PARENT-CHILD RELATIONSHIP AND HOPE AS MEDIATORS BETWEEN PARENTAL SUPPORT, SCHOOL CLIMATE AND ACADEMIC SELF-EFFICACY AMONG EARLY ADOLESCENTS IN THE KLANG VALLEY, MALAYSIA

By

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

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Parental support and school climate are well documented to be two significant factors in determining adolescents' academic development Yet, there is still much to be discovered about the underlying process of such relationships especially in the Malaysian context. To address this paucity, the present study was carried out to investigate the mediation roles of the parent-child relationship (PCR) and hopeful thinking in the linkage between paternal support, maternal support, school climate, and early adolescents' academic efficacy. Parental support included the subdomains of involvement, structure, and autonomy support. The academic efficacy has measured overall academic efficacy and STEM efficacy domains.

This research was a quantitative study that has employed the correlational research design to measure the hypotheses. A total of 247 male and 247 female young adolescents (9 to 11 years old) from five public primary schools in Klang Valley, Malaysia were selected to participate in this study using stratified random sampling. The instruments used in this study were Perceptions of Parents Scales, New Jersey School Climate Survey, Security Scale, Children's Hope Scale, Self-Efficacy Questionnaire for Children, and STEM Efficacy Children Scale (SECS). Data were collected using a self-administered questionnaire and Structural Equation Modeling (Amos) was used to test the hypothesized models with multiple mediators using the AMOS software.

The current findings have suggested that mothers' structure (β=.259 to.398, p <. 05), fathers' involvement (β =.188 to .207, p < .05), structure supports (β =.109, p < .05), and school climate (β =.443 to .458, p < .05) were positive direct predictors of academic efficacy. Some discrepancies were found regarding the

significant paths of fathers' and mothers' areas of support in cultivating academic efficacy, as well as the effect sizes of independent constructs compared to previous literature. These inconsistencies may be due to the differences in parenting and educational beliefs and norms practiced by people in different cultures and regions, which determined early adolescents' receptivity to such social messages. The PCR and hope have sequentially mediated the linkage between parental support and academic efficacy. Apart from that, the findings also showed that hope has significantly mediated the linkage between school climate and efficacy. To conclude, though the influence of parenting and school factors on early adolescents has become less or indirect, it was still important for the development of positive internal mechanisms in the formation of positive academic efficacy in them. The present findings were important in provided insightful suggestions for planning and refining academic intervention strategies used in schools and families. In addition, it helped advance Overlapping Spheres of Influence Model and Social Cognitive Theory by explaining the mediating role of PCR and hope as underlying processes that linked the contextual factors of parental support, school climate, and the development of early adolescents' academic efficacy.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

HUBUNGAN IBU BAPA-ANAK DAN PENGHARAPAN SEBAGAI PENGANTARA DALAM HUBUNGAN ANTARA SOKONGAN IBU BAPA, IKLIM SEKOLAH DAN EFIKASI KENDIRI AKADEMIK DALAM KALANGAN AWAL REMAJA DI LEMBAH KLANG, MALAYSIA

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Sokongan ibubapa dan iklim sekolah telah dibuktikan merupakan dua signifikan faktor yang mempengaruhi efikasi kendiri akademik dalam kalangan remaja. Namun begitu, masih banyak yang perlu diketahui mengenai proses yang mendasari hubungan tersebut terutamanya dalam kontek kajian di Malaysia. Untuk mengatasi jurang ini, maka kajian ini dijalankan untuk mengkaji kesan mediasi hubungan antara ibu bapa-anak (PCR) dan pengharapan *(hope)* terhadap hubungan di antara sokongan ayah, sokongan ibu, iklim sekolah, dan efikasi kendiri akademik awal remaja. Sokongan ibu bapa turut merangkumi subdomain seperti penglibatan, struktur, dan sokongan autonomi. Efikasi kendiri akademik pula meliputi keseluruhan efikasi kendiri akademik dan efikasi kendiri STEM.

Penyelidikan ini merupakan kajian kuantitatif yang menggunakan kaedah reka bentuk kajian korelasi untuk menguji hipotesis. Seramai 274 orang remaja lelaki and 274 orang remaja perempuan (berumur 9 ke 11 tahun) daripada lima buah sekolah rendah kerajaan di Lembah Klang, Malaysia telah dikenalpasti untuk mengambil bahagian dalam kajian ini dengan menggunakan teknik persampelan berstrata. Instrumen yang digunakan dalam kajian ini adalah *Perceptions of Parents Scales, New Jersey School Climate Survey, Security Scale, Children's Hope Scale, Self-Efficacy Questionnaire for Children dan STEM Efficacy Children Scale (SECS).* Soal selidik telah digunakan untuk tujuan pengumpulan data dan Pemodelan Persamaan Struktural (SEM) telah digunakan untuk menguji model hipotesis yang mengandungi pelbagai faktor mediasi dengan menggunakan perisian AMOS.

