oaks, CA: Sage publications.
- Fivush, R., Brotman, M. A., Buckner, J. P., & Goodman, S. H. (2000). Gender differences in parent-child emotion narratives. *Sex Roles*, 42(3-4), 233-253.
- Flick, U. (2020). *Introducing Research Methodology: Thinking Your Way Through Your Research Project*. SAGE Publications Limited.
- Genc, Z. (2014). Parents' perceptions about the mobile technology use of preschool aged children. *Procedia-Social and Behavioral Sciences*, 146, 55-60.
- Gentile, D. A., Lynch, P. J., Linder, J. R & Walsh, D. A. (2004). The effects of violent video game habits on adolescent hostility, aggressive behaviors, and school performance. *Journal of Adolescence*, 27(1), 5-22.
- Gentile, D. A., Nathanson, A. I., Rasmussen, E. E., Reimer, R. A., & Walsh, D. A. (2012). Do you see what I see? *Parent and child reports of parental monitoring of media*. *Family Relations*, 61(3), 470-487. doi:10.1111/j.1741-3729.2012.00709.x
- Gentile, D. A., Reimer, R. A., Nathanson, A. I., Walsh, D. A., & Eisenmann, J. C. (2014). Protective effects of parental monitoring of children's media use: A prospective study. *JAMA Pediatrics*, 168(5), 479-484.
- Getting Pre-School Education. (2019, July 10). *In MyGovernment*. Retrieved from <https://www.malaysia.gov.my/portal/subcategory/98>
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.
- Hamilton, K., Spinks, T., White, K.M., Kavanagh, D.J. & Walsh, A.M. (2016). A psychosocial analysis of parents' decisions for limiting their young child's screen time: An examination of attitudes, social norms and roles, and control perceptions. *Br J Health Psychol*, 21(2), 285 -301.
- Hay, D. F. (2007). The gradual emergence of sex differences in aggression: Alternative hypotheses. *Psychological Medicine*, 37(11), 1527-1537.
- Heal, R., & Twycross, A. (2015). Validity and reliability in quantitative research. *Evidence- Based Nursing*, 66-67.
- High, R. (2000). Important factors in designing statistical power analysis studies. *Computing News, Summer issue*, 14-15.

- Hinkley, T., Brown, H., Carson, V., & Teychenne, M. (2018). Cross sectional associations of screen time and outdoor play with social skills in preschool children. *PloS One*, *13*(4), e0193700.
- Hosokawa, R., & Katsura, T. (2018). Association between mobile technology use and child adjustment in early elementary school age. *PloS One*, *13*(7), e0199959.
- Houtmeyers, K. A. (2002). *Attachment relationships and emotional intelligence in preschoolers* (Doctoral dissertation, ProQuest Information & Learning).
- Howard, J., & McInnes, K. (2013). The impact of children's perception of an activity as play rather than not play on emotional well-being. *Child: Care, Health and Development*, *39*(5), 737-742.
- Huda, M., Jasmi, K. A., Hehsan, A., Mustari, M. I., Shahrill, M., Basiron, B., & Gassama, S. K. (2017). Empowering children with adaptive technology skills: Careful engagement in the digital information age. *International Electronic Journal of Elementary Education*, *9*(3), 693-708.
- Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models*. Thousand Oaks, CA: Sage.
- laosanurak, C., Chanchalor, S., & Murphy, E. (2016). Social and emotional learning around technology in a cross-cultural, elementary classroom. *Education and Information Technologies*, *21*(6), 1639-1662.
- Ismail, Z. (2015). Kesan Pembelajaran Yang Menyeronokkan Terhadap Kesiapan Belajar Dalam Kalangan Kanak-Kanak Prasekolah. Tesis Ijazah Sarjana Pendidikan Fakulti Pendidikan Dan Pembangunan Manusia, Universiti Pendidikan Sultan Idris.
- Ismail, N. F., Hasan, M. H., & Mustapha, E. E. (2017, July). Literature review on technology usage and emotional connection among children. In *2017 International Conference on Research and Innovation in Information Systems (ICRIIS)* (pp. 1-5). IEEE.
- Jackson, S. L. (2012). *Research methods and statistics: A critical thinking approach* (4th ed.). Wadsworth Publishing.
- Jamil, A. T., Rosli, N. M., Ismail, A., Idris, I. B., & Omar, A. (2016). Prevalence and risk factors for sedentary behavior among Malaysian adults. *Malasian Journal of Public Health Medicine*, *16*(3), 147-55.
- Johnson, G., & Puplampu, K. (2008). A conceptual framework for understanding the effect of the Internet on child development: The ecological techno-subsystem. *Canadian Journal of Learning and Technology*, *34*, 19-28.

