The Psychological Well-being of Taiwanese Youth: School versus Family Context over the Life Course

(An analysis of Taiwan Youth Project Year 2000-2005)

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The Research Issue

Most youth studies in the social science circle investigate typical subjects such as peer and parental influence on values and behaviors, academic achievement and occupational experiences, intergenerational transmission of values and behaviors, deviance and physiological reaction, individual psychological well-being (Gecas and Seff, 1990; Furstenberg, 2000; Yi, et al., 2004, 2006). Among East Asian societies, the ascribed role for youth aged 12-18 has been obedient child and diligent student. Dominated by long hours of study at school, at the cram class at night and over the weekends, Taiwanese adolescents are expected to sacrifice recreation and leisure time for the goal of getting ahead in the comprehensive entrance examination (Yi and Wu, 2004). Among two such entrance examinations, getting into the desired senior high school has become more competitive than entering the college in Taiwan due to substantial expansion of higher educational institutions since the mid-1990s. This paper aims to explore possible effects of the competitive social milieu for youth development. We will focus on two major social institutions, namely family and school, and will examine their influence on the living experiences of Taiwanese adolescents. Several recent reports have documented the importance of social capital from family and school on students' academic outcome (McNeal,1999; Crosnoe,2004). This paper will study another aspect--the psychological well-being of the youth, and will analyze the family and school effects on the growth curve of Taiwanese youth.

For longitudinal panel data, the developmental course of psychological well-being as the outcome variable is clearly the most suitable research topic. Situated in the competitive context, Taiwanese youth needs to face the achievement concern from parents at home as well as from teachers and classmates at school. Furthermore, educational pressure may differ according to different years at school which represents different distance from the examination date. Therefore, to delineate the onset of individual psychological well-being, and to trace its development over time, especially the possible fluctuation toward the end of senior high school will allow us to ascertain the typical pattern revealed by Taiwanese youth in this particular life course.

Literature

Family and School as Important Social Capital

Family is the significant socialization agent for adolescents. Family capital or family-based social capital has been documented to influence the educational as well as the occupational achievement (Sewell and Hauser, 1975; Coleman, 1987, 1991; Teachman, 1987; Epstein, 1991, 1992; Hetherington, 1998; Crosnoe, 2004). McNeal made persuasive argument and clearly identified parental involvement, such as parent-child discussion over the educational matters at home and involvement in the parent-teacher organization at school, to be useful social capital contributing to adolescent's academic improvement (1999). In other words, parental involvement occurred at home or at school is an important social capital accounting for better functioning of the youth. Although previous reports raise the question of parental help having negative relations with child's academic outcome (e.g., Horn and West, 1992) or not making significant effect (e.g., Epstein, 1991; Keith, 1991), parental involvement remains to be viable factor for adolescent development (McNeal, 1997; Coleman, 1991). The inconsistent finding is often explained by the reactive hypothesis as proposed by Epstein (1988) who contends that the negative outcome of parental involvement can be attributed to the fact that parents assist children who need help with school work. Furthermore, the utility of parental involvement, if indicated by the academic progress, is shown to be affected by the emotional component of parent-adolescent relations in the family (Carbonaro, 1998; Call and Mortimer, 2001; Crosnoe and Elder, 2004). Adolescents who have distant relations with parents have lower academic performance and are more likely not to benefit from the school-based capital (Crosnoe, 2004). The interplay between family and school is thus verified.

Another aspect worth noting is that most findings on adolescent development are consistent with Lareau's contention that social class difference results in different experience and perception of the educational institution (1989, 2003). Less resourceful youth, partly due to parental constraints in initiating interactions with teachers and partly owing to value held toward schools, tends to benefit less from the resourceful school setting. In other words, although there are reports indicating the importance of positive school environment for the success of disadvantaged students (Lee and Smith, 1997), more studies seem to suggest that the effect of parental involvement is magnified for upper class advantages students, but less likely to be transmitted for less resourceful students (Schneider and Colemen, 1993; Morgan and Sorenson, 1999; McNeal, 1999; Crosnoe, 2004).

The importance of parental involvement for youth development is illustrated by

Crosnoe (2004) who argues that school-based social capital such as student-teacher bonding, parent-child relations in school or the average parent's education affects the academic outcome of adolescents. It is clear that family-related social capital at the aggregate level may function well in the school context. Therefore, the school environment is often proposed to be an important social capital resulting in different growth trajectory of the youth (Morgan and Sorenson, 1999; Harris, et.al., 2002; Crosnoe, et.al., 2003). However, perhaps limited by the data available, most school-related social capital is still indicated by various forms of parental involvement. A direct measurement of school capital, especially regarding the normative environment of the school, will greatly contributes to our understanding of mechanisms affecting the consequent growth trajectory of youth.

It is precisely the intention of this paper to delineate possible effects of family versus school based social capital in explaining the developmental course of Taiwanese youth. Since academic outcome appears to be a more focused subject, we will examine the psychological well-being as an important outcome in the youth development. The well-being issue is of particular salience for Taiwanese youth who are socialized under the competitive educational system on a daily basis. It will be interesting to find out what kind of impact the entrance examination and its related familial and school context has on students' psychological state.

The Psychological Well-being of Taiwanese Youth

Individual psychological well-being has been studied from various aspects. Besides the general happiness level or other composite scales (Amato and Sobolewsk, 2001; Liao, et al., 2005), depression is perhaps the most reported phenomenon (Brown,2000; Turner,1982;Wu and Lei,2003)。 From the life course consideration, academic performance and psychological well-being are two most important outcomes for a typical youth. More efforts seem to be put on how family and school resources affect the academic as well as the subsequent occupational development of the youth. On the other hand, studies on the psychological well-being of the youth which is often indicated by the depression scale have focused on the parental and peer influences, especially the emotional connection or the interpersonal relationship quality (Fitzpatrick, et.al., 2005; Haavet, et.al., 2005; Denny, et.al., 2004). This paper will use depression as the psychological outcome of the developmental trajectory of the youth. However, different from previous studies, normative and cultural dimensions pertaining to the family and school context will be analyzed and compared for their relative importance in explaining youth's depression level.