Hasil dapatan kajian menunjukkan sokongan struktur ibu (β=.259 to.398, p <. 05), penglibatan bapa (β =.188 to .207, p < .05), struktur bapa (β =.109, p < .05), dan iklim sekolah (β =.443 to .458, p < .05) adalah peramal positif terhadap efikasi kendiri akademik. Hasil dapatan ini telah menunjukkan perbezaan dengan literatur lepas daripada segi kesan signifikan yang ditunjukkan oleh aspek sokongan ibu bapa dalam memupuk efikasi akademik, dan juga saiz kesan (*effect size*) yang dihasilkan. Ketidak selarian ini mungkin disebabkan oleh perbezaan norma dalam keibubapaan, kepercayaan serta pendidikan yang diamalkan oleh penduduk yang terdiri daripada pelbagai budaya dan agama, yang menentukan kerelatifan awal remaja terhadap mesej sosial tersebut. PCR dan pengharapan *(hope)* telah menunjukkan urutan sebagai mediator dalam hubungan antara sokongan ibu bapa dan efikasi akademik. Selain itu, dapatan juga telah menunjukkan faktor pengharapan *(hope*) adalah pengantara signifikan dalam hubungan antara iklim sekolah dan efikasi kendiri akademik. Kesimpulannya, walaupun pengaruh keibubapaan dan faktor sekolah telah menjadi kurang atau tiada langsung terhadap remaja, faktor-faktor ini tetap penting untuk memupuk mekanisme dalaman positif remaja untuk membantu mereka membentuk efikasi kendiri akademik yang positif. Penemuan kajian ini adalah penting bagi memberikan cadangan yang mendalam untuk merancang dan memperhalusi strategi intervensi akademik yang boleh digunapakai di sekolah dan keluarga. Di samping itu, hasil dapatan kajian juga diharapkan dapat membantu memperkembangkan lagi teori Pertindihan Sfera (*Overlapping Spheres of Influence*) dan teori Pembelajaran Social (*Social Cognitive Theory*) dengan memperjelaskan peranan mediasi PCR dan pengharapan *(hope)* sebagai proses asas yang telah menghubung kaitkan faktor kontekstual seperti sokongan ibu bapa, iklim sekolah, dan perkembangan efikasi akademik awal remaja.

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.

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

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TABLE OF CONTENTS

		Page
ABSTRACT		i
ABSTRAK		iii
ACKNOWLEDGEMENTS		v
APPROVAL		vi
DECLARATION		viii
LIST OF TABLES		xiii
LIST OF FIGURES		xvi
LIST OF ABBREVIATIONS		xviii
CHAPTER		
1	**INTRODUCTION**	
1.1	Background of study	1
1.2	Problem Statement	3
1.3	Research Objectives	5
1.4	Research Questions	5
1.5	Hypotheses of the Study	6
1.6	Significance of the Study	7
1.7	Scope and Limitation of the Study	8
1.8	Definition of Terms	8
1.8.1	Parental Support	9
1.8.2	School Climate	9
1.8.3	Parent-child Relationship	10
1.8.4	Hope	10
1.8.5	Academic Efficacy	10
1.9	Chapter Summary	11
2	**LITERATURE REVIEW**	
2.1	Introduction	12
2.2	Self-Efficacy	12
2.2.1	Academic Efficacy	12
2.2.2	Efficacy in STEM Learning	13
2.3	Concept of Social Support	14
2.3.1	Parental Support	14
2.3.2	School Climate	17
2.4	Concept of Parent-child Relationship	18
2.5	Concept of Hope	19
2.6	Parental Support and Academic Efficacy	19
2.6.1	Parental Involvement and Academic Efficacy	19
2.6.2	Parental Structure and Academic Efficacy	22
2.6.3	Autonomy Support and Academic Efficacy	24
2.7	School Climate and Academic Efficacy	25
2.8	The Mediative Role of Parent-Child Relationship (PCR)	28
2.9	The Mediative Role of Hope	31

	2.9.1	Mediation Role of Hope in the Link between Parenting and Academic Outcomes	33
	2.9.2	Mediation Role of Hope in the Link between School Climate and Academic Outcomes	34
2.10	Paternal and Maternal Parenting and Adolescents' Academic Functioning		35
2.11	Theoretical Framework		37
	2.11.1	Overlapping Spheres of Influence	37
	2.11.2	Social Cognitive Theory-Efficacy Theory	39
	2.11.3	Attachment Theory	40
	2.11.4	Hope Theory	40
	2.11.5	Integration of Theories	41
2.12	Conceptual Framework		42
2.13	Chapter Summary		44
3	**METHODOLOGY**		
3.1	Introduction		48
3.2	Research Design		48
3.3	Population and Location of the Study		48
3.4	Sampling, Sample Size and Procedure		49
3.5	Development of Instruments		51
	3.5.1	Perceptions of Parents Scales (POPS – The Child Scale)	51
	3.5.2	The Parenting Style and Dimension Questionnaire (PSDQ)	51
	3.5.3	New Jersey School Climate Survey (NJSCS)	52
	3.5.4	Security Scale	52
	3.5.5	Children's Hope Scale (CHS)	52
	3.5.6	Self-Efficacy Questionnaire for Children (SEQ-C)	53
	3.5.7	STEM Efficacy Children Scale (SECS)	53
3.6	Instrument Validity and Translation		54
3.7	Pilot Study		55
3.8	Data Collection and Procedure		55
3.9	Data Preparation		56
3.10	Data Analysis		58
3.11	Confirmatory Factor Analysis for Overall Measurement Model		60
3.12	Exploratory Factor Analysis (EFA) for SECS		63
3.13	Chapter Summary		64
4	**RESULTS AND DISCUSSION**		
4.1	Introduction		66
4.2	Descriptive Analysis		66
	4.2.1	Objective 1: The Level of Parental Support, School Climate, PCR, Hope, and Academic Efficacy	68
4.3	Inferential Analysis		69

