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TAIWANESE ADOLESCENT PSYCHOSOCIAL DEVELOPMENT IN URBAN AND
RURAL AREAS

by

Chien-Ti Lee

A dissertation submitted in partial fulfillment
of the requirement for the degree

of

DOCTOR OF PHILOSOPHY

in

Family and Human Development

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2010

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ABSTRACT

Taiwanese Adolescent Psychosocial Development in Urban and Rural Areas

by

Chien-Ti Lee, Doctor of Philosophy

Utah State University, 2010

Major Professor: Dr. Troy E. Beckert

Department: Family, Consumer, and Human Development

The purpose of this study was to investigate Taiwanese adolescent psychosocial development (i.e., autonomy and identity development) based on psychosocial theoretical models developed in western societies. Data were collected from both public senior high and vocational high schools in both urban and rural areas in Taiwan. Adolescent participants, with an average age of 17 years old, included 447 (about 54% were females) from urban areas, and 702 (62% were females) from rural areas. The results of this study revealed that Taiwanese adolescents from both urban and rural areas were similar to adolescent developmental ranges suggested in western theories. There were a few variations revealed in this study, such as scores of internal consistency, average scores of each scale, associations among indicators, and the numbers of youth classified of certain developmental status. In general, the relationships between factors and adolescent psychosocial developmental outcomes did not moderate by regional differences. Identity development of Taiwanese youth from both areas was more likely to be predicted by both situational (e.g., family income and school type) and agential factors (e.g., collectivism,

parent attachment, and resiliency) than Taiwanese adolescent cognitive, emotional, and behavioral autonomy. Higher family income level and greater resiliency scores were positively associated with high autonomy and/or achieved identity status. Strong beliefs in collectivism and secure attachments with parents did not significantly correlate with autonomy but did correlate with foreclosure identity status. Across the analysis models in this study, resiliency was the strongest factor which was associated with high autonomous status and identity achievement. Implications and further recommendations for research and practical uses were further discussed.

(180 pages)

DEDICATION

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To my beloved parents, sister, and mentors

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The process of pursuing a doctoral degree in the United States was not as smooth as I thought it would be four years ago. I underestimated the difficulties adjusting to the cultural and societal differences between the U.S. and Taiwan, in addition to the difficulties of speaking in class, joining class discussions, and writing in formal English. I was lucky to have my major professor, faculty members, supervisors of my graduate assistantships, and peers (Carrie, Celestial, Stacey, and Thane) to support me and assist me to comprehend and accommodate American cultures in terms of concepts, response patterns, and expectations in both academia and non-academia domains. I am grateful and deeply appreciate all the support, care, understanding, and patience that all my mentors and supervisors have provided to me to help me endure to this final destination.

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CHAPTER I

INTRODUCTION

Unsuccessful psychosocial development is related to a series of negative outcomes, such as poor well-being (Crawford, Cohen, Johnson, Sneed, & Brook, 2004), low self-esteem (Vleioras & Bosma, 2005), suicide (Porte, Sandhu, & Longwell-Grice, 2002), substance abuse (Chassin et al., 2004), and other problem behaviors such as delinquency (Jessor et al., 2003). Accordingly, policy makers, social scientists, educators, and parents in western societies, such as the United States, frequently emphasize promoting healthy adolescent psychosocial development.

Taiwanese professionals, including scholars and school teachers, have adopted information about adolescent psychosocial development from western societies. These professionals use this information as a baseline model to understand and support Taiwanese adolescent psychosocial development. However, while the western model of psychosocial development fits western societies, which primarily embrace an individualistic philosophy, few studies have explored the extent to which these constructs fit eastern societies that mostly practice collectivistic teachings and principles.

Since Taiwan westernized rapidly after World War II, the application of western models onto Taiwanese youth seemed reasonable. It is still unclear, however, to what extent the westernization of Taiwan makes it more similar to western societies in terms of cultural foundation and developmental pattern, to apply western theoretical models. Moreover, it appears the degree of westernization in Taiwan differs by regional area.

Urban areas are highly westernized while rural areas generally remain traditionally collectivistic (Hung, 2004).

Scholars know little about whether the western model should be applied to the developmental status of rural youth since most research has been conducted with young people in urban areas. Hence, the question of the extent to which a western model of psychosocial development can be appropriately applied to Taiwanese youth has been mentioned frequently in scholarly discussions with scarcely few systematic and replicable empirical studies (see Gabrenya, Kung, & Chen, 2006; Yang, 1999). On the other hand, the teaching training systems in Taiwan still emphasize that future teachers promote western theories with little guidance or inspiration for applying culturally specific theories from Taiwan. In sum, it is unknown to what extent the western theories of adolescent psychosocial development can be generalized to Taiwanese youth from both urban and rural areas and to what extent the adopted western theories need to accommodate the potentially unique developmental patterns of Taiwanese adolescents.