- Jones Thomory, D., & Mykhailovska, N. (2016). Mobile devices in the hands of the youngest children (Thesis, Malmö University).
- Jones, Z., & Linder, F. (2015, April). Exploratory data analysis using random forests. In Prepared for the 73rd annual MPSA conference.
- Jose, P. E. (2013). *ModGraph-I: A programme to compute cell means for the graphical display of moderational analyses*. Wellington, New Zealand: Victoria University of Wellington.
- Kabali, H. K., Irigoyen, M. M., Nunez-Davis, R., Budacki, J. G., Mohanty, S. H., Leister, K. P., & Bonner, R. L. (2015). Exposure and use of mobile media devices by young children. *Pediatrics*, 136(6), 1044-1050.
- Kajbafnezhad, H. (2016). Construction and validation of parental rating scale from children's emotional intelligence (4-8 Years Old). *Journal on Educational Psychology*, 9(4), 16- 20.
- Kaur, N., Gupta, M., Malhi, P., & Grover, S. (2019). Screen time in under-five children. *Indian pediatrics*, 56(9), 773-788.
- Kline, R. B. (2015). *Principles and practice of structural equation modeling*. New York, NY: Guilford publications.
- Komorowski, M., Marshall, D. C., Saliccioli, J. D. & Crutain, Y. (2016). Exploratory data analysis. In *Secondary Analysis of Electronic Health Records* (pp. 185-203). Springer, Cham.
- Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Lerner, D., de Vet, H. C. & van der Beek, A. J. (2016). Cross-cultural adaptation of the Individual Work Performance Questionnaire. *Work*, 53(3), 609-619.
- Korkmaz, N. H. (2017). Designing of playground by children and their opinion on play. *World Health*, 9, 6.
- Kostyrka-Allchorne, K., Cooper, N. R. & Simpson, A. (2017). The relationship between television exposure and children's cognition and behaviour: A systematic review. *Develop Rev*, 44, 19 – 58.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Kumar, R. (2019). *Research methodology: A step-by-step guide for beginners* (5th ed., pp. 39- 282). London, United Kingdom: Sage Publications Limited.
- Kung, K. T., Li, G., Golding, J., & Hines, M. (2018). Preschool gender-typed play behavior at age 3.5 years predicts physical aggression at age 13 years. *Archives of Sexual Behavior*, 47(4), 905-914.

- Lee, S. T., Wong, J. E., Ong, W. W., Ismail, M. N., Deurenberg, P., & Poh, B. K. (2016). Physical activity pattern of Malaysian preschoolers: environment, barriers, and motivators for active play. *Asia Pacific Journal of Public Health, 28*(5_suppl), 21S-34S.
- Lin, Y. C., & Yawkey, T. (2013). Does play matter to parents? Taiwanese parents' perceptions of child's play. *Education, 134*(2), 244-254.
- Lindsey, E. W. & Colwell, M. J. (2013). Pretend and physical play: Links to preschooler's affective social competence. *Merrill-Palmer Quarterly, 59*, 330-360.
- Lissak, G. (2018). Adverse physiological and psychological effects of screen time on children and adolescents: Literature review and case study. *Environmental research, 164*, 149-157.
- Livingstone, S., & Helsper, E. J. (2008). Parental mediation of children's internet use. *Journal of Broadcasting and Electronic Media, 52*(4), 581-599.
- LoBiondo-Wood, G., & Haber, J. (2014). Reliability and validity. *Nursing Research: Methods and Critical Appraisal for Evidence Based Practice, 289-309*.
- Loukatari, P., Matsouka, O., Papadimitriou, K., Nani, S., & Grammatikopoulos, V. (2019). The Effect of a Structured Playfulness Program on Social Skills in Kindergarten Children. *International Journal of Instruction, 12*(3), 237-252.
- Lynn, P. (2019). The advantage and disadvantage of implicitly stratified sampling. *Methods, Data, Analyses, 13*(2), 14.
- Malaysia Communication and Multimedia Commission. (2017). Main Findings. In Internet users survey 2017 statistical brief number twenty-one (pp. 8-30). Cyberjaya, Malaysia: Malaysian Communications and Multimedia Commission.
- Malaysia Educational Statistics. (2017). Pre-school. In Quick Facts 2017 Malaysia Educational Statistics (p. 10). Putrajaya, Malaysia: Educational Data Sector.
- Malaysia Educational Statistics. (2018). Pre-school. In Quick Facts 2018 Malaysia Educational Statistics (p. 10). Putrajaya, Malaysia: Educational Data Sector.
- Malaysian Communications and Multimedia Commission (MCMC) (2017). Respondents' Demographic. In hand phone users survey 2017 (p. 40). Cyberjaya, Malaysia: Author. Retrieved from <https://www.skmm.gov.my/skmmgovmy/media/General/pdf/HPUS2017.pdf>