The Family Context

Family relation is undoubtedly the most salient factor accounting for the general psychological well-being of the youth. Parental support has been repeatedly shown to be positively related to better cognitive, behavioral and psychological outcomes (Gecas and Seff, 1990; Fitzpatrick, et al., 2005). The effect of family support as an important social capital serves as the protective factor reducing negative symptoms for the youth. This argument fits well with the buffering hypothesis proposed by Wheaton (1983, 1985) in that family support provides buffering function against the hazardous circumstances. Empirical evidence also supports the importance of family support and caring to be crucial for healthy youth development, especially for those exposed to risky environment (Denny, et.al., 2005). Nevertheless, most relationship variables remain to be at the dyadic level between youth and one of his or her significant other. Since family culture or normative environment embedded in the daily family interaction usually exert important influence, it is imperative to examine the overall family relationship quality at the family level. In other words, whether family members usually cooperate/support or compete/hostile to one another plays as the structural opportunity or constraint at the family level and needs to be considered in explaining the individual psychological well-being.

On the other hand, parental control, especially in the form of monitoring behavior, has produced inconsistent findings. The key perhaps lies in the perception of the youth. Adolescents seeking greater freedom from parents may perceive parental control as coercive and react negatively to parent's authoritarian control (Baumrind, 1978; Peterson and Rollins, 1987' Bulcroft, et.al., 1996). Those who experience both high level of support and inductive control from parents may perceive the caring aspect from the authoritative parenting and tend to result in positive outcomes and to identify with parents (Ibid., Maccoby and Martin, 1983; Gecas and Seff, 1990; Owens, et.al., 1996). The more restrictive parenting style in the Chinese context—termed as "Guan"—has been illustrated in numerous reports (Shek, 1998; Chao, 1994). The major argument is that Guan has been a culturally prescribed parental responsibility and children who are objects of the socialization process are likely to perceive the positive aspect of the parental control. But the validity of Guan in terms of expected positive outcome between parent-child relations awaits further empirical examination. Since monitoring behavior is the most frequently observed parental practice in the Chinese context, it will be interesting to find out how it is related to the psychological outcome of the youth.

Results from Taiwanese setting point to similar patterns in that family relations

--more so than family structure or significant family life events—appear to be the most significant factor explaining adolescent's depression (Pen, et al., 2004; Jou and Hsieh, 2004). Depression is further specified by different trajectories (Wu, et.al., 2004) and factors relating to its developmental patterns are shown to vary by different family dyadic relations (Wu and Li, 2001; Jou, 2005). In addition, family support is found to intervene between stressors and well-being with the expected buffering effect (Jou and Hsieh, 2004). More extreme negative family experiences, such as family disruption, physical or emotional neglect, result in depression as well as other destructive behaviors (Wu, 2003; Wu and Lei, 2001; Wu and Li, 2001). It is clear that the research concern mostly relies on typical relationship qualities among family members. To investigate possible effects beyond the dyadic level into family level will contribute to our overall understanding of the dynamic process occurred within the family context. Given the non-individualistic orientation of Taiwanese society, the analysis of possible effects from family cohesion as well as from family strategy will make important additive values to the current literature on the psychological outcome of the youth.

The School Context

A recent trend of youth studies appears to be a special focus on the school context. Since most adolescents worldwide spent a substantial time at school, school experiences especially peer and teacher influences are assumed to play vital role for the youth development. Take the psychological well-being or depression studies for example. *Individual factors* such as school grades, peer relations, interaction with teachers, feelings toward or connections at school, and *school or class factors* such as violent or threatening circumstances, success pressure at school, class deviance level ((Jessor, 1993; Fitzpatrick, et. al., 2005; Wu and Lei, 2005; Denny, et. Al., 2004; Haavet, et. Al., 2005) have been documented to produce significant effects on the depressive syndrome youth expressed. These reports encompass adolescents from minorities in the U.S., students from a Scandinavian city, alternative education students from New Zealand as well as typical middle-school students in Taiwan. It can be seen that a common concern of factors accounted for risk-reducing versus negative life experiences is shared.

Furthermore, having someone at school whom adolescents can turn to in times of need or who is perceived as a caring person significantly enhance the psychological adjustment (Fitzpatrick, et.al., 2005). Here, teachers enter as potential candidates leading to the better adjustment of youth at school. A supportive teacher can increase feeling of safety for adolescent students (Jou and Hsieh, 2004) and will thus

reduce the risk of depression (Wu, et.al., 2004). Peer group formation has received consistent attention in explaining the academic and social developmental trajectory of youth (Wigfield, et.al., 1998; Kane and Rouse, 1999; Cairns, et.al., 1995). To compare oneself with peers at school or at community may result in effects as suggested by the reference group theory (Bassis, 1977; Marsh and Parker, 1984). Specific findings evidence the importance of class context in the account of individual deviant behaviors for adolescents (Wu and Lei, 2005). Similar argument can be extended to the aggregate level in that class culture, whether be cooperative or competitive, will have impact on adolescent's psychological outcome. Since the latter perspective has been less explored, this paper will make special efforts to examine how class cohesion and competition function in affecting the individual depression level.

Another aspect often investigated is the relative importance between family and school in terms of their effects on the youth development. Earlier studies proposed that parental influence, relative to that of peer's, seem to exert greater impact on the educational or future plan, but peer influence sustains its importance in lifestyles and other behavioral dimensions (Reed, et al., 1986, Smith, 1985; Gecas and Seff, 1990). More recent reports support the peer influence although families are considered to practice indirect influence through management strategies, including selecting suitable environment for adolescents to spend time (Lareau, 1997; Harris, 1998; Furstenberg, 2000). In other words, to compare the potential influence from the family versus the school context will allows us to delineate sources of specific mechanisms affecting the growth trajectory of the youth. It also provides basis for further analyses on the linkage between school versus family and the consequent development of the youth from the life course perspective.

Therefore, this paper will utilize the longitudinal panel data to investigate the development of psychological well-being of Taiwanese youth. Depression will be the indicator and the trajectory of depression from early adolescence (i.e., 12-13 years old or 1st year of junior high school) to middle adolescence (i.e., aged 18-19) will be the time span for examination. Given the particular educational system in Taiwan, the entrance examination from junior high to senior high which occurs after the 3rd year is assumed to be an optimal point of depression for the majority of adolescents. The analysis will hence be directed to locate the beginning status of the depression level, follows the linear changing growth curve, and capture the possible fluctuating quadratic changes afterwards. It is expected that the life course during middle school years is variant for youth and is affected by family and school related factors,

particularly those reflecting the aggregate or beyond dyadic characteristics.

In short, this paper will examine the developmental trajectory of depression for Taiwanese youth. The study is characterized by several intended efforts:

(1) To compare the relative importance of family versus the school context in explaining the developmental pattern of depression overtime.
(2) To illustrate the competitive educational environment as the structural constraints affecting the general youth development in Taiwan as well as in other East Asian societies.
(3) To focus on the effects of cultural or normative variables at the group level.
(4) To utilize the latent growth curve method suitable for the longitudinal panel data.