Furthermore, little research in psychosocial developmental issues focuses on normal developmental tasks associated with healthy adolescent development. Instead, most research in this field focuses on a series of psychosocial problems. As a result, there is a lasting controversial question about the need to allocate time and resources in learning developmental theories rather than behavioral indicators to preemptively screen out problematic youth. Unfortunately, the absence of psychosocial problems in adolescence does not necessarily equate to a healthy psychosocial development. The converse, however, seems to be the case. That is to say, poor psychosocial development is generally a clear indicator of future psychosocial problems. Additionally, much of the

limited research in this area lacks theoretical foundation and, therefore, makes construct operationalization and group comparison difficult. To span the discrepancy between theory and practice, it is necessary to evaluate the cultural and psychometric acceptability of western theoretical psychosocial development models with a Taiwanese sample. To address the concern of the generalizability of theories, spawn in western societies, researchers frequently use an individualism-collectivism construct to assess cultural value differences and their effect on human behavior (Singelis, 1994). However, there is a common logic flaw found in most of these studies. Past researchers generally assumed that all Chinese are collectivistic and all Americans are individualistic (see Bush, 2000; Peterson, Cobas, Bush, Supple, & Wilson, 2004; Sheldon et al., 2004). This is not always the case. For example, as mentioned previously, the character of Taiwanese society contains both westernized individualistic and traditional collectivistic climates based, in part, on varied degrees of exposure to western values.

The unique socio-historical and political background of Taiwan makes the within-group variations, in terms of cultural value affiliation, different from Mainland China and Hong Kong, even though people from these three areas are routinely grouped together and called “Chinese.” Chinese people in Hong Kong might experience more individualistic values in education and social systems because for 99 years until 1997, they were a British colony. In the case of Taiwan, following 50 years of Japanese rule that ended with WWII, the island nation rapidly westernized in urban areas. The “Cultural Revolution,” initiated by the communist government in Mainland China, eliminated the influences of traditional values (e.g., Confucianism) to a certain degree. Meanwhile, international trade between China and other western countries brought some

western values and climate into China (Lee, 1996). Though the differences within the Chinese people have been documented, little research has been conducted to evaluate the effect of cultural value affiliation (i.e., individualism-collectivism) on adolescent development specifically in Taiwan. Validity is threatened by primarily using research findings from Hong Kong or Mainland China to assume universal application to Taiwanese youth development without acknowledging the potential confounding factor of nonequivalent socio-historical backgrounds. A systematic exploration of the effects of cultural value affiliation on Taiwanese youth is needed to satisfactorily decrease the internal validity threats of selection bias and to increase external validity in terms of generalizability within Taiwanese culture.

In recent years, Taiwanese have become more self-aware, but remain confused about their cultural identity because of the gradual loss of traditional virtues, native languages (i.e., Hokanese, Haka, and aboriginal languages), and jeopardized national position (e.g., cannot use “Taiwan” as a name of nation or local government in international meetings such as WHO and Olympics). Most Taiwanese resonate with the ideal of the “American dream” disseminated by media (Lu, 1991; Yen & Stevens, 2004) and seek liberation from the restraints of traditional virtues (Chu, 1994; Madsen, 1995). It seems that many Taiwanese feel that individualism is a key factor in the United States becoming one of the strongest and most influential countries in the world whereas collectivistic views have led Taiwan to lack the power of competition and self-defense. On the other hand, Taiwanese professionals and parents are worried about the prevalent individualistic and anti-collectivistic atmosphere that is spreading quickly by the Internet and mass media. They fear individualism might lead teenagers to become more deviant

and problematic in the future. For example, a famous line from an advertisement that is frequently embraced by teenagers but shunned by parents and educators which says, “there is nothing wrong with me doing whatever I like.” Old proverbs, eulogized for several decades state, “today’s youth are tomorrow’s legends” and “youths are the pillars of the country.” For this reason, a better understanding of the association between cultural orientation and adolescent psychosocial development in Taiwan is necessary to extend effective support toward fostering healthy adolescent development.

Due to the apparent differences in developmental status and demographic structure between urban and rural areas in Taiwan, it is inevitable for Taiwanese professionals to focus more on the individual’s social environment such as cultural, political, economic, educational, and family systems that already set limits on individual problem behaviors (Côté, 1996; Elder, 1994; Kroger & Green, 1996). For example, Taipei City, the capital city of Taiwan, has abundant libraries, museums, elementary and secondary schools, universities (including the first three), modernized mass transportation (metro) system, and retail department stores (e.g., Taipei 101). On the other hand, there are many reports that show the inadequate education and poor living quality in the secluded rural areas of Taiwan such as Taitung and Hualien County, remain in a more primitive and agriculture state than the larger modern cities. Compared to urban areas, the demographic characteristics of residents in these rural areas show lower educational levels, lower family income, more working class, and more single-parent family structures (Wu, Liu, Fang, Hsu, & Sun, 2006). Further, researchers indicate that those students from rural areas often lack the knowledge and skills necessary to fit into a nation-wide school system. The students are, therefore, at a higher risk for increased

failure in school which, in turn, results in poor psychosocial development (Dumais, 2002), including depression and low self-esteem (Lannergrand-Willems & Bosma, 2006).