	4.3.1	Evaluation of the Structural Equation Model	69
	4.3.2	Objective 2: To Examine the Influence of Parental Supports on Academic Self-efficacy	71
	4.3.3	Objective 3: To Examine the Influence of School Climate on Academic Self-efficacy	75
	4.3.4	Objective 4: To Investigate the Mediating roles of Parent-child Relationship and Hope in the Linkage of Parental Supports on Academic Efficacy	75
	4.3.5	Objective 5: To Investigate the Mediating Role of Hope in the Relationship of School Climate on Academic Self-efficacy	87
	4.3.6	Objective 6: To Verify the STEM Efficacy for Children Scale (SECS)	90
4.4	Summary of the Findings		93
5	**SUMMARY, CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH**		
5.1	introduction		96
5.2	Summary		96
5.3	Discussion of Findings		98
	5.3.1	Objective 2: The Direct Effects of Parental Support on Academic Efficacy	98
	5.3.2	Objective 3: The Direct Effects of School Climate on Academic Efficacy	102
	5.3.3	Objective 4: The Mediation Roles of the Parent-Child Relationship (PCR) and Hope In the Relationship of Parental Support and Academic Efficacy	104
	5.3.4	Objective 5: The Mediation Role of Hope In the Relationship of School Climate and Academic Efficacy	110
	5.3.5	Objective 6: The Validation of STEM Efficacy Children Scale (SECS)	112
5.4	Implications of the Study		113
	5.4.1	Research Implications	113
	5.4.2	Practical Implications	116
	5.4.3	Theoretical Implications	117
5.5	Recommendations of Study		119
5.6	Conclusion		120
REFERENCES			121
APPENDICES			140
BIODATA OF STUDENT			191
LIST OF PUBLICATIONS			192

LIST OF TABLES

Table		Page
3.1	Calculation for Numbers of School Involved Based on Types	50
3.2	Summary of Respondents Based on School Type, Age, and Gender	50
3.3	Reliability Indexes for Research Variables Based on Pilot Sample (N=306)	55
3.4	A Summary of Recommended Fit Indices, Threshold Values, and Reference Used in SEM Based Analysis	59
3.5	Summary of Constructs Development for Overall Measurement Model based on EFA and CFA	163
3.6	Summary of Model Fit Indices Result for Model 1 and 2 (N=548)	61
3.7	Summary of Convergent Validity: Item Loadings, AVE, CR of Each Studied Constructs Based on Model 1 (Father) and Model 2 (Mother)	62
3.8	Average Variance Extracted (on the Diagonal), and Squared Correlation Coefficients (on the Off Diagonal) of Constructs Based on Model 1	62
3.9	Average Variance Extracted (on the Diagonal), and Squared Correlation Coefficients (on the Off Diagonal) of Constructs Based On Model 2	63
3.10	Total Variance Explained by STEM Efficacy Scale	64
3.11	Summary of exploratory factor analysis results for the STEM Efficacy scale (N=306)	64
3.12	Diagnosis of Unengaged Responses Cases (SD<.50) Based on Variables In the Data File (Using Microsoft Office Excel)	150
3.13	Summary of Cases of Outliers, Mean and 5% Trimmed Mean Value of Variables (using SPSS)	150
3.14	Multicollinearity Diagnosis with Tolerance and VLF Values Generated via SPSS	151

3.15	Multicollinearity Diagnosis with Correlation Matrix Generated using SPSS	153
4.1	Frequency and Percentage Distribution by School Type and Gender	66
4.2	Frequency and Percentage Distribution by Age and Race.	67
4.3	Frequency and Percentage Distribution by Family Household Income.	67
4.4	Frequency and Percentage Distribution by Parent's Highest Educational Level.	68
4.5	The level of Mathers' and Fathers' Support and PCR	68
4.6	The Level of School Climate, Hope, Overall Academic Efficacy, and STEM Efficacy.	69
4.7	The Direct Effects of Fathers' Support on Overall Academic Efficacy and STEM Efficacy In the Unmediated Model	73
4.8	The Direct Effects of Mothers' Support on Overall Academic Efficacy and STEM Efficacy In the Unmediated Model	74
4.9	The Direct Effect of School Climate on Overall Academic Efficacy and STEM Efficacy In the Unmediated Models	75
4.10	The Paths of Fathers' Involvement-PCR-Hope-Overall Academic Efficacy (H9)	77
4.11	The Paths of Fathers' Structure-PCR-Hope-Overall Academic Efficacy (H10)	77
4.12	The Paths of Fathers' Autonomy-PCR-Hope-Overall Academic Efficacy (H11)	78
4.13	The Paths of Fathers' Involvement-PCR-Hope-STEM Efficacy (H12)	79
4.14	The Paths of Fathers' Structure-PCR-Hope-STEM Efficacy (H13)	80
4.15	The Paths of Fathers' Autonomy-PCR-Hope-STEM Efficacy (H14)	80
4.16	Summary of Bootstrapping Test, Calculation of K^2 for H9-H14 based on Model 1 (Father Data)	81

4.17	The Paths of Mothers' Involvement-PCR-Hope-Overall Academic Efficacy (H9)	83
4.18	The Paths of Mothers' Structure-PCR-Hope-Overall Academic Efficacy (H10)	83
4.19	The Paths of Mothers' Autonomy-PCR-Hope-Overall Academic Efficacy (H11)	84
4.20	The Paths of Mothers' Involvement-PCR-Hope-STEM Efficacy (H12)	85
4.21	The Paths of Mothers' Structure-PCR-Hope-STEM Efficacy (H13)	86
4.22	The Paths of Mothers' Autonomy-PCR-Hope-STEM Efficacy (H14)	86
4.23	Summary of Bootstrapping Test, Calculation of K^2 for H9-H14 based on Model 2 (Mothers' Data)	87
4.24	The Paths of School Climate-Hope-Overall Academic Efficacy (H15)	88
4.25	The Paths of School Climate-Hope-STEM Efficacy (H16)	89
4.26	Summary of Bootstrapping Test, Calculation of K^2 for H15-H116	89
4.27	Summary of Fit indices of the respecified model for SECS Model 1	90
4.28	Summary of Factor loadings, Average Variance Extracted (AVE) and Construct Reliability (CR) of Finalized SECS Model 2 (14 items)	92
4.29	Summary of Findings	94