Methods

1. Data and Sample

Data are derived from a longitudinal panel study "The Taiwan Youth Project" conducted by Institute of Sociology, Academia Sinica, Taiwan. The first phase of this project is from 2000-2007 with eight wave surveys. The sample includes two cohorts--first year and third year junior high students—with an intention to follow up from adolescence to young adulthood. To consider the panel demands and sampling variation, three regions in northern Taiwan become the research loci and 1000 samples each for Taipei City and Taiwan County, 800 samples for Yi-Lan County are targeted numbers. Taipei city has been the largest metropolitan city in Taiwan while the economic activities in Yi-Lan are mostly agriculture-based, and Taipei county is in-between. Another critical principal for the sampling process is to use the clustering method which allows us to sample the whole class and consequently, will enable us to trace important transition, such as friendship formation and change.

Multi-stage stratified cluster random sampling procedure was applied. We first use different urbanization level and urbanization process to distinguish basic sampling strata. Three tiers for Taipei city and Taipei County, and 2 tiers for Yi-Lan County are determined.. Take a specific tier/stratum for example, sampling procedures are:

(a) Within each stratum, expected sampling number is derived from the proportion of students in that stratum out of all students in the city/county
(b) Next step is to calculate the mean student number of the class for that stratum so as to decide number of classes to be chosen.
(c) The number of classes required for a specific stratum results in number of schools to be selected.

(d) Finally, random process is used to select both sampling schools as well as two classes of junior 1 and junior 3 in each school. We sample the whole class.

40 junior high schools becomes our sampling frame with 16 in Taipei city, 15 in Taipei county and 9 in Yi-Lan county. 81 classes (including one special class of physical education) for both Junior 1 and Junior 3 are chosen. The first wave survey includes 2696 1st year and 2890 3rd year junior high students as well as one of their parents and their head master of the class in year 2000. The sample used for this paper is the Junior 1 sample or the 1st year student sample of junior highs. After six waves' study, most samples have gone through the mandatory 3 junior high years and 3 senior high years, if they passed the entrance examination. The response rate is 68.27% in spring, 2005.

2. Variables

Adolescent Depressive Symptoms

The measure of adolescent depressive symptoms used in this study is based on the Symptom Checklist-90-Revised (SCL-90-R, Derogatis, 1983). We used the short-version of the SCL-90-R which includes 7 items measuring how frequently various depressive symptoms such as headache, loneliness, depressed mood, insomnia, numbness in some parts of the body, feelings as if something sticks to your throat, and weakness in some parts of the body occur during the past week. Each item is rated on a 5-point scale from 1 (never) to 5(often time). Then 7 items are summed to create a depression symptom score. The Cronbach alphas for this scale over the six waves ranges from .70 to .79.

Family Educational Strategy

As mentioned in the previous section, the entrance examination to senior high school is perhaps the most competitive and stressful event for most Taiwanese adolescents. In order to capture the family dynamics in the process, a scale of relevant, specific strategic items is constructed. Among these most often used methods, family strategy may be conceived as reflecting the social norm of being responsible and caring parents as well as the family expectation toward educational achievement. Family strategy is usually initiated by parents and applies to the adolescent (the exam-taker) as well as to other family members. Family strategy can be regarded as a common normative practice which varies according to different family resources, with higher SES families having more resources to provide more physical facilities or apply more self-restraint from the perspective of parents.

The scale is composed of family accommodation (e.g., parents decrease TV

watching time, decrease social activities, ask other family members to yield to the adolescent), physical provision (e.g., provide better nourishment, arrange better space for study) and behavior monitoring (e.g., limit play time, limit TV time, limit phone/internet conversion, screen friend's interaction, etc.). Preliminary results show that (1) Parents and youth have different perceptions on the family strategy used: parents tend to perceive more family accommodation and less behavior monitoring while youth have reverse reports, but both parties coincide higher on the physical provision; (2) family strategy is significantly related to family resources: positive association is found between father's education, family income and the family strategy used, particularly the physical provision and behavioral monitoring (Yi, et.al., 2005).

For this paper, we will focus on the behavioral aspect, namely whether parents limit TV watching time, play time, phone or internet time and screen which friends to have interaction with. The longitudinal impact of parental monitoring behavior over junior and senior high years will be specified with an intention to verify if these typical Chinese parenting practices are conceived by the youth as 'caring' rather than control only.

Other Variables

Family Cohesion

Selected cohesive behaviors on the family level are asked each year during the junior high and again on the last year of senior high. Adolescents answer whether the following statement fit with their own family situation: In our family, we will discuss with each other when making decisions; every family member participates in the family related activities; I can always receive comfort from my family when I feel frustrated; I can rely on my family members when I need help or advise. It is clear that this family level variable is assumed to be the normative or cultural environment for adolescents and is expected to have direct impact on individual's depression syndrome over time.

Class Cohesion

Again, whether the statement fits with adolescent's perception toward class situation is raised: In our class, we always help each other; I don't like to interaction with my classmates; we like/love each other as if we are a family; sometimes our classmates do not cooperate with each other. Class cohesion is a class level variable and is taken to reflect the class culture which may serve as an opportunity facilitator or constraint toward individual depression. The consecutive answers from junior high years and the last year of senior high are

used for analysis.

Inter-Class Competition

In addition to the pressure from being competitive for the coming entrance exam, adolescents are exposed to the inter-class competition at school as well. It is common for schools to rank the average score of each class in three semester exams. Class ranking serves as an indicator of academic progress at the group level. Taiwanese adolescents are aware of the relative ranking of own class compared with other classes. Hence, a question is asked: Comparing with other classes of the same year in your school, how is your class's academic performance? This question is regarded as another aspect of the school culture, with both class cohesion and class competition co-existing in the daily experience.

Teachers' Unfair Treatment

Since class ranking is important for the status and the evaluation of the head master at school, it is not uncommon for teachers to show favorable attitudes toward students with good academic scores. This unintentional or intended act often arouses unfair feelings among the class and may influence individual's psychological state, especially when facing exam or progress pressures. It is also hypothesized that favorism may produce positive effects to those who benefit from it. We limit this question to the class level and ask: In our class, is your head master usually nicer to classmates who have better grades?

Academic Performance

For a typical Taiwanese student, better grade means not only better treatment at home and at school, it also brings about higher self-esteem. Under the competitive environment, other talents or specialties such as art and skills do not have the priority in the life experiences during adolescence. Hence, if academic performance is a significant factor accounting for adolescent's depression, it is definitely more so for the Taiwanese context. The salient effect of academic ranking or performance will be used as a control variable in the model. The indicator is the average score of the last semester.