Based on these observed differences in social support, it is hypothesized that adolescent psychosocial development, between urban and rural areas, may differ somewhat since they have varied degrees of westernization.

However, this focus on situational factors can be considered suitable only to explore short-term issues in adolescent development (Bronfenbrenner, 1986; Felner & Felner, 1989; McLoyd, 1990). One reason we may fail to realize and account for accurate developmental statuses of adolescents in Taiwan stems from our acceptance of the assumption that poor outcomes result from inadequate social structure or a lack of resources. Human action or behavioral outcomes result from the interaction between human agency and social structure (Côté, 1996). Hence, in addition to structural factors, there is a need to examine agential factors, including individuals' attitudes, beliefs, and interactions toward goal accomplishment either by responding submissively or by adopting new thoughts and behaviors actively (Côté, 1996; Kroger & Green, 1996). Assessing agential factors will help to better capture the active role of human behaviors in terms of resiliency or vulnerability. In view of this, the focus of this study is on the effects of both agential (i.e., cultural affiliation, parent attachments, and peer attachments) and situational (i.e., family income and residency) factors that contribute to healthy psychosocial development in Taiwanese adolescents.

In sum, the purpose of this study is to investigate Taiwanese adolescent psychosocial development. This purpose will be accomplished in five steps. First, this study will assess the associations among developmental outcomes of urban and rural

Taiwanese adolescents with consideration of gender differences. Second, this study aims to understand the relationship of situational factors (i.e., family social economic status, family structure, and school effect) on adolescent psychosocial developmental outcomes. Third, this study will explore the association of the agential factors (i.e., cultural value affiliations, parent and peer attachments, and resiliency) with adolescent psychosocial developmental outcomes. Fourth, it seeks to evaluate the unique effect of agential factors and situational factors on adolescent psychosocial developmental outcomes after partitioning out influences from each other. Lastly, this study aims to provide guidance and suggestions for applying a western psychosocial development model to Taiwanese adolescents and also for promoting Taiwanese adolescents' healthy psychosocial developmental outcomes. The following research questions will guide this study:

1. To what extent are there differences in adolescent psychosocial developmental outcomes for urban and rural youth after controlling for gender differences?
2. To what extent do the situational factors of family structure, family economic status, and school type explain adolescent psychosocial development after control for place of residency (i.e., urban versus rural) and gender?
3. To what extent do the agential factor of culture value affiliation (i.e., individualism-collectivism), parental and peer attachments, and resiliency account for differences of adolescent psychosocial developmental outcomes after considering place of residency and gender differences?
4. To what extent are there unique effects of both situational and agential factors on adolescent psychosocial developmental outcomes after controlling for region and gender?

CHAPTER II

LITERATURE REVIEW

As mentioned in chapter I, to understand adolescent psychosocial development better, a grasp of agential factors (i.e., cultural value affiliation and attachments) and situational factors (i.e., family structure, family social economic status, and residency) that might influence adolescent psychosocial development is needed. The point of this review is to first gain a better understanding from both western and eastern perspectives of how individualism-collectivism and attachment constructs contribute to individual differences in adolescent identity formation and autonomy processes in relation to the influences of family structure, family SES, and residency. Because there is little published research from eastern societies in this topic area, most of the literature reviewed in this chapter stems from western studies. Finally, the research questions of this study are presented based on the implication and modification of previous research lines.

In summary, the purpose of this review section is to highlight what previous researchers have detailed on adolescent psychosocial development, especially for identity formation and autonomy achievement when considering the influence of agential and situational factors. The objectives for this review are as follows:

1. To better understand the previously examined associations among family structure, family income, school effect, and psychosocial development.
2. To better understand the previously examined associations among individualism-collectivism, attachments, resiliency and psychosocial development.

3. To detail hypotheses based on the research questions and literature reviewed for this study.

Psychosocial Development

In general, researchers consider two different, but related, theoretical constructs important in adolescent psychosocial development. These involve an adolescent's quest to achieve a level of autonomy from parents or other adults (Freud, 1958; McElhaney & Allen, 2001; Yeh, Liu, Huang, & Young, 2007) and to gain a sense of identity (Bukowski & Newcomb, 1983; Erikson, 1963; Meeus, Iedema, Maassen, & Engles, 2005). The aim of this section is to define these two theoretical constructs, to expose the approaches that operationalize the constructs, and to summarize the empirical findings of the general patterns for adolescents in both western and eastern societies.

Autonomy Achievement

One essential process of adolescent psychosocial development is to achieve autonomy (Noom, Deković, & Meeus, 2001). Autonomy is highly related to identity formation since it is the precursor to identity achievement in Erikson's theory (see Erikson, 1963). In addition, from a psychoanalytic perspective, the importance of achieving autonomy, or establishing independence, is essential for developing a strong ego, thus preventing psychopathology (see Freud, 1958). In general, autonomy implies that adolescents increase self-reliance by distinguishing their own ideas from their parents, organize their own experiences, regulate their own behaviors, guide their own life-goals, and make decisions based on their own ideas and experiences without requiring parental emotional support (Yeh et al., 2007). Some researchers feel that the

psychoanalytic view over emphasizes the distancing aspect of adolescent autonomy.

