

# Temperament and Parental Attachment on Early Adolescents' Socio-emotional Adjustments

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**Abstract.** This study aims to examine relationships between temperament, parental attachment and early adolescents' social emotional adjustments. Using self-administered data collected from 1484 early adolescents aged 12 to 15 years old, structural equation modeling was employed to analyze the causal relationships. The hypothesized model was well fitted. The findings revealed that positive affectivity related to strengths and negative affectivity related to difficulties. These relationships were partially mediated by parental attachment. There existed only indirect effects and not direct effects between the links of positive affectivity-difficulties and negative affectivity-strengths. The study advanced understanding of the importance of parental attachment so as to facilitate early adolescents in achieving better goodness-of-fit in accordance with individual temperament differences.

**Keywords:** Temperament, Parental attachment, Socio-emotional adjustments, Structural equation modeling.

## 1. Introduction

One of the aspects that play a pertinent role in promoting adolescents healthy development is socio-emotional development. It reflects an individual's well-being in emotions, personality, relationships with other people and within the social contexts [1]. In studying developmental psychology, the emotion domain should not be viewed as interdependent from the social domain. Putting these two domains together, socialization is achieved through communication which loaded with emotions; meanwhile, adolescents adjust their relationships with others to fulfill the emotion needs. Being a socioemotional competent individual was found to engage fewer in defiant activities, antisocial and misconduct behavior [2, 3]. Hence, it is deemed necessary to focus on healthy growth and development of adolescents to produce socially and emotionally well-adjusted young generation.

In Malaysia, there is a marked and drastic increase of violent and property crime among juveniles [4]. The prevalence of these juvenile cases unveils the severity of lacking in healthy socioemotional adjustment. Statistics of the Royal Malaysian Police from Year 2002-2004 reported a total of 14, 691 juveniles who were arrested for committing offences [5]. Beyond this figure, what elevated the society concern is the report of 6 murders and 208 rape cases committed by adolescents aged 13 to 15 years in the same year. The statistics may not be represented the true scenario of the society as many incidents had gone unreported. Given the worrying state of disruptive behavior among the young, prevention from dysfunctional socioemotional behavior deems necessary to guide them becoming productive and functional member of the society.

As socioemotional maladjustments have been notoriously hard to treat, there is a growing attention on prevention and early intervention. In order to intervene effectively, an understanding of the factors contributing the development of child socioemotional strengths and difficulties is vital. Mangelsdorf and Frosch [6] delineated that both temperament and attachment quality are thought to be major organizers of socioemotional development in children. When temperament particularly affects the relationships in parent-child dyads, it might be predicted that it would be associated with attachment outcomes.

### 1.1. Theoretical Background

Goodness-of-Fit Model by Thomas and Chess [7] promotes that adjustment develops from the match between individual dispositions and parenting factor. Co-occurrence of temperamental and environmental variables, mainly from the parents, exerts effect on children beyond their separate contributions. Goodness-of-fit involves creating rearing environment that recognize each child's temperament while encouraging

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more adaptive functioning. In other words, relationships with parents that create a good fit with the child's temperament will help the child achieve more adaptive responses to the changing environment. Later studies supported that individuals variously respond to environmental factors based on their temperament traits [8].

A significant proportion of recent studies investigated the complex interplay between different temperament dimensions (generally positive and negative affect) and parental factor on adolescent's adjustments. Negative affectivity has been widely recognized as risk factor in the development of maladaptive behavioral problems [9-11]. However, in the context of poor parent-child relationship, higher negative affect were found to exhibit more difficulties [12, 13]. This is also evidenced in pre-adolescents sample in the context of high maternal rejection [14]. On the other hand, child's strengths as measured in prosocial behavior or social competence have been linked to the dispositional positive affectivity [15-17]. However, despite the relatively few studies on the influence of attachment with parents on this link, Davidov & Grusec [18] found parental warmth exerted effect on positive emotion regulation which in turn led to prosocial outcome relations.

Based on this model, this study examined three constructs, i.e., temperament, parental attachment and socioemotional adjustments, which have a causal link to one another. Specifically, objective of the study was to validate the hypothesized interrelationships among the constructs of temperament (i.e., positive and negative affectivity), parental attachment and socioemotional adjustments (i.e., strengths and difficulties) among early adolescents in Malaysia. In addition, the study also examined the possible mediation effect of parental attachment on the link of temperament-socioemotional adjustments.

## 2. Methodology

### 2.1. Research Design and Data Collection

A sample of 1531 secondary students aged 12 to 15 years was drawn from a large national study on parenting and child's well-being [19]. The sample was recruited through 49 government secondary schools in five regions in Malaysia: Selangor, Kelantan, Malacca, Penang, and Sabah. Using probability proportional to size sampling, the probability of respondents being sampled in this study was proportional to its population size. Data were collected in group using a self-administered questionnaire at the respondents' schools. Permission to conduct the study at the chosen schools was obtained from the Ministry of Education Malaysia, State Education Departments, and principals of each school. Additionally, the study was approved by the University Putra Malaysia, Faculty of Medicine and Health Sciences' Ethics Committee for the study's procedures and participation of human subjects. All respondents gave consent to take part in the present study. The final sample consisted of 1484 adolescents, with exclusion of incomplete responses and outliers during the analysis stages.