3. Data Analysis

Since the analytic strategy employed in this paper is not common among social-epidemiological studies, brief illustration follows. The main purpose of the analysis is to describe the basic pattern of adolescent's depressive symptom from the six wave panel data and to delineate possible influences from the interplay

between family and school. Thus, Latent Growth Curves (LGC) is used to estimate trajectories of change in adolescents' depressive symptoms (LISREL 8.52, Joreskog and Sorbom, 2002). The trajectory found is supposed to describes intra-individual changes over time by estimating an intercept (the initial levels), a slope (rates of change) and a quadratic (the nonlinear change). To investigate the trajectories of individual changes in a variable, three latent constructs corresponding to the initial level, slope, quadratic are defined in a SEM (Structural Equation Model).

The adolescent's depressive symptom at different points in time—from time 1 to time 6 (or dep_w1~dep_w6)-- is indicated by three latent construct. Each variable is measured at different time points and the multiple indicator is used to represent the three latent constructs in the LGC model. The model is expected to generate maximum-likelihood estimates and missing values are treated as listwise. LGC allows one to investigate both developmental change and stability in an attribute over time. The parameters of intra-individual changes, be it at the initial level, rate of change and nonlinear change are expected to be different from person to person. Further, LGC allows the researchers to examine systematic inter-individual differences in the initial level, slope, and quadratic for a variable. In brief, the choice of an appropriate mathematical function to represent true individual change is a crucial initial step in growth curve modeling (for more detail, please see Wickrama et. al., 1997, Pp. 148-149). In the following analysis, the negative impact of the interplay between family and school contexts is hypothesized to lead to an upsurge in adolescents' depressive symptoms. The research model can be represented as:

(Figure 1 about here)

Results

1. The Psychological Well-being of Taiwanese Youth

Table 1 indicated that, overall, adolescents' scores of depressive symptom during these six-year panel study period (i.e., from 7th grade through 12th grade). Adolescents' depressive symptoms are much worsen in junior high school than in senior high school. Besides, there are significant increases between Time2 to Time3 (correspond to 8th grade and 9th grade) and Time5 to Time6 (correspond to 11th grade and 12th grade). Part of the reasons is that most of the respondents have to participate in highly competing Entrance Exams and to be qualified to attend general high schools and universities (Yi and Wu, 2003). However, the accumulation of

differences at mean level among six time periods cannot reflect the exact changes at the individual level (Wickrama et. al., 1997). From Table 1, one can only detect the information about long-term change at the aggregate level but ignoring that of individual level. If we take a look at into figure 2, we can see that everyone has very different developmental trajectory of depressive symptom. If we used the regression model to predict adolescents' depressive growth trajectories we would get the two thick lines and totally ignoring the information from individual level. That's the reason we use latent growth curve model to represent the individual changes on depressive symptoms in time.

'Table 1 about here'
'Figure 2 about here'

2. Factors Accounted for the Development of Psychological Well-being

Table 2 specified the zero-order correlations of adolescents' depressive symptom and other independent variables across these six panel survey periods. Table 2 showed that the scale of depressive symptom is a reliable measure across time since the correlation coefficients among those measures are reasonably strong (range form .29 to .57 for depressive symptom across six waves). Further, the correlation coefficients among depressive symptom and most of other covariates, including family cohesion, family strategy, class cohesion, teachers' concern of academic performance, are significant at $p = .01$ level (see Table 2 for detail). Table 2 suggested that there existed some kind of relationship between adolescents' depressive symptom and family and school covariates, and these relationships lasted for a rather long time period.

'Table 2 about here'

Based on the information provided by Table 1 and Table 2, this study went on to do series of analyses on Latent Growth Curve Models (LGC model) in a manner to intend to reveal the "latent trait" of the relationship between adolescent's depressive symptoms. Table 3 showed that adolescent's depressive symptom fitted very well in an independent LGC model. The structure mean and variance of all latent variables for depressive symptom are significant. The Ψ coefficients are significant, which means the initial status, change rate, and nonlinear change correlate with each other. This LGC model indicates that the growth trajectory of Taiwanese adolescents' depressive symptom seems to have a nonlinear change rate.

‘Table 3 about here’

Figure 2 displays the interplaying influences of family and school on adolescents’ depressive symptom. The model reflects that data also fitted the model very well (Chi-square=592.40, df=207, RMSEA=.04). As can be seen, we find family only has impact on adolescents’ initial status of depressive symptom on the one hand and school, on the other, has significant influences on the change rate of depressive symptom. In other words, one can expect that a highly control family without warm affections could put the kids at risk to stay at higher level of depressive symptom and a school with great academic stress would further put the kids into a highly arising trajectory. Furthermore, like family cohesion, class cohesion can afford emotional needs to adolescents and help them not stay at a high level of depressive symptom. Considering the competition aspect, such as class competition and teachers’ concern of academic performance, we can see those have significant impacts on the changing rate of depressive symptom. All in all, figure 3 indicates that family influent adolescents’ initial level and school change the growth rate of adolescents’ depressive symptom.

‘Figure 3 about here’

Will the control of family and academic competition in school have different impacts on girls and boys and is responsible for the different growth curves of depressive symptom? This is the question we will investigate next.

A closer scrutiny of model comparison points out class competition and teacher involvement has different effects on males and females (see table 4). Our results show that entering a high competing class often has negative consequence on male, which means male is easily to be influent by competing climate in class and resulting a higher level of depressive symptom with greater change rate(γ_{13} =.16, P<.05; γ_{23} =-.47,P<.05). For female, the influences of class competition are not significant. Similar to class competition, teacher involvement has more strong power on males than on females (γ_{35} =-.44, P<.05 for male; γ_{35} =-.11, P>.05 for female), showing that teacher’s concern on students’ academic performance will negative influent male students psychological well-beings.

‘Table 4 about here’

In short, this study using latent growth curve analysis investigates change in adolescents' depressive symptom and the influences from family and school. Consistent with the hypothesis, research findings denoted that the interplay of family and school affects adolescents' depressive symptom and schools have different impacts on males and females.

Conclusion

This paper examines the growth trajectory of depressive symptom (or the psychological well-being) among Taiwanese adolescents over six years' period. Family and school context are major loci accounted for the developmental outcome. It is assumed that different contextual effects may be observed from early adolescence (average age 13) to later adolescence (age 18). Since significant gender differences in depressive symptoms for youth have been documented, possible gender variation is also explored. Data are taken from the Taiwan Youth Project, a panel study sampling young adolescents of first year junior high students in northern Taiwan since 2000.