They posit that even though adolescents decrease in closeness and become individualized from parental ties, most adolescents still maintain strong, positive relationships with parents (Allen, Hauser, Bell, & O'Connor, 1994; Noom, Deković, & Meeus, 1999).

There are many approaches to conceptualizing and operationalizing adolescent autonomy (Noom et al., 1999). Hence, a clear definition of autonomy has yet to emerge. Therefore, researchers put more effort into operationalizing and establishing conceptual models of autonomy. Overall, researchers conceptualize autonomy in three domains of cognition, emotion, and behavior (Beckert, 2007; Cicchetti & Rogosch, 2002; Noom et al., 2001; Spear & Kulbok, 2004; Yeh et al., 2007; Yeh & Yang, 2006). For the purposes of this study, cognitive autonomy includes an adolescent's ability to evaluate thought, to voice opinion, to make decisions, to capitalize on comparative validations, and to self-assess (Beckert, 2007); emotional autonomy includes an adolescent's feelings of confidence to define goals independent of the wishes of their parents and peers, and achieve interpersonal competence (Anderson, Worthington, Anderson, & Jennings, 1994; Noom et al., 2001); and behavioral autonomy includes an adolescent's ability to develop age appropriate behaviors (Anderson et al., 1994; Cicchetti & Rogosch, 2002).

The construct of adolescent autonomy is not opposed to adolescent relatedness. In fact, both are key concepts of self-determination theory (Kagitcibasi, 2005). Autonomy is primarily related to the worldview of individualism (Lam, 1997). In general, individualism has a keen emphasis on autonomy while collectivism is tied strongly to conformity. However, in a postmodern world, most cultures encourage both an emphasis of autonomy and conformity (Bush, 2000; Helwig, 2006) even though each

culture may assign different weights and expectations to both (Bush, 2000; Yeh et al., 2007). Accordingly, as Erikson (1963) indicated, cultures may have different expectations for developmental tasks (e.g., when the adolescent needs to achieve autonomy and to what degree of autonomy is acceptable) due to different value systems, but all cultures deal with similar human developmental issues (e.g., identity formation and autonomy) in the socialization process.

Previous studies show differences between western and eastern societies with regard to autonomy. For example, Feldman and Rosenthal (1991) found that the age expectations of achieving behavioral autonomy of Chinese adolescents from Hong Kong occurred later than for teenagers in Australia and the U.S. Sheldon and his colleagues (2004) also indicated that Taiwanese late adolescents from rural (South) Taiwan, had the lowest scores of self-concordance (i.e., people can express their free agency without being restricted by external controls) compared to American, Chinese, and Korean samples of late adolescents from capital cities. However, Xia and her colleagues (2004) showed that Mainland Chinese adolescents from a midsized city had similar autonomy developmental patterns in terms of decision-making as American youth. Accordingly, the results from previous studies are not consistent with the hypothesized outcomes of Taiwanese adolescent autonomy achievement. These discrepancies may be the result of methodological differences in the measurement of the different aspects of autonomy (e.g., behavioral, emotional, and cognitive) and in the regions from which the Chinese sample was recruited. Therefore, this study will explore whether rural Taiwanese youth would have lower scores in three domains of autonomy compared to youth from urban Taiwan.

Identity Formation

In Erikson's eight-stage model of psychosocial development, the adolescent task of identity formation is life's most important developmental task (Erikson, 1963).

Erikson believed that adolescents have maturity in physical and cognitive abilities, live in a facilitative social environment, and are more open to learn and modify new things (Arnett, 2002; Grotevant, 1987). Identity formation results from the establishment of a new sense of ego identity by searching for inner continuity and sameness of one's meaning for others, which is linked to unique values and beliefs in his/her group and or society (Erikson, 1968). Adolescents need to form their identity by making commitments to several important areas in their lives including work (occupation), ideology (belief and values), and love (interpersonal relationships; Erikson, 1968; Vleioras & Bosma, 2005). If individuals are not able to make commitments in each of these areas, they will endure identity confusion (Erikson, 1968). Subsequently, researchers extended Erikson's ideas to include occupation, life style, friendships, dating, sex roles, recreation, politics, and religion in an attempt to assess adolescent ego identity status in an undivided scale (Bennion & Adams, 1986).

Several researchers have commonly operationalized Erikson's concept of identity by using Marcia's (1966) four identity status model in a quantitative approach (see Bennion & Adams, 1986; Berzonsky, 1989; Faber, Edwards, Bauer & Wetchler, 2003; Krettenauer, 2005). Marcia constructed a model of four identity statuses based on two key processes involved in identity formation, exploration and commitment, to assess the status of identity formation which adolescents undertake (Grotevant, 1987; Kroger, 2003). Marcia's four identity statuses are diffusion, moratorium, foreclosure, and achievement.

Individuals in a diffused state have not committed to a certain identity nor are they involved in the exploration process. Individuals in moratorium have engaged in personal exploration but have not yet committed to a certain identity. Young people in a foreclosed status have committed to a certain identity without participating in any personal exploration. Individuals who are achieved have committed to a certain identity after personal exploration (Marcia, 1966).