LIST OF FIGURES

Figure		Page
2.1	External Model of Overlapping Sphere of Influence of Family, School and Community on Children's Learning (Source: Epstein, 2018)	38
2.2	Internal Model of Overlapping Sphere of Influence of Family, School, and Community on Children's Learning (Source: Epstein, 2018)	39
2.3	Theoretical Framework of the Study	41
2.4	Conceptual Framework of the Study	43
3.1	Overall Measurement Model Based on Model 1 (Father Data File)	161
3.2	Overall Measurement Model Based on Model 2 (Mother Data File)	162
3.3	Outlier Checking using High Mahalanobis d^2 from the Text View Output (Amos 24)	151
3.4	Skewness and Kurtosis values generated via Text View Output using Amos 24	152
3.5	Generated MI Value based on Amost Text Output for Model 1 and 2	160
4.1	The Standardized Regression Weights for Every Paths in the Model Based on Fathers' Data (Model 1)	70
4.2	The Standardized Regression Weights for Every Paths in the Model Based on Mothers' Data (Model 2)	71
4.3	The Standardized Regression Weights for Paths in the Unmediated Model 1 (Fathers' Support, School Climate and Academic Efficacy)	72
4.4	The Standardized Regression Weights for Paths in the Unmediated Model 2 (Mothers' Support, School Climate and Academic Efficacy)	73
4.5	The Regression Weights for Every Paths in the Model Based on Fathers' Data (Model 1)	164
4.6	The Regression Weights for Every Paths in the Model Based on Mothers' Data (Model 2)	165

4.7	The Regression Weights for Paths in the Unmediated Model 1 (Fathers' Support, School Climate and Academic Efficacy)	166
4.8	The Regression Weights for Paths in the Unmediated Model 2 (Mothers' Support, School Climate and Academic Efficacy)	167
4.9	Mediation Path Analysis: Father's Support-Relationship-Hope-Overall Academic Efficacy	76
4.10	Mediation Path Analysis: Father's Support-PCR-Hope-STEM Efficacy	79
4.11	Mediation Path Analysis: Mother's Support-PCR-Hope-Overall Academic Efficacy	82
4.12	Mediation Path Analysis: Mother's Support-PCR-Hope-STEM Efficacy	85
4.13	Mediation Path Analysis: School Climate- Hope-Overall Academic Efficacy	88
4.14	Mediation Path Analysis: School Climate- Hope-STEM Efficacy	89
4.15	The 14-item SECS Model 1 In First-order Factor Structure	91
4.16	The 14-item SECS Model 12 In Second-order Factor Structure	92

LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness of Fit Index
AVE	Average Variance Extracted
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CHS	Children's Hope Scale
CMIN	Chi-Square Test
CMIN/DF	Relative Chi-Square Test
CR	Composite Reliability
EFA	Exploratory Factor Analysis
EPRD	Educational Planning and Research Division
GFI	Goodness of Fit Index
HT	Hope Theory
IFI	Incremental Fit Index
JKEUPM	University Ethics Committee (UPM)
JPWPKL	*Jabatan Pendidikan WPKL*
KMO	Kaiser-Meyer-Olkin
KSSM	Secondary School Standard Curriculum
KSSR	Primary School Standard Curriculum
MI	Modification Indices
MOE	Ministry of Education
NFI	Normed Fit Index
NJSCS	New Jersey School Climate Survey
OSI	Overlapping Sphere of Influence Model

PCA	Principal Component Analysis
PGFI	Parsimony Goodness of Fit Index
PISA	Program for International Student Assessment.
PNFI	Parsimony Normed Fit Index
POPS	Perceptions of Parents Scale - The Child Scale
PSDQ	Parenting Style and Dimension Questionnaire
RMSEA	Root Mean Square Error of Approximation
SCT	Social Cognitive Theory
SD	Standard Deviation
SECS	STEM Efficacy for Children Scale
SEM	Structural Equation Modeling
SEQ-C	Self-Efficacy Questionnaire for Children
SJK(C)	*Sekolah Jenis Kebangsaan Cina*
SJKT (T)	*Sekolah Kebangsaan Tamil*
SK	*Sekolah Kebangsaan*
SPM	*Sijil Pelajaran Malaysia* (Malaysian Certificate of Education)
S-STEM	Students' Attitudes towards STEM Scale
STEM	Science, Technology, Engineering and Mathematics
STPM	*Sijil Tinggi Persekolahan Malaysia* (Malaysian Higher School Certificate)
TIMSS	Trends in International Mathematics and Science Study
TLI	Tucker Lewis Index
US	United States
WPKL/KL	*Wilayah Persekutuan Kuala Lumpur* (WPKL)

CHAPTER 1

INTRODUCTION

This study aims to understand the influence of parents and schools on the development of early adolescents' academic efficacy from a sociological perspective. Sociologists view adolescents' behaviors, orientation, and other wellness are molded by their beliefs, practices, and organization of key social groups and their larger social environment, including their academic beliefs and behaviors. To date, scholars claim that academic self-efficacy serves as the most salient predictor for adolescents' academic functioning (Affuso et al., 2017; Feldman & Kubota, 2015). Academic self-efficacy refers to a person's beliefs or certainty that he/she can accomplish a particular academic objective or achieve a specific result on a specific academic assignment (Bandura, 1997). Malaysia's schooling culture is very much academic-oriented and sees academic accomplishment as a means of future success, hence, leading academic pressure to be the most significant stressor for local learners (Ibrahim et al., 2019; Wong et al., 2019). Efficacy is regarded by local academic practitioners and scholars as one of the key academic values to study because it is defined as the protector of positive academic regulation skills (Mohtar, et al., 2019b; Yusoff, 2010).