- Mallow, M. S. (2018, March 24). Parents must monitor kids' gadget usage. *New Straits Times*. Retrieved from <https://www.nst.com.my/opinion/letters/2018/03/348684/parents-must-monitor-kids-gadget-usage>
- Martinez, W. L., Martinez, A. R., & Solka, J. (2017). *Exploratory data analysis with MATLAB* (3rd ed.). New York, NY: Chapman and Hall/CRC.
- Matthews, G., Zeidner, M., & Roberts, R. D. (Eds.). (2007). *The science of emotional intelligence: Knowns and unknowns*. New York, NY: Oxford University Press.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (2000). Selecting a measure of emotional intelligence: The case for ability scales. In R. Bar-On & J. D. A. Parker (Eds.), *The handbook of emotional intelligence: Theory, development, assessment, and application at home, school, and in the workplace* (pp. 320–342).
- Mayer, S. E. (1997). *What money can't buy: Family income and children's life chances*. London, UK: Harvard University Press.
- Mayo Clinic (2011). Children and TV: Limiting your child's screen time. Mayo Foundation for Medical and Educational Research. Retrieved from: <http://www.mayoclinic.org/healthy-lifestyle/childrens-health/in-depth/childrenand-tv/arteuropa.eu/repository/handle/JRC93239>
- McCrinkle, M., & Wolfinger, E. (2014). *The ABC of XYZ: Understanding the global generations*. Sydney, Australia: McCrinkle Research.
- McDevitt, S. C., & Carey, W. B. (1995). *Behavioral style questionnaire*. Scottsdale, AZ: Behavioral–Developmental Initiatives.
- Medgyesi, D., Brogan, J., Sewell, D., Creve-Coeur, J., Kwong, L., & Baker, K. (2018). Where Children play: Young child exposure to environmental hazards during play in public areas in a transitioning internally displaced persons community in Haiti. *International Journal of Environmental Research and Public Health*, 15(8), 1646.
- Ministry of Education. (2009b). Kurikulum Standard Prasekolah Kebangsaan Malaysia (KSPK). Kuala Lumpur: Kementerian Pelajaran Malaysia.
- Ministry of Education. (2010). Kurikulum Standard Prasekolah Kebangsaan Malaysia (KSPK). Kuala Lumpur: Kementerian Pelajaran Malaysia.
- Ministry of Education. (2017). Kurikulum Standard Prasekolah Kebangsaan Malaysia (KSPK). Kuala Lumpur: Kementerian Pelajaran Malaysia.
- Mirchandani, N., Unantenne, N., Mittal, N., & Siew-Stevens, D. (2014). Mobile device usage among young kids. *The Asianparent Insights*, 4-47.