According to Marcia (2002), the optimal path toward forming one's identity is to reach identity achievement status, while the least favorable path is that adolescents remain diffused. Foreclosure identity is thought to be better than diffusion for most adolescents, because in foreclosure at least the adolescents have taken up some commitments (Côté & Schwartz, 2002), and thus, the ensuing social bond could prevent them from being anomic or deviant (Durkheim, 1951; Le & Stockdale, 2005). However, a foreclosed identity status may not seem as healthy as an achieved status in many western societies because these societies value individuality and view independence as an indicator of maturity (see Marcia, 1980). Therefore, these societies view a foreclosed identity status, resulting from submissive, obedient, and continued identification with primary caregivers as a marker of dependence and immaturity evidencing a failure to meet the expectations of becoming a young adult. From an individualistic perspective, moratorium status is considered better and healthier than either foreclosure or diffusion because of the active role of the developing adolescent to try on different identities and exercise independent reasoning (see Kroger, 2003). Furthermore, achieved status by adolescents increases with age and so there should be fewer diffused adolescents as they

progress (Bergh & Erling, 2005; Meeus, Iedema, Helsen, & Vollebergh, 1999; Meeus et al., 2005).

However, the implication of an “optimal” developmental course is socially constructed to ensure individual and societal well-being (Waterman, 1992). Accordingly, cultural or societal differences in terms of collectivism and individualism have a considerable influence on the “optimal” or preferred patterns of adolescent psychosocial development (Tafarodi & Swann, 1996). Watanabe and Uchiyama (2008), for example, showed different patterns of identity scores between Japanese and U.S. college students. They found that Japanese students demonstrated lower commitment and exploration in the area of education but higher scores in interpersonal contexts. Furthermore, Lam (1997) asserted:

. . . In almost every society dominant cultural codes and culturally invented realities determine meanings and beliefs and further shape human behaviors. The recognition of culture . . . poses a profound challenge to the dominant ideology and assumptions, as well as to existing theoretical and empirical work on adolescent development. . . . (p. 97)

Accordingly, while western societies advocate an achieved identity status and self-accomplishment, collectivistic cultures prevalent in Chinese societies (e.g., Mainland China, Hong Kong, and Taiwan), emphasize interdependence and even praise individuals who sacrifice their interests to accomplish the needs of family, community, or society (Lam, 1997). Hence, a foreclosed identity status may be more suitable or pleasing in Taiwanese society, which has passed on traditional Chinese teaching from Confucius and Tao.

Though researchers have observed and acknowledged the impact of cultural differences, there is a paucity of research that assesses Taiwanese adolescent identity

formation. Among the limited existing studies, there were four electronic records for manuscripts (e.g., abstracts or full-text) from either EBSCOHost or the electronic thesis and dissertation system from the national central library in Taiwan. Only two studies directly applied Marcia's classifications. Cheng (2004) compared 275 Taiwanese college students "in two metropolitan areas in north Taiwan" (p. 69) with 171 Caucasian students. She found that Taiwanese students had lower scores in identity achievement than Americans did, and that Taiwanese college students had longer periods of moratorium and diffusion in both ideological and interpersonal domains. Chang and Huang (1982) also assessed the Taiwanese college students' identity status in Taipei City by using Marcia's identity classifications and showed that 25.8% of students reached an achieved status, 16.4% were foreclosed, 45.0% were in moratorium, and 12.8% remained diffused.

In view of that, it seems that Taiwanese adolescents should have a higher probability of moratorium and would be more diffused than western adolescents would. However, these results did not correspond with a traditional Chinese cultural inference. Also comparing the percentage distribution of identity status of a college student sample from Chang and Huang (1982) with Meeus's (1996) findings for 648 Dutch adolescents, ages ranging from 18 to 20 (ages 15 to 17 are in parentheses, $n = 774$), 43% (31%) were achieved, 13% (16%) in moratorium, 14% (22%) were foreclosed (closed commitment), and 30% (31%) diffused; Taiwanese adolescents have a lower percentage of achievement and diffusion, but higher percentage of moratorium and foreclosure. The results from previous studies are not consistent and seem counterintuitive to Chinese values. Given these contradictions and because westernization has continued with

globalization, there is a need to gain a clearer picture of Taiwanese adolescent identity status.

The sample and the external validity of the results of the above-mentioned studies are potentially spurious. These scholars conducted their research with college students. One of the reasons that some researchers (see Meeus et al., 1999) argue that researchers should assess identity status with college students is because identity conflict arises in late adolescence when adolescents choose their major in college and make career decisions. However, adolescents in Taiwan have to decide in the 11th grade which science field (i.e., natural science or social science) that they want to continue their education. They then choose their major and university after their entrance exam for college, which is two months after high school graduation. Accordingly, Taiwanese youth would experience identity conflict sooner than teens in western countries in this area of development, so an assessment of Taiwanese middle adolescents' identity status seems more appropriate and needed in order to provide timely suggestions and early support to foster healthy adolescent psychosocial development.