### 2.2. Measures and Validity

Confirmatory factor analysis was executed to test validity of each measure. Given the large number of items and ordinal data type commonly used in social science studies, it is foreseeable these scales will violate the assumption of non-normality. Thus, analysis will be proceeded with item parceling method to avoid inherent non-normality when first-level CFA do not fit well [20]. To evaluate model fit, a number of indices were reported, including the normed Chi-square ( $\chi^2/df$ ), Root Mean Squared Error Approximation Index (RMSEA), Comparative Fit Index (CFI), and Tucker-Lewis Coefficient (TLI). It is generally recognized that to support model fit, a consensus among the following is needed: normed  $\chi^2 \leq 5.0$ , RMSEA  $\leq 0.05$ , CFI  $\geq 0.90$ , and TLI  $\geq 0.90$  [21].

Parental attachment perceived by adolescents was measured using mother version of Inventory of Parent and Peer Attachment (IPPA) [22]. IPPA comprised of 3 subscales, i.e., trust, communication and alienation. These items were rated on 5-point Likert scale, ranging from 1 (*almost never or never true*) to 5 (*almost always or always true*). As expected, the first-level CFA resulted in a poor fitting model. Item-to-construct parceling technique was used as a solution for reductions in various sources of sampling error and more parsimonious model. The solution resulted in an adequate fit 2-factor parental attachment model, which two constructs, i.e., trust and communication were collapsed into one construct ( $\chi^2 = 216.636$ ,  $p = .000$ ,  $\chi^2/df = 5.038$ , RMSEA = .072, CFI = .940, TLI = .923).

Temperament was measured using an adapted version of the Early Adolescent Temperament Questionnaire-Revised (EATQ-R) developed by DeBoo and Kolk [23]. The original theory-based EATQ-R [24] consists of 65 items was modified by DeBoo and Kolk [23] in order to eliminate items that lead to lower

reliability. Two temperament dimensions measured in the present study were positive affectivity and negative affectivity. There were 8 items tapping positive affectivity, and 9 items were negative affectivity. All items were rated on a 5-point Likert scale ranged from 1 (*always not true*) to 5 (*always true*). Using the same parceling solution, a 2-factor temperament appeared to greatly improve the first-level CFA of temperament scale. The parceled model shown a good fit ( $\chi^2 = 65.896$ ,  $p = .000$ ,  $\chi^2/df = 5.069$ , RMSEA = .072, CFI = .963, TLI = .940).

Strengths and Difficulties Questionnaire (SDQ) [25] was used to assess early adolescents' socioemotional adjustments. Respondents completed all 25 items of the scale which rated on a 3-point Likert scale ranging from 0 (*not true*) to 2 (*certainly true*). The five distinct dimensions covered in SDQ, which are conduct problems, hyperactivity, emotional symptoms, peer problems, and pro-social behavior, well depict adolescents' adjustments socially and emotionally. Pro-social behavior subscale that consists of five items was used to represent respondents' strengths level. The remaining 20 items of the four subscales assessed respondents' difficulty level. First-level CFA of the strengths construct yielded a good fitting model after a low loading item (i.e., item 2) was omitted. On the other hand, a 4-parceled difficulties confirmatory model derived from isolated parceling method also obtained good fit. Overall, SDQ with first-level CFA of strengths subscale inter-correlated with parceled difficulties subscale fitted the data well ( $\chi^2 = 89.600$ ,  $p = .000$ ,  $\chi^2/df = 4.716$ , RMSEA = .049, CFI = .956, TLI = .936).

### 3. Results

Analysis of the full-fledged structural equation modeling was accomplished using AMOS version 20 maximum likelihood estimation. Illustrated in Figure 1 is the resulting final structural model with overall fit indices satisfied their respective cutpoints ( $\chi^2 = 1200.502$ ,  $p = .000$ ,  $\chi^2/df = 4.168$ , RMSEA = .046, CFI = .920, TLI = .910). Given that Chi-square statistic is sensitive to sample size, it nearly always rejects the model when large samples are used [26]. However, an alternative index to minimize the impact of sample size was sought, the normed chi-square ( $\chi^2/df$ ), achieved an acceptable ratio for this statistic. Other indices indicated that the model fitted the data well in the sense that the hypothesized model adequately described the sample data. In addition, path coefficients suggested that all the factor loadings and paths were significant except the path from positive affectivity to difficulties and negative affectivity to strengths. In order to test whether parental attachment carries influence on temperament dimensions to socioemotional adjustments, Sobel mediation test [27] was used and revealed statistical significant results for all paths tested.