- Mohajan, H. K. (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University. Economic Series*, 17(4), 59-82.
- Mowder, B. A. (2005). The Parent Development Theory: Understanding parents, parenting perceptions, and parenting behaviors. *Journal of Early Childhood and Infant Psychology*, 1, 45-64.
- Mustafa, L. M., & Azman, M. N. A. (2013). Preschool education in Malaysia: Emerging trends and implications for the future. *American Journal of Economics*, 3(6), 347-351.
- Naghavi, F., & Redzuan, M. (2011). The relationship between gender and emotional intelligence. *World Applied Sciences Journal*, 15(4), 555-561.
- Naties, V. (1989). United Nations Convention on the Rights of the Child (UNCRC).
- Ng, A., Firouz, A. M., Khalidi, J. R., Muhtar, M. A., Tumin, S. A., Tan, K. M., Tan, T. T. & Tan, Z. G. (2018). *KRI (Khazanah Research Institute). The State of Households 2018: Different Realities* (3rd ed.). Kuala Lumpur, Malaysia: Khazanah Research Institute.
- Nikken, P., & Jansz, J. (2006). Parental mediation of children's videogame playing: A comparison of the reports by parents and children. *Learning, Media and Technology*, 31(2), 181-202.
- Nikken, P., & Schols, M. (2015). How and why parents guide the media use of young children. *Journal of Child and Family Studies*, 24(11), 3423-3435.
- Nilsson, J., Gardulf, A., & Lepp, M. (2016). Process of translation and adaptation of the Nurse Professional Competence (NPC) Scale. *Journal of Nursing Education and Practice*, 6(1), 100.
- Norboevich, T. B. (2020). Analysis of psychological theory of emotional intelligence. *European Journal of Research and Reflection in Educational Sciences*, 8(3), 99-104.
- O'Sullivan, E., Rassel, G. R., Berner, M., & Taliaferro, J. D. (2017). *Research methods for public administrators* (6th ed.). New York, NY: Routledge.
- Ofcom. (2012). Children and parents: Media use and attitudes report. London. Retrieved from <http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/oct2012/main.pdf>
- Ofcom. (2015c). Factsheets and activity sheets for children aged 8-11. Retrieved from <http://stakeholders.ofcom.org.uk/binaries/research/>

- Olszewski, L. E. (2015). Screen time exposure and children's behavioral correlates (Doctoral Dissertation, Pace University).
- Olszewski, L. E., Asar, S., Bogatch, A. & Blackman, A. (2014). Measuring screen time: Development of the Screen Time Questionnaire (STQ). Poster presented at the National Association of School Psychologists annual conference.
- Onchwari, G., & Keengwe, J. (2011). Examining the relationship of children's behavior to emotion regulation ability. *Early Childhood Education Journal*, 39(4), 279.
- Parkes, A., Sweeting, H., Wight, D., & Henderson, M. (2013). Do television and electronic games predict children's psychosocial adjustment? Longitudinal research using the UK Millennium Cohort Study. *Archives of Disease in Childhood*, 98(5), 341-348.
- Patrikakou, E. N. (2016). Parent Involvement, Technology, and Media: Now What?. *School Community Journal*, 26(2), 9-24.
- Pea, R., Nass, C., Meheula, L., Rance, M., Kumar, A., Bamford, H., ... & Zhou, M. (2012). Media use, face-to-face communication, media multitasking, and social well-being among 8-to 12-year-old girls. *Developmental Psychology*, 48(2), 327.
- Pettit, G., Bates, J., & Dodge, K. (1997). Supportive parenting, ecological context, and children's adjustment: A seven-year longitudinal study. *Child Development*, 68(5), 908-923.
- Press release children statistics publications, Malaysia. (2018, November 29). In Department of Statistics, Malaysia.
- Press release children statistics, Malaysia. (2017, November 15). In Department of Statistics, Malaysia.
- Querdo, J. G., Warner, T. D., & Eyberg, S. M. (2002). Parenting styles and child behavior in African American families of preschool children. *Journal of Clinical Child and Adolescent Psychology*, 31(2), 272-277.
- Radesky, J. S., Schumacher, J., & Zuckerman, B. (2015). Mobile and interactive media use by young children: The good, the bad, and the unknown. *Pediatrics*, 135(1), 1-3.
- Radesky, J. S., Peacock-Chambers, E., Zuckerman, B., & Silverstein, M. (2016). Use of mobile technology to calm upset children: Associations with social-emotional development. *JAMA pediatrics*, 170(4), 397-399.