Second, it is noteworthy that these two studies examined the most westernized areas in northern Taiwan, not in rural locations. Hence, it might be that the westernization of northern, urban Taiwan, such as Taipei city, contributed to the similarity of the adolescents in this area with their U.S. counterparts. Moreover, little attention has been given to the adolescents' development in rural areas of eastern Taiwan where they still maintain life styles that are more traditional. Overall, to have a better description of identity status for Taiwanese youth, to establish the norm-referenced criteria of identity formation in Taiwanese society, and to provide efficient scaffolding

toward healthy Taiwanese youth psychosocial development, it seems warranted to explore Taiwanese middle adolescents' identity status from both urban and rural settings.

Controlling for Gender Differences

Researchers have sometimes found gender differences in adolescent psychosocial development; however, these differences were either not consistent or lacked significance. To illustrate this, Kroger conducted a systematic literature review of the associations between gender differences and identity formation. Only 6 out of 42 studies showed significant gender differences in the style of identity formation. The most recent research about Taiwanese adolescent identity formation from Cheng's (2004) dissertation indicated that there were gender differences in some domains of identity formation scores, however, there is a lack of replicated research and many areas about the relationship between gender and general identity status among Taiwanese adolescents remains unknown.

Pertaining to autonomy achievement, Zimmer-Gembeck and Collins (2003) indicated that girls generally have later expectation than boys in behavioral autonomy, but little is known about gender effects in cognitive and emotional autonomy. Furthermore, as Gilligan (1977) argued, females are socialized to be caring and attentive to others' needs whereas males are not. Therefore, females are more likely to be interdependent rather than independent or autonomous regardless of cultural or ethnical differences as demonstrated by Kashima and his colleagues (1995). Therefore, gender effects may contribute to adolescent psychosocial development directly or interactively.

Further exploration is needed in Taiwan, especially because little is known of gender differences in Taiwanese autonomy achievement and identity formation in adolescents.

Overall, as mentioned previously, psychoanalytic perspectives identify autonomy achievement and identity formation as two important adolescent psychosocial tasks. Researchers also suggest a positive association between identity formation and autonomy achievement. For example, Spear and Kulbock (2004) observed that, if adolescents want to become autonomous, they need to go through the process of identity formation. Meeus et al. (2005) also pointed out that, as adolescents redefine themselves separate from their parents, they form an independent sense of identity. However, few empirical studies demonstrate this association between autonomy achievement and identity formation in non-western societies. Therefore, this study is designed to explore the status of identity formation and autonomy achievement of Taiwanese youth and to examine the association between identity formation and autonomy achievement. Additionally, this study will explore situational (social structural) and human agential factors which contribute to adolescent psychosocial development in terms of adolescent identity formation and autonomy achievement. The following is a review in the literature of the factors that contribute to individual differences in adolescent psychosocial development.

Situational Factors for Identity Formation and Autonomy Achievement

Situational factors are defined as the social environment and settings that individuals are born and/or live in. These factors include cultural, political, economic, educational, and family systems that have already set limits on an individual's possible range of choices and corresponded behaviors (Côté, 1996; Elder, 1994; Kroger & Green,

1996). Because there are numerous situational factors that potentially influence adolescent psychosocial development, the focus of this study is limited to evaluating the factors of family income, family structure, and school type. These factors were chosen because family income and family structure are two factors frequently mentioned in the literature that have a strong impact on adolescent development across societies whereas school type is a factor that is more acute in Taiwan, but with little understanding of its effect on Taiwanese adolescents. The following is a review of the literature of the situational factors that contribute to individual differences in adolescent identity formation and autonomy processes.

Family Income

Perceived family economic hardship is related to adolescents' poor psychosocial development (Shek, 2003). For example, family (socio-)economic status can influence adolescent identity formation by opening and closing opportunities; adolescents from a poor family will gradually have lower educational and career expectations because they are foredoomed to limited opportunity which may, in turn, self-limit identity formation (Phillips & Pittman, 2003). Hart, Atkins, and Ford (1999) pointed out that family income is positively associated with adolescent moral identity achievement. Also, researchers have shown that family economic hardship had a negative influence on adolescent family relationships (Conger, Ge, Elder, Lorenz, & Simons, 1994) and cognitive functioning (Conger et al., 1992, 1993) which may have an indirect effect on autonomy achievement (McElhaney & Allen, 2001). For example, parents of low-income families tend to

maintain austere rules and discourage individual expression of opinions, which can inhibit the development of autonomy (McElhaney & Allen, 2001).

The average family income in rural Taiwan is much lower than in the urban areas (Directorate-General of Budget, Accounting and Statistics, Executive Yuan, Republic of China, 2008); hence, the differences in family economic status may associate with different developmental statuses of urban and rural adolescent psychosocial development in terms of identity formation and autonomy. The adverse effect of poor family economic status on adolescent identity formation and autonomy achievement may result from limited adolescent exploration opportunities (Haan & MacDermid, 1999; McElhaney & Allen, 2001); it is presumed that adolescents from a low-income family are less likely to reach achieved identity status (Leadbeater & Way, 1996; Markstrom-Adams & Beale Spencer, 1994) and demonstrate autonomy (Kagitcibasi, 2005). Hence, a logical first step is to assess the effect of family income on adolescent development to gain a better understanding of the relationship and to assess whether family income explains a sizeable proportion of the regional effect on adolescent developmental outcomes.