Sociologists perceive that efficacy beliefs are derived from rapid socio-educational processes, therefore, understanding academic efficacy development should prioritize exploring the underlying social factors, processes, and patterns that determine learners' efficacy beliefs. This includes family, peers, schools, neighborhoods, and related works that aid adolescents' development (Johnson, 2015). According to Subramaniam (2019), social expectations, commitments (be morals or legal), and social networks that occur within the family, school, and society collectively influence learners' learning and guides the inter-generation transmission of social desired values, beliefs, knowledge and skills. Such influences vary across adolescents' developmental stages due to age-specific needs and to some extent, social and cultural factors (for instance, beliefs in academic success). The different achievements of learners are often ascribed to parents' commitment and expectation in educating children, the collaboration between schools and families, schools' disciplinary and learning climate, and the sociocultural beliefs and norms that facilitate student efforts. Among these factors, family and schools are generally believed to have a substantial influence at the stage of early adolescence in academic development (Subramaniam, 2019).

1.1 Background of the Study

Early adolescents spend a key part of their lives negotiating with parents and being a member of family and society (Johnson, 2015). Past literature has demonstrated that though early adolescents are more independent, and peers

have become more important to them, parents' behaviors and bonding remain influential in shaping their academic skills and behaviors (Lerner & Grolnick, 2020). Supported by different theoretical perspectives, Albert Bandura's (1997) Social Cognitive Theory explains efficacy belief as deep-rooted in the social environment, in particular, the family, school, and cultural context in which an individual has resided. Urie Bronfenbrenner's Bioecological Model of Human Development has also postulated that the regular and long-lasting form of interactions within the immediate environment (e.g., family, school, peers, and neighborhood microsystems) are the key mechanism of children's growth (Hayes et al., 2017; Shelton, 2018). To date, empirical data show that family either hinders or helps learners' educational development and attainment in diverse ways. For example, research in sociology (e.g., Johnson, 2015; Lv, et al., 2018), psychology and social psychology (e.g., Hwang & Jung, 2020; Lan et al., 2019; Otto & Karbach, 2019) have shown that adolescents who become skillful in regulating academic-relevant behaviors and emotional challenges have supportive parents who are involved in adolescents' academics, reasonable in control, emotionally supportive, and communicative. In contrast, irresponsible, and unsupportive parents are more frequently associated with lower academic attainment in adolescents.

School climate or sometimes regarded as school culture refers to a complex social phenomenon, which encompasses mainstream (e.g., social-cultural values, educational policy, and law, etc.) and contrasting elements (e.g., school types, assessment, and school activities). School culture assists in determining learners' views of academics, which, in turn either motivate or demotivate them to alter their academic behaviors (Coleman, 1961). Recent meta-analyses on school climate by Berkowitz et al. (2017), Marques et al. (2017) and Wang et al. (2020a) have continued to report that a desired school climate benefited learners' academic efficacy and other related skills.

From a sociological perspective, school climate is characterized by multiple institutional factors (private/public, racial and socioeconomic composition, degree of social and economic resources, size, and assessment system, curricular specialization, etc.), with various degrees of impact on adolescents' academic attainment, health, and socio-emotional wellness (Johnson, 2015). A growing body of research indicates that positive perceptions towards school are critical for adolescents' academic self-concepts of efficacy (Wong et al., 2019; Zeinalipour, 2021), and social support in school plays a critical role in this matter. On the contrary, students who could not 'fit in' to the school culture are often isolated by others, leading them to feel disconnected from school, hence, hindering their academic abilities (Schunk & Mullen, 2012). Locally, studies on school climate and educational outcomes have received considerable attention (e.g., Abdul Rauf et al., 2018; Adams et al., 2016; Salleh & Bakar, 2018), however, these findings were inconclusive in explaining how this construct functioned to benefit learners school outcomes. As reflected earlier, these discrepancies may be due to the varying institutional factors present in the different school samples studied.

From a sociological viewpoint, both schools and families unify to educate learners (bound by the larger contexts like educational policies, academic beliefs, and norms) in way of equipping them with specialized exercises (may differ in the form of practices but with similar educational aims) to prepare them for the later work roles as demanded by the industrial. Academic-related skills and behaviors are always families' and schools' educational priority, as in Malaysia, it is essential for future survival (Yaacob et al., 2017). In the forming of academic efficacy, Albert Bandura (1986) said a person's behaviors are greatly shaped by social processes (social role models). However, Bandura's psychosocial approach may not fully address how social forces underpin efficacy development. This study, therefore, addresses this limitation by examining the two forms of social support: parental support and school climate, and exploring how young adolescents perceived their social experiences with these two social institutes could help them to succeed in their academic attainment (e.g, their academic efficacy and other relevant skills in academic).