Different from previous reports on depressive symptom with most attention on the effects of individual psychological variables, our analysis makes special effort to investigate the relationship factors, especially those at the group level. For family context, two indicators are included: family cohesion which taps family cultural aspect and family educational strategy which reflects important family practice for adolescents taking the entrance examination (our LGC analysis limits to one aspect, namely the behavioral monitoring). Likewise, class cohesion, inter-class competition as well as unfair treatment of teachers are all salient class culture or normative practice embedded in typical Taiwanese junior high school, and they are used to indicate the school context.

First of all, non-linear developmental patterns of individual depressive symptom propel us to delineate the relative effects of family versus school context. Using latent growth curve method, we are able to show that family and school related factors not only explain various growth trajectory of adolescents' depressive symptom, they also produce different effects overtime. Specifically, the result indicates that to examine the growth curve of depressive symptom, family context is salient at the initial status, but it does not affect the subsequent development. Similar effect exists for class cohesion which is significant in explaining the intercept of depressive symptom only. In other words, family context along with class cohesion serves as a

pre-condition to determine the relative level of individual depressive symptom at the beginning year. The pre-conditional factors then give way to school context as adolescents get used to the school environment.

In our study, school is indeed a significant context explaining the slope or the linear change of adolescent depressive symptom. Among school factors examined, inter-class competition which is a common phenomenon especially for junior high school results in pronounced negative effects for the developmental pattern of adolescents. This is somewhat unexpected since being in such a class is likely to lead individuals to experience higher depressive level. However, since class is relatively stable during junior high, perhaps the competitive class culture may produce differing effect between genders. A further analysis verifies our speculation. Findings regarding family context and class cohesion do not point out gender difference in the growth curve of individual depressive symptom. However, inter-class competition does and is significantly affecting the initial status as well as the rate of change for males only. In other words, female adolescents who have higher depressive scores at the beginning year are less likely to be affected by school context, such as the inter-class competition. But the opposite direction on male adolescents suggests that males may have higher depressive scores if situated in an inter-class competition context. Furthermore, the rate of change afterwards is unlikely to slow down and may even result in a relatively stable or plateau status.

Perhaps the most noteworthy finding of the school context is the importance of teachers—the head master of the class. The unfair treatment of teachers in favoring students with good academic performance is vital for the depressive symptom growth from beginning status to subsequent years. Teachers with recognized unfair treatment accounts for the intercept of depressive symptom, the linear change of depressive symptom development as well as the non-linear fluctuation of the depressive symptom curve for adolescents. The long term effect lasts from junior high to senior high years in that adolescents who perceive teachers having unfair treatment are more likely to remain at the higher depressive level. The estimated quadratic change being negative suggests less likelihood to experience an improvement in the non-linear growth curve. Results of the gender comparison point out that teacher's unfair treatment during junior high years affects the latent depressive status for both male and female adolescents. After the optimal point of growth, the rate of change does not appear to experience a drastic drop and higher depressive symptom may be maintained longer.

To sum up, this study ascertains the importance of family and school context in accounting for the adolescent's depressive symptom. The growth curve from junior high to senior high years points out that school context may be more salient, especially the effect at the class level. The differing class effect on genders as well as the key role the head master performs in the individual development of depressive symptom strongly suggest the importance of the school context. Since school, particularly the class, is where adolescents experience changing status of depression, future studies may consider to delineate possible school mechanisms affecting adolescent's psychological well-being.

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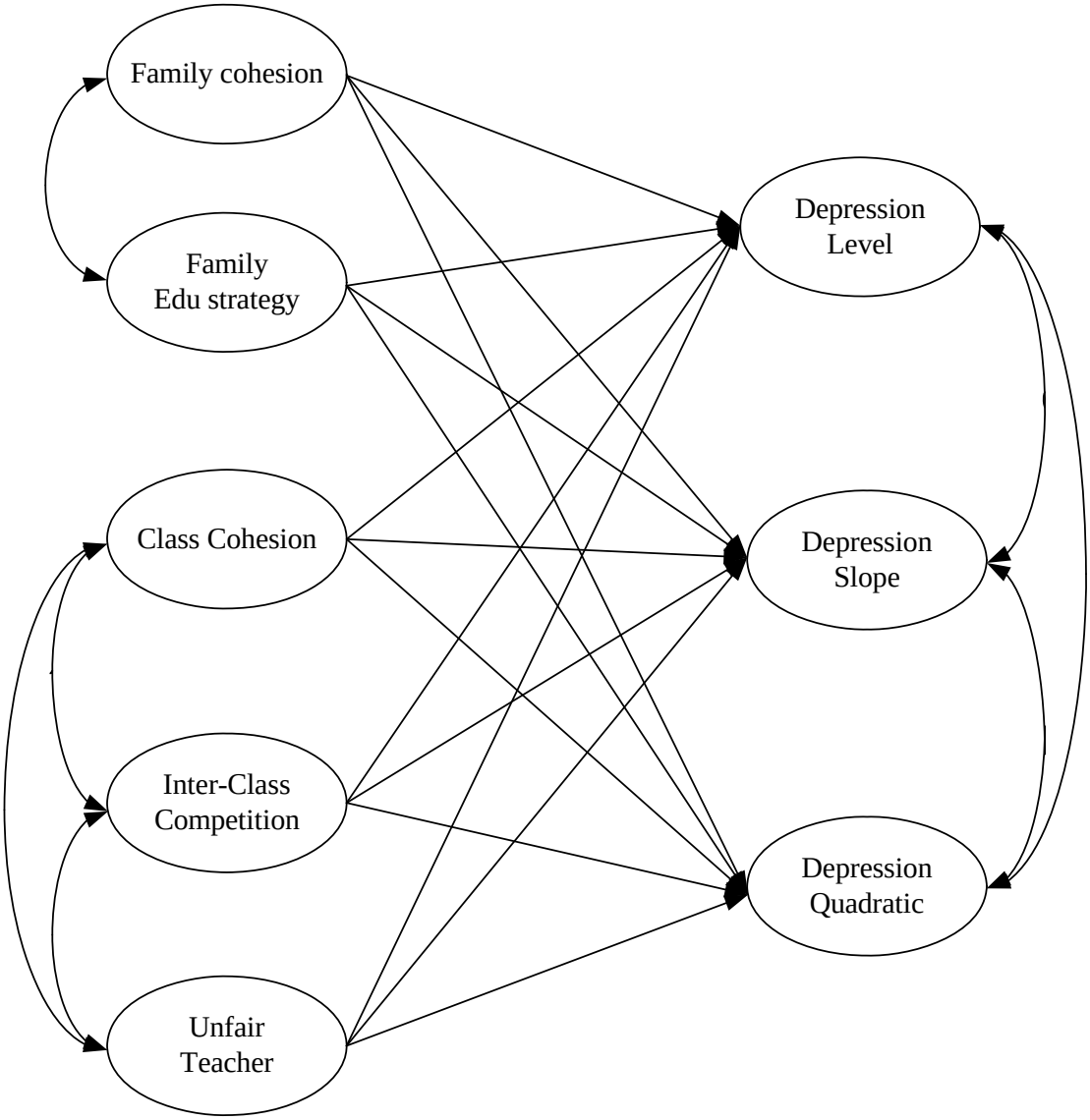
Figure 1: The Research Model