Family Structure

Researchers assert that family structure contributes to adolescent psychosocial adjustment (Nelson & Hughes, 1993). Stemming from a structural functionalist framework, many scholars indicate that a two-biological parent family provides a better environment than other family structures because of the relatively higher percentage of positive adolescent psychosocial developmental outcomes associated with that structure (Falci, 2006; Upchurch, Aneshensel, Sucoff, & Levy-Storms, 1999). Accordingly, it is

reasonable to suspect that many adolescents are at higher risk because of social changes in family structure. As a result, it is not surprising that there are many referenced studies (see Carlson, 2006; Demuth & Brown, 2004; Lansford, Ceballo, Abbey, & Stewart, 2001; Zimmerman, Salem, & Maton, 1995) conducted to evaluate the deleterious effect of alternative family structure on adolescent psychosocial problems (e.g., internalized and externalized problem behavior behaviors).

However, compared to the number of studies dealing with adolescent psychosocial problems, relatively few studies show an association between family structure and adolescent identity formation and autonomy achievement. As for identity formation, Waterman (1982) found that male adolescents who lived with their custodial mothers after parental divorce had higher proportions of identity diffusion statuses, whereas female teenagers who experienced father absence after parental divorce were more likely to enter into the identity achievement status. Yet, Faber and his colleagues (2003) pointed out that parental coalition is more important for female than male adolescents to have identity achieved status. In brief, previous research points out that family structure would probably influence adolescent identity development in both positive and negative ways. Because there might be several confounding main or interaction effects resulted from uncontrolled factors (e.g., gender) between the associations of family structure and identity status. Therefore, little is known about the relationship between family structure and adolescent identity development.

As for autonomy achievement and family structure, Simons, Whitbeck, Beaman, and Conger (1994) indicated that single-parent families, such as custodial mothers and nonresidential fathers, might maintain a low quality parent-child relationship that may

result in adolescent premature autonomy, defined as “a developmental dynamic where parents of high-risk adolescents reduce their involvement and guidance...” (Dishion, Nelson, & Bullock, 2004, p. 515). Like other societies in the world, a growing number of Taiwanese adolescents now live with a single parent or other relatives (e.g., grandparents), especially in rural areas. This structural change is mainly due to parental divorce or parental relocation to the urban areas to seek better employment opportunities. A structural functionalist perspective, presuming that adolescents from two-parent families are more likely to have better developmental outcomes, generally influences public opinions. However, previous research points out that while family structure probably influences adolescent psychosocial development, the impact of family structure on adolescents is not consistent. To date, even in Taiwan, some studies have evaluated the effect of disrupted family structure on adolescent problem behaviors, but few studies evaluated the influences of family structure on adolescent positive developmental outcomes. Accordingly, this study evaluates the family structure effect on adolescent developmental outcomes in terms of identity formation and autonomy achievement.

School Type

Scholars have suggested that the type of school the adolescent attends in terms of differential endowed norms, expectations, and opportunities associated with each school’s educational goals influences adolescent identity formation and autonomy achievement (Kroger, 2003; Lannegrand-Willems & Bosma, 2006; Silverberg & Gondoli, 1996). For example, adolescents’ identity exploration and autonomy achievement might be impeded by nonflexible school curriculum and teacher-centered teaching methods

because they can limit adolescents' opportunities to discover their own interests, talents, and needs (Eccles et al., 1993; Eccles & Roeser, 2005; Neil, 1960).

Few studies have evaluated school effect on developmental outcomes while there is already abundant literature focused on school effect on adolescent academic issues (Anderman, 2002) because academic failure often results in a series of subsequent adolescent problems (Pallas, 2000). In addition, researchers and educators were also interested in academic outcomes of students from different types of schools (e.g., public schools versus private schools versus religious schools) to know how educational efficiency, in terms of promoting adolescent academic achievement and preventing youth problem behaviors, resulted from school failure (see Bryk, Lee, & Holland, 1993; Coleman & Hoffer, 1987; Trickett, 1978). However, academic achievement is just one aspect of adolescent performance and cannot fully represent adolescent developmental statuses. Additionally, the purpose of education is to not only teach or transmit scientific knowledge, but more importantly to nurture adolescents to be well-rounded people. Therefore, researchers have recently broadened their investigations toward mental health outcomes, such as adolescent sense of belonging, depression, social rejection, and school problems (see Anderman, 2002). Nevertheless, little is known about how schools could actively promote healthy adolescent development rather than passively prevent youth deviant behaviors and problems.