1.2 Problem Statement

This study examines the influence of social supports (parents and school) on young adolescents' academic efficacy from a sociological perspective. This intention was motivated by several shortages found within this field. Hamilton et al., (2011) have criticized the currently unclear descriptions of the nexus between the family and school as social agents in educating children. Likewise, Johnson (2015) found that most educational sociological studies focused on single social institutions/contexts (e.g., family, peer, school, policies, etc.), but lacked discussion of the links of these constructs (as combined impact) in educating learners. Despite adolescent studies being abundant, those that link the family, school, and academic efficacy in a single research model were rare.

Besides, although many studies found schools and parents to have significant impact on adolescents' academic efficacy, these findings were inconclusive. Detailed investigation indicate that this was caused by the use of diverse definitions of parental and school support across studies. For example, some studied the subjective feeling (general view) of being supported (e.g., Gungor, 2019a; Yarcheski & Mahon, 2016), some focused on supportive dimensions like responsiveness, academic involvement, instructional guide, etc. (e.g., Chew, 2016; Liu et al., 2019), while some differentiated support based on social agents like parents, teachers, peers, etc. (e.g., Archer et al., 2019; Marques & Lopez, 2014).

For more systematic investigation, this study conceptualizes parental support into three sub-domains: involvement, structure, and autonomy support. Among them, involvement support was vastly discussed, as compared to the effect of control and autonomy support on academic efficacy (Yan et al., 2017). To date, there are more studies on control and autonomy support with Western samples, and those with non-Western samples were debatable (Wang et al., 2007; Yan et al., 2017). As these parental support variables have predicted many other

adolescents' outcomes, it is believed that they are important for learners' academic efficacy, hence, its influence is further investigated in this study.

Also examined are the roles of fathers and mothers in fostering adolescents' academic efficacy. Hossain (2014), and Yap and Baharudin (2016) claim that there is limited empirical data concerning Asian fathers' and mothers' roles and cultural socialization factors. Locally, relevant attempts were rare and disorganized, e.g. fathers' parenting style (Hong et al., 2012), fathers' attachment and learners' depression (Yahya et al., 2019), fathers' and mothers' involvement, efficacy, and subjective well-being (Yap & Baharudin, 2015), and fathers' and mothers' childcare (Hossain, 2014). The diverse foci make comparing results less reliable, hence, in need of further examination.

Likewise, local examinations of school climate have not achieved a universal agreement on its conceptualization as well. For instance, some studied it as a subjective feeling about school (Jalapang & Raman, 2020; Mohtar et al., 2019b), and some used it as a multidimensional construct, however, vary in the combination of sub-domains (e.g, Elas et al., 2020; Rasyidah & Wafa, 2020). Moreover, these studies were related to various outcome variables like academic grades (Jalapang & Raman, 2020), anxiety (Elas et al., 2020), cyber bullying (Zhu et al., 2021) and well-being (Na'imah, 2022), but not academic efficacy, thus, making the findings less comparable. Also, these studies used high school populations, hence, leaving their applicability to young learners unknown. This study fills this gap by investigating the multidimensional effect of school climate on academic efficacy of primary school learners.

Two mediators linking parental support, school climate, and academic efficacy in this study are parent-child relationship (PCR) and hope. To date, the mediation roles of PCR and hope were mostly examined in separate analysis models (refer to Chapter 2, Sections 2.8 and 2.9). Although studies show that PCR mediates parenting and learners' academic skills (e.g, Grolnick, 2016; Hwang & Jung, 2020), fathers' and mothers' roles are not distinguished. Research on hope has mainly been conducted on adults, not adolescents (Demirtaş & Uygun-Eryurt, 2020; Zeinalipour, 2021). According to Lian and Choo (2020) who found that the influence of hope varies across cultures, local hope studies of adolescents are uncommon (Lian & Choo) and calls for further investigation. At present, insofar as is known, no other local study has included both PCR and hope in a single multiple mediation model, or even examining fathers' and mothers' PCR separately, which therefore makes this study unique and meaningful.

This study analyzes adolescents' academic efficacy through two aspects: overall academic and STEM efficacy. In 2017, the implementation of the revised Primary School Standard Curriculum (*Kurrikulum Standard Sekolah Rendah* [KSSR]) featured shifting from traditional content-based education to the learning of higher-order thinking skills (Ministry of Education [MOE], 2013). This shift is expected to be more demanding of learners' academic abilities than before, thus previous findings of academic efficacy that reflect on learners' academic abilities

at present are questionable and would require re-examination. Although STEM education was introduced in the revised *KSSR*, there is little known about students' efficacy in STEM learning, particularly at the primary school level (Jayarajah et al., 2014). As academic efficacy is found to be the strongest predictor for academic success, examining young learners' STEM efficacy may prove insightful in suggesting preventive or perseverance strategies for retaining primary school learners' STEM learning interest.

1.3 Research Objectives

This study aims to examine the associations between parental supports (paternal and maternal), school climate, parent-child relationship, hope, and primary school students' academic efficacy in *Wilayah Persekutuan Kuala Lumpur* (WPKL). This study has six objectives, specifically, to:

1. Identify the level of parental support, school climate, parent-child relationship, hope, and academic efficacy.
2. Examine the influence of parental supports namely involvement, structure, and autonomy support on academic self-efficacy (overall academic and STEM efficacy) respectively.
3. Examine the influence of school climate on academic self-efficacy (overall academic and STEM efficacy).
4. Investigate the mediating roles of the parent-child relationship and hope in the relationship of parental supports namely involvement, structure, and autonomy support on academic self-efficacy (overall academic and STEM efficacy), respectively.
5. Investigate the mediating role of hope in the relationship of school climate on academic self-efficacy (overall academic and STEM efficacy).
6. Verify the STEM Efficacy for Children Scale (SECS) using confirmatory factor analysis.