Control Variable: Academic Performance

Table 1. Descriptive Statistics of Adolescents' depressive symptoms at different waves

	All sample			Male			Female		
Wave	n	M	SD	n	M	SD	n	M	SD
Wave 1	2668	3.32	3.91	1367	2.78	3.84	1301	3.87	3.91
Wave 2	2664	3.36	3.68	1316	2.61	3.26	1249	4.15	3.93
Wave 3	2647	4.55	4.21	1289	3.87	4.18	1215	5.23	4.19
Wave 4	2309	2.30	3.10	1109	1.65	2.64	1093	2.95	3.41
Wave 5	2005	2.02	2.77	975	1.49	2.45	946	2.56	2.99
Wave 6	1820	4.19	4.03	887	3.45	3.82	854	4.89	4.11

Note: n = number of cases; M = mean; SD =standard deviation.

Figure2: Trajectories of depressive symptoms of different individuals

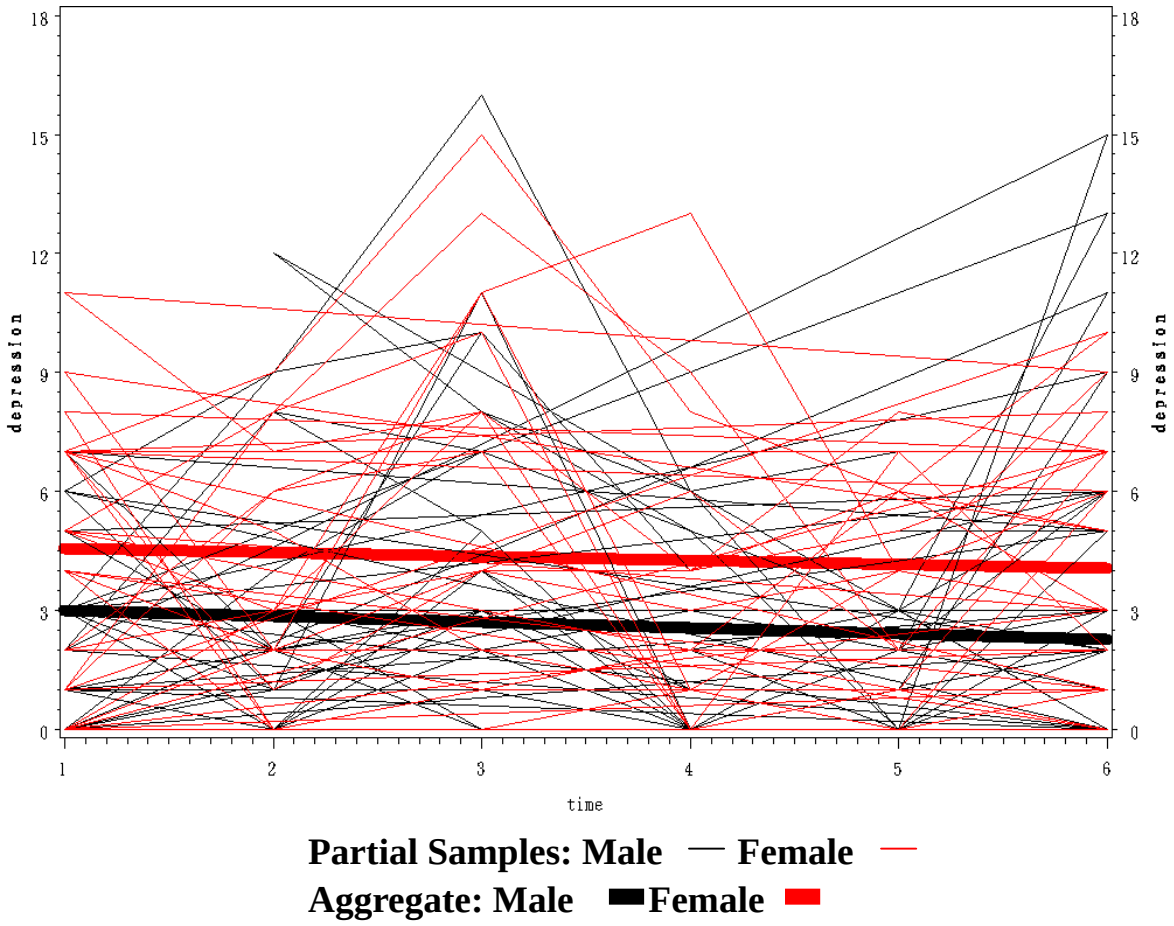


Table 2: zero-order correlations of adolescents' depressive symptom and other independent variables (N=1159)