The findings thus implying the following causal links:

- Temperament (both positive and negative affectivity) significantly related to parental attachment.
- Parental attachment significantly related to socioemotional adjustments (both strengths and difficulties)
- Positive affectivity significantly related to strengths, but not difficulties
- Negative affectivity significantly related to difficulties, but not strengths
- Parental attachment partially mediated the links of positive affectivity-strengths and negative affectivity-difficulties
- There were indirect effects for the links of positive affectivity-difficulties and negative affectivity-strengths through parental attachment

### 4. Discussions and Conclusions

The structural equation modeling provided evidence that the hypothesized model was partially supported. More specifically, different temperament dimensions uniquely correlated with specific aspects of socioemotional adjustments. Positive affectivity was found to be contributed in strengths development among early adolescents, while negative affectivity tends to increase the risk of having more difficulties. Nonetheless, the study found no support on positive affectivity as protective effect from difficulties. Additionally, negative affectivity as risk factor that hinders adolescents from pro-social behavior was not evidenced in the present study. Regardless of these differential outcomes of positive and negative affectivity towards adolescent's strengths and difficulties adjustments, adolescents are shaped within the context of attachment with their parents. There existed mediation and indirect effects of parental attachment in the links between specific temperament dimensions and certain aspect of adjustments.

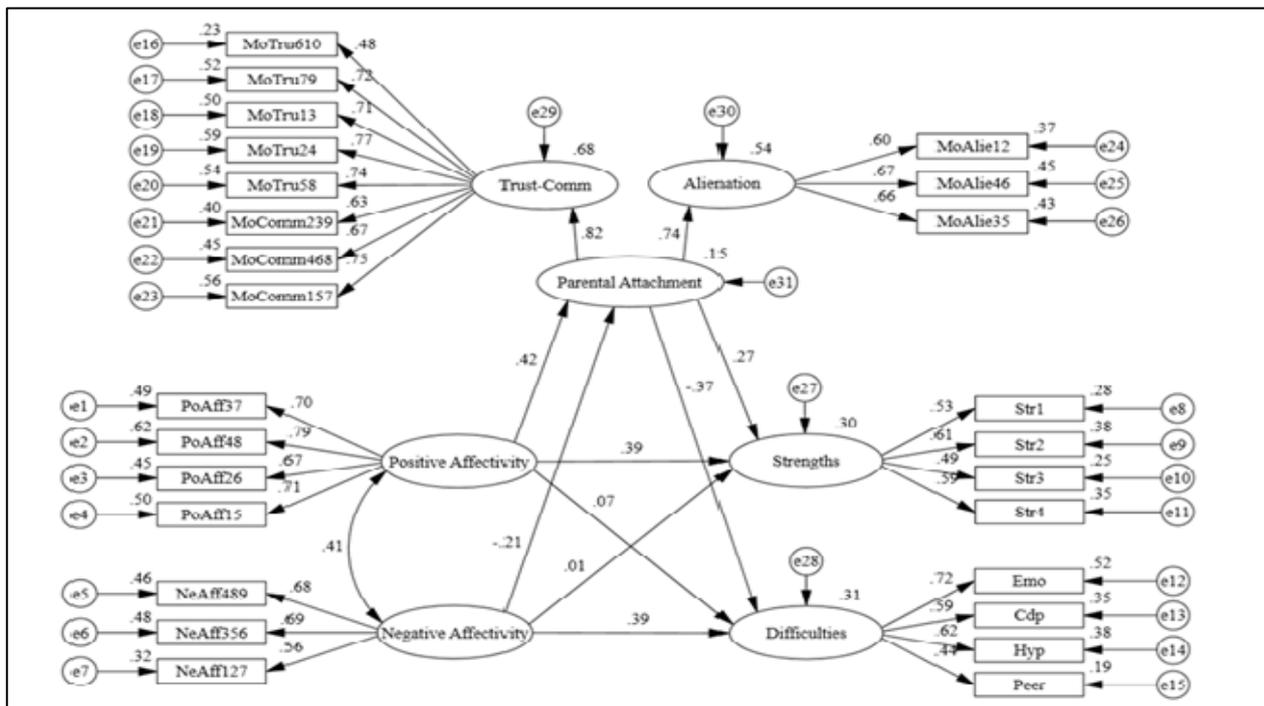


Fig. 1: Full-fledged structural model.

The study findings were in accordance to the contention of goodness-of-fit model, in the sense that although temperament has a genetic foundation, parents could have influence to do with maintaining or changing the outcomes. Adolescent with difficult temperament demonstrated increased risk for adjustment problems in the lacking of secure attachment with parents. Meanwhile, it is not impossible that high negative affectivity if coupled with quality parent-child relationship could buffer adolescents from socioemotional maladjustments. In sum, understanding of links between temperament and socioemotional adjustments has come to long way and it can be concluded that specific temperament traits impact on particular aspects of socioemotional adjustments, either directly or indirectly through attachment with parents.

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