1.4 Research Questions

This study asks six research questions:

1. What is the level of parental support, school climate, parent-child relationship, hope, and academic efficacy?
2. Do parental supports namely involvement, structure, and autonomy directly predicts academic efficacy (overall and STEM efficacy)?
3. Does school climate directly predict academic efficacy (overall and STEM efficacy)?
4. Do parent-child relationship and hope mediate the effect of each parental supports namely involvement, structure, and autonomy on academic efficacy (overall and STEM efficacy)?
5. Does hope mediate the effect of school climate and academic efficacy (overall and STEM efficacy)?

6. Does the adapted STEM Efficacy for Children Scale (SECS) have an acceptable measurement model as measured by model fitness?

1.5 Hypotheses of the Study

Based on the objectives, 16 hypotheses were developed to serve the research objectives. These hypotheses are arranged based on the sequence of research objectives:

1.5.1 Hypotheses Based on Objective Two

H1: Fathers' / Mothers' Involvement has a significant effect on Overall Academic Efficacy.
H2: Fathers' / Mothers' Structure has a significant effect on Overall Academic Efficacy.
H3: Fathers' / Mothers' Autonomy Support has a significant effect on Overall Academic Efficacy.
H4: Fathers' / Mothers' Involvement has a significant effect on STEM Efficacy.
H5: Fathers' / Mothers' Structure has a significant effect on STEM Efficacy.
H6: Fathers' /Mothers' Autonomy Support has a significant effect on STEM Efficacy.

1.5.2 Hypotheses Based on Objective Three

H7: School Climate has a significant effect on Overall Academic Efficacy.
H8: School Climate has a significant effect on STEM Efficacy.

1.5.3 Hypotheses Based on Objective Four

H9: Fathers' / Mothers' Involvement impacts Overall Academic Efficacy indirectly through Parent-Child Relationship and Hope.
H10: Fathers' / Mothers' Structure impacts Overall Academic Efficacy indirectly through Parent-Child Relationship and Hope.
H11: Fathers' / Mothers' Autonomy Support impacts Overall Academic Efficacy indirectly through Parent-Child Relationship and Hope.
H12: Fathers' / Mothers' Involvement impacts STEM Efficacy indirectly through Parent-Child Relationship and Hope.
H13: Fathers' / Mothers' Structure impacts STEM Efficacy indirectly through Parent-Child Relationship and Hope.
H14: Fathers' / Mothers' Autonomy support impacts STEM Efficacy indirectly through Parent-Child Relationship and Hope.

1.5.4 Hypotheses Based on Objective Five

H15: School Climate impacts Overall Academic Efficacy indirectly through Hope.
H16: School Climate impacts STEM Efficacy indirectly through Hope.

1.6 Significance of the Study

First, findings of this study adds knowledge to the local literature concerning the patterns and forms of parental support (involvement, structure, and autonomy support) used by Malaysian urban parents. By separately investigating the fathers' and mothers' multifaceted supports, this study provides insight into Malaysian parenting notions and may help to suggest positive parenting strategies suited to the Malaysian cultural context that is more collectivist and academic-oriented (Shing, et al., 2020). Potentially, this information may add to consolidating understanding of the field of family ecology and its development in the Malaysian context.

Second, findings of this study brings to light the extent of early adolescents' academic efficacy that is molded by contextual factors (parental support, school climate) based on the Malaysian context. This information is significant, as it verifies how relevant the present findings as compared to similar studies done locally and in other cultures. Malaysians practice collectivism and live in a culturally and ethnically rich environment (Hossain, 2014), which results in diverse and complicated family and schooling experiences compared to the individualistic countries. As the influence of contextual factors (e.g. parenting and school) are highly sensitive towards the social and cultural context, it is then crucial to investigate its impact on children's academic functioning with local insight.

Third, the findings of this study clarifies the forming of academic beliefs from a sociological perspective, where academic efficacy is seen within the larger context of complex social systems within a collectivist culture. These findings provide alternative ways of modifying the system-level variable. Examples include to improve school climate, to emphasize the use of a particular type/ level of parental support, or to improvise the parenting roles of fathers and mothers in cultivating learners' academic skills as demanded by the school and local society. This information is also useful to plan or evaluate the efficiency and relevance of current programs and intervention related to early adolescents' academic success.

Fourth, findings of this study contribute to program/intervention design/development, the current literature and also future studies. The development of STEM Efficacy Children Scale (SECS) as a valid and reliable instrument to uncover local young learners' STEM efficacy contributes significantly to Malaysian education, as a socioculturally appropriate STEM

instrument designed for early adolescents is currently absent (Jayarajah et al., 2014; Maltese & Tai, 2011). Notably, SECS is the pioneering instrument to examine Malaysian young learners' STEM efficacy in three domains: Mathematics, Science, and Engineering. Results derived from SECS could be used to explain the decrease in local learners' STEM competencies (Ref), thus highlighting to relevant agencies and school communities the necessity of providing suitable intervention to increase students' efficacious beliefs in STEM.

1.7 Scope and Limitation of the Study

This study measures the influence of parental support and school climate on learners' academic efficacy, and the mediation effects of PCR and hope in linking these variables. There are several factors in this study that limited the generalizability of the its findings.

First, this study is quantitative, hence, the measurement of constructs is solely dependent on the questionnaire content. It is therefore not possible to explain in-depth how parental support and school climate affect academic efficacy through the practical socialization processes, nor to describe how PCR and hope could emerge through such social experiences and then affect efficacy development. Thus, the "partnerships" of parents and schools that feature collaboration between at-home and at-school educational processes, and how they comprehend each other in assisting adolescents' academic learning as outlined in the applied theories are not directly visible.