		Time1 DS	Time2 DS	Time3 DS	Time4 DS	Time5 DS	Time6 DS	Time1 FC	Time2 FC	Time3 FC	Time1 FS	Time2 FS	Time1 IC	Time2 IC	Time3 IC	Time1 CC	Time2 CC	Time3 CC	Time1 UT	Time2 UT	Time1 AA	Time2 AA	Time3 AA
Time1	**depressive symptom(DS)**	1.000	.500***	.469***	.293***	.293***	.317***	-.229***	-.234***	-.199***	.135***	.136***	-.041	-.017	-.061*	.262***	.227***	.153***	.151***	.107***	.043	.017	.032
Time2	**depressive symptom(DS)**	.500***	1.000	.567***	.402***	.351***	.424***	-.167***	-.209***	-.148***	.093**	.167***	-.058*	-.079**	-.072*	.128***	.213***	.183***	.082**	.137***	.062*	.042	.036
Time3	**depressive symptom(DS)**	.469***	.567***	1.000	.433***	.400***	.429***	-.109***	-.197***	-.166***	.089**	.153**	-.007	-.066*	-.032	.141***	.166***	.212***	.114***	.142***	.100**	.072*	.060*
Time4	**depressive symptom(DS)**	.293***	.402***	.433***	1.000	.415***	.423***	-.088**	-.145***	-.139***	.034	.106***	.006	-.034	-.008	.115***	.147***	.121***	.076**	.109***	.057	.024	.057
Time5	**depressive symptom(DS)**	.293***	.351***	.400***	.415***	1.000	.424***	-.130***	-.189***	-.151***	.065*	.126***	-.011	-.046	-.038	.083**	.107***	.128***	.035	.066*	.043	.020	.032
Time6	**depressive symptom(DS)**	.317***	.424***	.429***	.423***	.424***	1.000	-.144***	-.154***	-.138***	.047	.121***	-.030	-.085**	-.042	.124***	.100**	.103**	.103***	.119***	.085**	.083**	.096**
Time1	**family cohesion(FC)**	-.229***	-.167***	-.109***	-.088**	-.130***	-.144***	1.000	.588***	.519***	-.013	.007	.067*	.079**	.067*	-.283***	-.207***	-.122***	-.056	-.045	.113***	.127***	.118*
Time2	**family cohesion(FC)**	-.234***	-.209***	-.197***	-.145***	-.189***	-.154***	.588***	1.000	.657***	-.072*	-.074*	.061*	.099**	.061*	-.207***	-.233***	-.137***	-.103***	-.107***	.087**	.131***	.124***
Time3	**family cohesion(FC)**	-.199***	-.148***	-.166***	-.139***	-.151***	-.138***	.519***	.657***	1.000	-.067*	-.069*	.047	.054	.049	-.215***	-.159***	-.177***	-.075*	-.076*	.066*	.075*	.068***
Time1	**family strategy(FS)**	.135***	.093***	.089**	.034	.065*	.047	-.013	-.072*	-.067*	1.000	.497***	-.012	.031	.019	.011	.039	-.048	.065*	.034	-.063*	-.082**	-.068*
Time2	**family strategy(FS)**	.136***	.167***	.153***	.106***	.126***	.121***	.007	-.074*	-.069*	.497***	1.000	-.031	.007	-.018	.025	.073*	-.017	.055	.083**	.024	-.009	-.019
Time1	**Inter-class Competition(IC)**	-.041	-.058*	-.007	.006	-.011	-.030	.067*	.061*	.047	-.012	-.031	1.000	.416***	.253***	-.145***	-.066*	-.044	-.033	.004	-.062*	-.011	-.047
Time2	**Inter-class Competition(IC)**	-.017	-.079**	-.066*	-.034	-.046	-.085**	.079**	.099**	.054	.031	.007	.416***	1.000	.420***	-.122***	-.140***	-.073*	-.036	-.041	-.028	.028	.005
Time3	**Inter-class Competition(IC)**	-.061*	-.072*	-.032	-.008	-.038	-.042	.067*	.061*	.049	.019	-.018	.253***	.420***	1.000	-.131***	-.097**	-.141***	-.038	-.022	.122***	.137***	.040
Time1	**class cohesion(CC)**	.262***	.128***	.141***	.115***	.083**	.124***	-.283***	-.207***	-.215***	.011	.025	-.145***	-.122***	-.131***	1.000	.411***	.308***	.112***	.096**	-.006	-.038	-.007
Time2	**class cohesion(CC)**	.227***	.213***	.166***	.147***	.107***	.100**	-.207**	-.233***	-.159***	.039	.073*	-.066*	-.140***	-.097**	.411***	1.000	.499***	.069*	.121***	-.064*	-.078**	-.077**
Time3	**class cohesion(CC)**	.153***	.183***	.212***	.121***	.128***	.103**	-.122**	-.137***	-.177***	-.048	-.017	-.044	-.073*	-.141***	.308***	.499***	1.000	.052	.102**	-.008	-.017	.012
Time1	**Unfair Teacher (UT)**	.151***	.083**	.114***	.076*	.035	.103***	-.056	-.103***	-.075*	.065*	.055	-.033	-.036	-.038	.112***	.069*	.052	1.000	.378***	.019	.024	.034
Time2	**Unfair Teacher (UT)**	.107***	.137***	.142***	.109***	.066*	.119**	-.045	-.107***	-.076*	.034	.083**	.004	-.041	-.022	.096**	.121***	.102**	.378***	1.000	.029	.003	.021
Time1	**academic achievement(AA)**	.043	.062*	.100**	.057	.043	.085**	.113***	.087**	.066*	-.063*	.024	-.062*	-.028	.122***	-.006	-.064*	-.008	.019	.029	1.000	.813***	.792***
Time2	**academic achievement(AA)**	.017	.042	.072*	.024	.020	.083**	.127***	.131***	.075*	-.082*	-.009	-.011	.028	.137***	-.038	-.078**	-.017	.024	.003	.813***	1.000	.785***
Time3	**academic achievement(AA)**	.032	.036	.060*	.057	.032	.096**	.118***	.124***	.068*	-.068*	-.019	-.047	.005	.040	-.007	-.077**	.012	.034	.021	.792***	.785***	1.000
	MEAN	3.203	3.372	4.504	2.332	2.031	4.189	12.117	11.525	11.259	2.493	2.457	2.843	2.833	2.911	5.969	6.142	5.890	1.840	2.143	3.308	3.601	3.291
	SD	3.626	3.672	4.014	3.028	2.758	3.947	2.769	2.788	2.470	1.570	1.597	1.213	2.171	1.101	1.651	1.731	1.709	.933	.991	1.154	1.085	1.177

Table3. Summary for independent LGC models

	Factor loading						Latent variables		Ψ			n	χ^2
	T1	T2	T3	T4	T5	T6	Mean	Variance	Level	Slope	Quadratic		
Level	1	1	1	1	1	1	3.029*	0.107*	92.862*			1360	194.06
Slope	0	1	2	3	4	5	0.666*	0.022*	6.668*	5.669*			
Quadratic	0	1	4	9	16	10.01	-0.238*	0.002*	-5.808*	-1.277*	0.536*		