- Rauf, A. L. A., & Bakar, K. A. (2019). Effects of play on the social development of preschool children. *Creative Education, 10*(12), 2640-2648.
- Raver, C. C., & Zigler, E. F. (1997). Social competence: An untapped dimension in evaluating Head Start's success. *Early Childhood Research Quarterly, 12*, 363-385
- Reifel, R. S. (Ed.). (2001). *Theory in context and out (Vol. 3)*. London, United Kingdom: Greenwood Publishing Group.
- Reimers, A., Schoeppe, S., Demetriou, Y., & Knapp, G. (2018). Physical activity and outdoor play of children in public playgrounds—do gender and social environment matter?. *International Journal of Environmental Research and Public Health, 15*(7), 1356.
- Reker, D. L. (2004). Children's emotional intelligence as a mediator between children's attachment security and their internalizing and externalizing behaviours. Yayınlanmamış yüksek lisans tezi, Trent Üniversitesi, Kanada.
- Rentzou, K. (2012). Greek preschool children's playful behavior: Assessment and correlation with personal and family characteristics. *Early Child Development and Care*. doi: 10.1080/03004430.2012.752736
- Rentzou, K. (2014). Preschool children's social and nonsocial play behaviours. Measurement and correlations with children's playfulness, behaviour problems and demographic characteristics. *Early Child Development and Care, 184*(4), 633-647.
- Reynolds, E., Stagnitti, K., & Kidd, E. (2011). Play, language and social skills of children attending a play-based curriculum school and a traditionally structured classroom curriculum school in low socioeconomic areas. *Australasian Journal of Early Childhood, 36*(4), 120-130.
- Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). *Generation M 2: Media in the lives of 8-to 18-Year-Olds*. CA: Henry J. Kaiser Family Foundation.
- Ridders, W., Lawrence, D., Hafekost, J., & Zubrick, S. R. (2016). Internet use and electronic gaming by children and adolescents with emotional and behavioural problems in Australia—results from the second Child and Adolescent Survey of Mental Health and Wellbeing. *BMC Public Health, 16*(1), 399.
- Rissanen, C. (2010). *Factors that account for children's variability in social skills: Temperament and emotional intelligence*. (Doctoral dissertation, City University of New York).
- Roberts, D. F., & Foehr, U. G. (2008). Trends in media use. *The future of children, 18*(1), 11- 37.

- Rogers, C. S., Impara, J. C., Frary, R. B., Harris, T., Meeks, A., Semanic-Lauth, S., & Reynolds, M. (1998). Measuring playfulness: Development of the child behaviors inventory of playfulness. *Play & Culture Studies*, 1, 151-168.
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. Oxford university press.
- Rohaizad, N. A. A., Kosnin, A. M & Nora M. (2012). Teaching of socio-emotional skills in Malaysian preschools: Current practice and problems. 2nd PSU-USM International Conference on Art and Sciences. Transforming Research for Sustainable Community, 132–135.
- Rohaizad, N. A. A., & Kosnin, A. M. (2014). Importance of cultivating emotional intelligence in children. *Jurnal Teknologi*, 67(1).
- Rohaizad, N. A. A., Kosnin, A. M., & Khan, M. U. (2017). The effectiveness of teaching and learning module to enhance preschool children's emotional intelligence. In *Social Interactions and Networking in Cyber Society* (pp. 3-14). Springer, Singapore.
- Saarni, C. (1999). *The development of emotional competence*. New York, NY: Guilford Press. Saarni, C. (2000). *The social context of emotional development*. Handbook of emotions, 2,306-322.
- Salkind, N. J. (2014). *Exploring research* (8th ed., pp. 335-348). Harlow, United Kingdom: Pearson Education Limited.
- Salovey, P. E., & Sluyter, D. J. (1997). *Emotional development and emotional intelligence: Educational implications*. Basic Books.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality*, 9(3), 185-211.
- Sanderson, R. C. (2010). Towards a new measure of playfulness: The capacity to fully and freely engage in play (Doctoral dissertation, Loyola University Chicago, Chicago). 232.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed., pp. 106-167). Harlow, United Kingdom: Pearson Education.
- Scharfe, E. (2000). *Development of emotional expression, understanding, and regulation in infants and young children*. The handbook of emotional intelligence, 244-62.
- Schmitt, N. (1996). Uses and abuses of coefficient alpha. *Psychological assessment*, 8(4), 350.

- Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: appropriate use and interpretation. *Anesthesia & Analgesia*, 126(5), 1763-1768.
- Schutte, N. S., Malouff, J. M., & Thorsteinsson, E. B. (2013). Increasing emotional intelligence through training: Current status and future directions. *International Journal of Emotional Education*, 5(1), 56.
- Serrat, O. (2017). Understanding and developing emotional intelligence. In *Knowledge solutions* (pp. 329-339). Springer, Singapore.
- Serrat, O. (2017). Understanding and developing emotional intelligence. In *Knowledge Solutions* (pp. 329-339). Springer, Singapore.
- Sharkins, K. A., Newton, A. B., Albaiz, N. E. A., & Ernest, J. M. (2016). Preschool children's exposure to media, technology, and screen time: Perspectives of caregivers from three early childcare settings. *Early Childhood Education Journal*, 44(5), 437- 444.
- Shin, W., & Li, B. (2017). Parental mediation of children's digital technology use in Singapore. *Journal of Children and Media*, 11(1), 1-19.
- Shuo, Z. (2018, October 29). 48 percent of Chinese parents play with phones while talking to children. In *ChinaDaily.com.cn*.
- Singer, E. (2015). Play and playfulness in early childhood education and care. *Psychology in Russia*, 8(2), 27.
- Smith, R. L., Stagnitti, K., Lewis, A. J., & Pépin, G. (2015). The views of parents who experience intergenerational poverty on parenting and play: A qualitative analysis. *Child: Care, Health and Development*, 41(6), 873-881.
- Sullivan, A. K. (1999). The emotional intelligence scale for children (Doctoral dissertation, University of Virginia).
- Taherdoost, H. (2016). Validity and reliability of the research instrument: How to test the validation of a questionnaire/survey in a research. *International Journal of Academic Research in Management (IJARM)*, 5(2), 28-36.
- Tallandini, M. A. (2004). Aggressive behavior in children's dolls' house play. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, 30(6), 504-519.
- Tamana, S. K., Ezeugwu, V., Chikuma, J., Lefebvre, D. L., Azad, M. B., Moraes, T. J., et al. (2019). Screen-time is associated with inattention problems in preschoolers: Results from the CHILD birth cohort study. *PLoS ONE* 14(4).

- Taylor, S. I., & Rogers, C. S. (2001). The relationship between playfulness and creativity of Japanese preschool children. *International Journal of Early Childhood*, 33(1), 43-49.
- Thomas, L., & Juanes, F. R. A. N. C. I. S. (1996). The importance of statistical power analysis: An example from Animal Behaviour. *Animal Behaviour*, 52(4), 856-859.
- Topper, C. (2017). Parental perception of mobile device usage in children and social competency (Doctoral dissertation, Walden University).
- Trevlas, E., Grammatikopoulos, V., Tsigilis, N., & Zachopoulou, E. (2003). Evaluating playfulness: Construct validity of the children's playfulness scale. *Early Childhood Education Journal*, 31(1), 33-39.
- Uhls, Y. T., Michikyan, M., Morris, J., Garcia, D., Small, G. W., Zgourou, E., & Greenfield, P. M. (2014). Five days at outdoor education camp without screens improves preteen skills with nonverbal emotion cues. *Computers in Human Behavior*, 39, 387-392.
- Ulutas, I., & Omeroglu, E. (2007). The effects of an emotional intelligence education program on the emotional intelligence of children. *Social Behavior and Personality: An International Journal*, 35(10), 1365-1372.
- Ulutas, I., & Omeroglu, E. (2012). Maternal attitudes, emotional intelligence and home environment and their relations with emotional intelligence of sixth years old children. *Emotional Intelligence-New Perspectives and Applications*, 167-180.
- United Nations Educational Scientific and Cultural Organization [UNESCO] (2000). Education for All. Assessment country: Malaysia.
- Verroulx, K. A. (2018). Technology use and working memory performance (Doctoral dissertation, John F. Kennedy University).
- Viechtbauer, W., Smits, L., Kotz, D., Budé, L., Spigt, M., Serroyen, J., & Crutzen, R. (2015). A simple formula for the calculation of sample size in pilot studies. *Journal of Clinical Epidemiology*, 68(11), 1375-1379.
- Vygotsky, L. S. (1978). Socio-cultural theory. *Mind in society*, 6, 52-58.
- Walliman, N. (2017). *Research methods: The basics* (pp. 113-146). New York, NY: Routledge.
- Warren, R. (2001). In words and deeds: Parental involvement and mediation of children's television viewing. *Journal of Family Communication*, 1, 211-231.
- Wilson, P. (2010). *The playwork primer*. College Park, MD: Alliance for Childhood.