Second, this study is limited by the selection of the studied variables. For parental support, it includes involvement, structure, and autonomy support. These constructs could be further subdivided according to literature (e.g., involvement: warmth, communication, emotional support, etc.; structure: academic guide, free time supervision, etc.; autonomy support: general, academic freedom, etc.) but are not. For school climate, this study analyzes its combined effect. This construct is multidimensional and comprises many sub-constructs (e.g., feeling relatedness, instructional guide, safety, etc.) which could be separately analyzed but are not. Likewise, the PCR and hope are analyzed in whole and not separated into sub-domains.

Third, this study involved upper primary school learners (9 to 11 years old) in WPKL. Hence, it is uncertain that similar results could be obtained by involving learners from lower primary levels. At younger ages, parents' and schools' use of support vary in terms of its amount, types, and strategies, with younger children requiring different levels of demands. Additionally, the current samples are selected from government schools situated in fully urbanized regions (WPKL).

1.8 Definition of Terms

This section discusses the conceptual and operational definitions of key terms in this study. This includes parental support, involvement, structure, autonomy support, school climate, parent-child relationship, hope, and academic self-efficacy.

1.8.1 Parental Support

Parenting refers to the socialization process that allows parents to transmit habits, knowledge, values, and goals (demanded by society) to their offspring, in order to survive in society (Johnson, 2015). Parental support is operationally defined as parents' involvement support, structure support, and autonomy support. The measures of these constructs are adapted from the Perceptions of Parents Scale - The Child Scale (POPS–Child Scale) (Grolnick et al., 1991), and the Parenting Style and Dimension Questionnaire (PSDQ) (Robinson et al., 1995).

Parental involvement support is operationally defined as parents' desires in knowing children's lives, providing warmth, being available and communicative, and being concerned with daily routines like schoolwork (Grolnick et al., 1991). Parental structure support refers to parents' use of reasonable behavior control to support their children, such as monitoring children's daily and school routines, disciplining, supervising educational processes and free time activities (Grolnick et al., 1991; Robinson et al., 1995). Parental autonomy support refers to the degree of freedom parents allow children in being self-initiating and autonomous (Grolnick et al., 1997; Wong, 2008). It assesses the tendencies of parents in reasoning with children when they misbehave and to use guilt induction, listening to children's opinions, allowing decisions, and disagreement of tolerance.

1.8.2 School Climate

Mitchell et al., (2010) define school climate as the norms of a school shaped by its values, beliefs, and attitudes. It is shared and practiced between students, teachers, and administrators within the school context. In this study, the school climate is measured using the New Jersey School Climate Survey (Hespe et al., 2014.). School climate is operationally defined as complex school culture formed by multidimensional constructs, including learners' perceptions towards the school's physical environment (schedule, building), teaching and learning (perceived classroom support, instructional quality, and instructional challenge), morale in the school community (perceived belonging), student relationships (openness, honesty and respectful), parental support (school-home communications, home-based homework support), safety (physical safety in and

around the school), and emotional environment (fairness, general impression on students' behaviors).

1.8.3 Parent-Child Relationship (PCR)

By view of the Attachment Theory by Bowlby (1984), the PCR is defined as an attachment relationship or named relational bonding. This bonding is derived through interaction patterns between parents and child. This study measures the PCR using the Security Scale (Kerns et al., 2001). It is operationally defined as children's perceived security of their relationship with parents in three aspects: the degree to which a child believes the attachment figure as being available and responsive; the tendency of a child to rely on the attachment figure when feeling stressed (as safe-haven); and a child's reporting on interest and ease to communicate with the attachment figure.

1.8.4 Hope

By view of the Hope Theory, Snyder (2000, 2002) conceptualizes hopeful thinking as the interplay of three aspects, namely thoughts, feelings, and behaviors. "Hope" refers to positive and negative emotional experiences derived from a person's perceptions about his / her success or failure when attaining desired goals. This study measures hope using the Children's Hope Scale (CHS) (Snyder et al., 1997). Hope is operationally defined as children's perceived positive expectancies in two domains, namely agency, and pathways. Agency measures children's positive expectancies towards the present and future, whereas pathway measures children's perceived ability in finding workable routes to attain goals.

1.8.5 Academic Efficacy

Academic self-efficacy is defined as a person's self-appraisal of their abilities in managing and executing actions to achieve educational goals (Bandura, 1977). According to Bandura (1997), efficacious beliefs facilitate a person's positive thinking, feeling, self-motivation, and actions. This study examines two academic efficacy domains: overall academic efficacy, and STEM efficacy.

The academic efficacy (overall) is measured by the Self-Efficacy Questionnaire for Children (SEQ-C) (Muris, 2001), and is operationally defined as early adolescents' perceptions of self-regulation and control in managing academic matters in general (e.g., ability to concentrate, confident in examinations, independent in learning). STEM efficacy is operationally defined as children's perceived self-competencies in understanding and coping with STEM-related subjects (Mathematics, Science, and Engineering), and perceived abilities to

apply learned knowledge in STEM learning. It is measured by the STEM Efficacy Children Scale (SECS).

1.9 Chapter Summary

This chapter introduced the study and its research background. The research problem was stated, which led to the research questions asked and justified the objectives of this study. The research hypotheses were then listed. This chapter also discussed the significances of this study. The definitions for terminology were then provided to assist in understanding the application of such terminology within this study. The next chapter reviews relevant past literature relevant.

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