Figure 2: Factors Accounted for the Development of Psychological Well-being

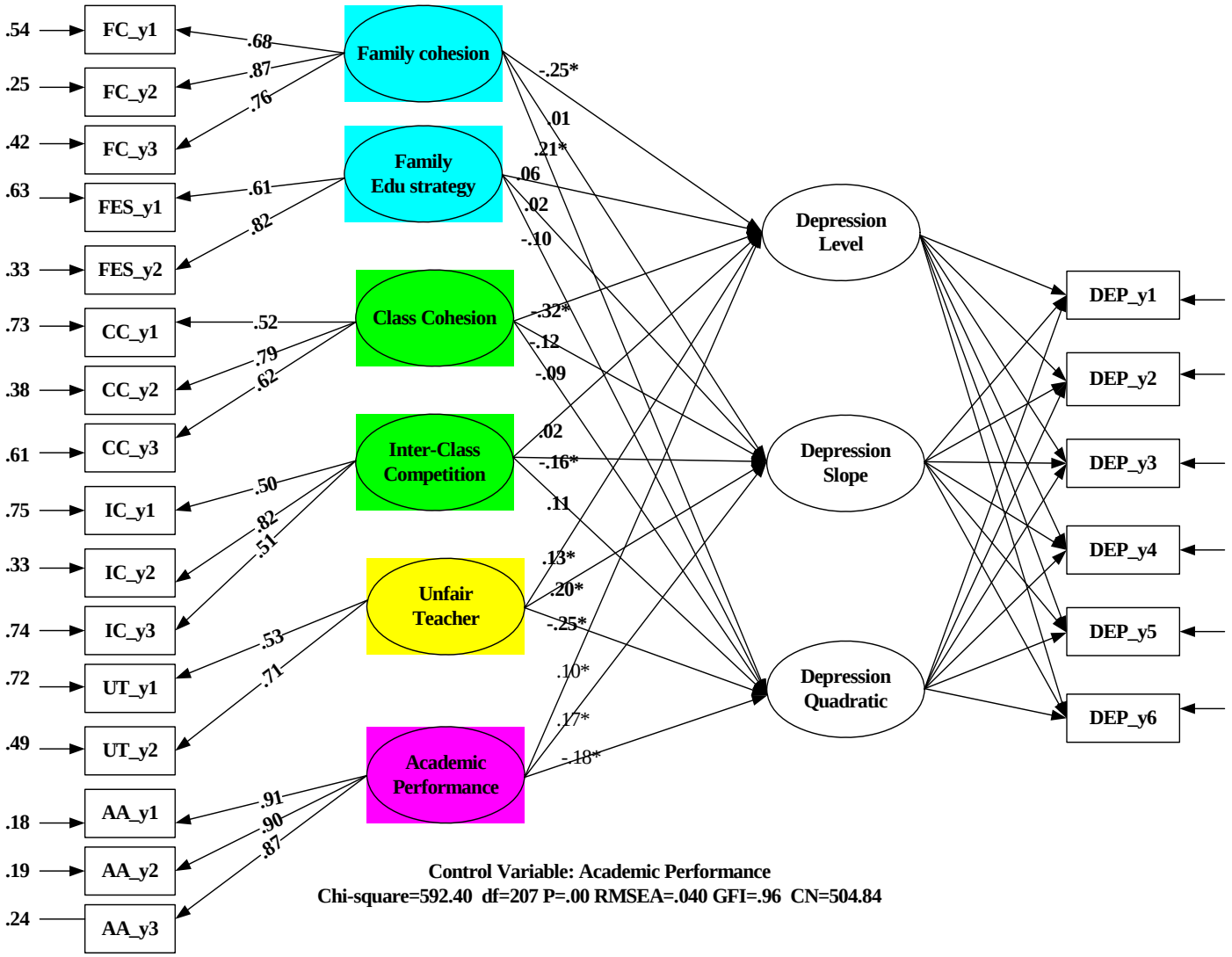


Table4. Summary for Model Comparison of different gender adolescents

	Model	Description	Male	Female	χ^2	DF	$\Delta\chi^2$	**P**
γ_{11}	Baseline	Male ≠ Female	-.25	-.26	853.52	414	.01	P>.05
Family cohesion-->level	Alternative	Male=Female	-.25		853.51	415		
γ_{12}	Baseline	Male ≠ Female	.18	.28	853.52	414	.91	P>.05
Family strategy-->level	Alternative	Male=Female	.23		854.43	415		
γ_{13}	Baseline	Male ≠ Female	.32	.37	853.52	414	.01	P>.05
Class cohesion-->level	Alternative	Male=Female	.34		853.53	415		
γ_{14}	Baseline	Male ≠ Female	.16	-.04	853.52	414	4.69	P<.05
Inter-Class competition -->level	Alternative	Male=Female	.03		858.21	415		
γ_{15}	Baseline	Male ≠ Female	.20	.02	853.52	414	2.7	P>.05
Teacher involvement-->level	Alternative	Male=Female	.12		856.22	415		
γ_{21}	Baseline	Male ≠ Female	.17	-.08	853.52	414	1.49	P>.05
Family cohesion-->slope	Alternative	Male=Female	.04		855.01	415		
γ_{22}	Baseline	Male ≠ Female	-.19	.12	853.52	414	2.34	P>.05
Family strategy--> slope	Alternative	Male=Female	.23		855.86	415		
γ_{23}	Baseline	Male ≠ Female	-.19	.01	853.52	414	1.47	P>.05
Class cohesion --> slope	Alternative	Male=Female	-.11		854.99	415		
γ_{24}	Baseline	Male ≠ Female	-.47	.00	853.52	414	7.13	P<.05
Inter-Class competition --> slope	Alternative	Male=Female	-.17		860.65	415		
γ_{25}	Baseline	Male ≠ Female	.34	.15	853.52	414	1.17	P>.05
Teacher involvement--> slope	Alternative	Male=Female	.23		854.69	415		
γ_{31}	Baseline	Male ≠ Female	-.05	.13	853.52	414	.67	P>.05
Family cohesion-->Quadratic	Alternative	Male=Female	.04		854.19	415		
γ_{32}	Baseline	Male ≠ Female	.05	-.15	853.52	414	1.10	P>.05
Family strategy--> Quadratic	Alternative	Male=Female	-.05		854.62	415		
γ_{33}	Baseline	Male ≠ Female	-.01	-.24	853.52	414	1.68	P>.05
Class cohesion ->Quadratic	Alternative	Male=Female	-.11		855.20	415		
γ_{34}	Baseline	Male ≠ Female	.27	.03	853.52	414	1.97	P>.05
Inter-Class competition --> Quadratic	Alternative	Male=Female	.12		855.49	415		
γ_{35}	Baseline	Male ≠ Female	-.44	-.11	853.52	414	4.32	P<.05
Teacher involvement-->Quadratic	Alternative	Male=Female	-.26		857.84	415		