- World Health Organisation (WHO). (2019). Process of translation and adaptation of instruments. [In-ternet]. Geneva: World Health Organization. 2015. Available from https://www.who.int/substance_abuse/research_tools/translation/en/
- Yunus, S. M. (2013, March 1). Early education and development in Malaysia: Issues and challenges in providing a framework for a multiethnic society. In *Child Research Net*.
- Zachopoulou, E., Trevlas, E., & Tsikriki, G. (2004). Perceptions of gender differences in playful behaviour among kindergarten children. *European Early Childhood Education Research Journal*, 12(1), 43-53.
- Zaki, A. A., & Ismail, Z. (2017). *Violent video games and aggressive behaviour with parental monitoring as moderator among adolescents in Petaling, Selangor, Malaysia* (Master's thesis). May
- Zawacki-Richter, O., Kerres, M., Bedenlier, S., Bond, M., & Buntins, K. (2020). *Systematic reviews in educational research: Methodology, perspectives and application* (p. 161). Springer Nature.
- Zeidner, M., Matthews, G., Roberts, R. D., & MacCann, C. (2003). Development of emotional intelligence: Towards a multi-level investment model. *Human Development*, 46(2-3), 69-96.
- Zeidner, M., Roberts, R. D., & Matthews, G. (2002). Can emotional intelligence be schooled? A critical review. *Educational Psychologist*, 37(4), 215-231.

BIODATA OF STUDENT

J.E. Tun (Ju Ern Tun) obtained her Bachelor's degree in Psychology from University of Pendidikan Sultan Idris (UPSI), in 2018. She studies her Master's degree in Psychology of Child Development from University of Putra Malaysia (UPM). From 2016 till present, she works as a home tutor and tuition teacher in her hometown. From 2018 till 2019, she worked as a special need teacher at Wings Melaka, a centre for developmental disabilities. Currently, she works at Kiwanis Down Syndrome Foundation National Centre as a special need teacher. She is a master student in the Department of Human Development and Family Studies at University of Putra Malaysia (UPM). Her current research interests are emotional intelligence, parental monitoring, modern electronic device usage, screen time and preschool children.



LIST OF PUBLICATIONS

- Tun, J. E., Arshat. Z., Ismail, N. (2020). Playfulness and emotional intelligence of Chinese preschool children: Is it parental monitoring so important? *TEST Engineering and Management*, 83, 3025-3037.
- Tun, J. E., Arshat. Z., Ismail, N. (2021). Predictors of Emotional Intelligence among Preschool Children in Kuala Lumpur, Malaysia. *GATR Global J. Bus. Soc. Sci. Review*, 9(1), 23 – 32.
- Tun, J. E. (2021). Sex Differences in Screen Time and Playfulness among Chinese Preschool Children. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(10), 4293-4297.



UNIVERSITI PUTRA MALAYSIA

STATUS CONFIRMATION FOR THESIS / PROJECT REPORT AND COPYRIGHT

ACADEMIC SESSION : _____

TITLE OF THESIS / PROJECT REPORT :

NAME OF STUDENT : _____

I acknowledge that the copyright and other intellectual property in the thesis/project report belonged to Universiti Putra Malaysia and I agree to allow this thesis/project report to be placed at the library under the following terms:

1. This thesis/project report is the property of Universiti Putra Malaysia.
2. The library of Universiti Putra Malaysia has the right to make copies for educational purposes only.
3. The library of Universiti Putra Malaysia is allowed to make copies of this thesis for academic exchange.

I declare that this thesis is classified as :

*Please tick (v)

CONFIDENTIAL

(Contain confidential information under Official Secret Act 1972).

RESTRICTED

(Contains restricted information as specified by the organization/institution where research was done).

OPEN ACCESS

I agree that my thesis/project report to be published as hard copy or online open access.

This thesis is submitted for :

PATENT

Embargo from _____ until _____
(date) (date)

Approved by:

(Signature of Student)
New IC No/ Passport No.:

(Signature of Chairman of Supervisory Committee)
Name:

Date :

Date :

[Note : If the thesis is CONFIDENTIAL or RESTRICTED, please attach with the letter from the organization/institution with period and reasons for confidentially or restricted.]