Overall, a better comprehension of the relationship between school type and adolescent psychosocial developmental domains is needed because previous studies tend to place excessive emphasis on academic outcomes while overlooking developmental outcomes such as school effect (Eccles & Roeser, 2005). Inspired by western societies'

recent research directions of school effects, a few Taiwanese researchers have begun to assess the effect of public school contexts (experiences) on junior adolescent psychological outcomes (see Yi, Wu, Chang, & Chang, 2009). Each type of Taiwanese high school has somewhat differential ecological school settings due to their rankings, reputations, and/or emphasis so there is limited information about the impact on adolescent psychosocial development. This study will explore the relationship between school type (i.e., senior high and vocational high) and adolescent identity formation and autonomy achievement.

(Human) Agential Factors for Identity Formation and Autonomy Achievement

(Human) agential factors, including individuals' attitudes, beliefs, and interactions, aim to achieve their goals by either responding submissively through awareness of the limitations from the social structure, or by adopting new thoughts and behaviors actively to protest against and eliminate the constrained opportunities from the social structure (Côté, 1996; Kroger & Green, 1996). There are diverse agential factors that could contribute to adolescent psychosocial development. However, this study is going to evaluate agential factors frequently mentioned in previous studies including culture, attachment, and resiliency.

Cultural Value Affiliations Individualism Versus Collectivism

In the area of cultural psychology, scholars frequently mention the abstract and broad constructs of individualism and collectivism and infer a common source of cultural differences between western societies like the United States and eastern societies like

Taiwan. Generally, the mainstream culture in the U.S. is described as more individualistically oriented while Asian or Chinese families like those in Taiwan are portrayed as more collectivistically oriented (Fuligni, Tseng, & Lam, 1999).

Individualism is a cultural value affiliation that relaxes social bonds where an individual's needs are of more primary concern than the needs of others. Collectivism, on the other hand, emphasizes cultural value affiliation that stresses the interconnectedness between individuals where an individual's needs are swallowed up within the larger social group (e.g., family, community, and society). Thus, individuals in collectivistic societies are more disposed to give priority to family goals (or other social group) over their own personal aspirations (Fuligni, Yip, & Tseng, 2002).

Therefore, in previous studies, social (family) obligations/duties and interdependence/reliance was the common aspect that researchers applied to capture (measure) differences between individualism and collectivism (Fuligni et al., 1999, 2002; Phinney, Ong, & Madden, 2000). Lee (1996) offered this concise summary:

Harmonious interpersonal relationships and independence [is emphasized by Confucianism]. Family interactions were governed by prescribed roles defined by family hierarchy, obligation, and duties... filial piety was highly cherished, and respect and shame were used by parents as means of control... parents expected to be taken care of in their older age [by their children]. . . . (p. 252-253)

Most psychosocial development literature was spawned in western societies.

Individualism was generally portrayed positively and led to healthy identity formation and autonomy achievement (Hui & Yee, 1994; Lam et al., 2004). On the other hand, collectivism was often described as “a syndrome of attitudes and behaviors associated with a concern for others” (Lam, 1997, p. 100), and therefore, individuals were vulnerable to external influences (or were more likely relying on an external locus of

control), which might limit an individual's sense of autonomy (Hui & Yee, 1994), and lead to a foreclosed identity status (Cheng, 2004).

Globalization has made it difficult to find a society that is purely collectivistic or individualistic. Globalization is a prevalent phenomenon which postulates that the intensive connections between cultures have been radically accelerated (Arnett, 2002). Further, different cultures influence each other via the flow of cultural values, products, and information due to international media disseminations, advanced telecommunications, and internet technology (Arnett, 2002; Jenson, 2003). Consequently, the cultural mixture between collectivism and individualism due to globalization could lead "a Chinese [to] act collectivistically toward one target, but individualistic toward another" (Chiu, 1990, p. 104). Therefore, it is less likely for an individual to be either collectivistic or individualistic based solely on the individual's affiliation with one culture over another because of the increased globalization regardless of ethnicity or nationality.

Since the global culture more closely resembles western culture, Arnett (2002) pointed out that those adolescents who live in non-western cultures are required to exert more effort to find a balance between two cultures to form their identities. This quest for balance might, in turn, increase the probability of identity confusion for non-western youth (i.e., adolescents receive conflicting messages about what they should do for their future education and career). Therefore, it would be important for adolescents to find their affiliation between two major cultures (i.e., individualism versus collectivism) rather than be lost or anomic between the two cultures. Unfortunately, little research has been conducted to delineate the degree to which culture value affiliations relate to adolescent psychosocial outcomes (i.e., identity formation and autonomy achievement).

Taiwan follows a traditional Chinese culture that values collectivism. In this cultural context, interdependence with hierarchical authority is emphasized (Lee, 1996). Taiwanese youth are expected to respect elders and authorities within the family, at school, and in the workplace. They are encouraged to be submissive and to recognize that their behaviors are largely determined by their elders (Yeh & Yang, 2006). Nevertheless, through frequent contact and identification with western culture, the values of many Taiwanese youth have changed to become more individualistic (Chattopadhyay & Marsh, 1999; Deaton & Paxson, 2000). This value shift would encourage Taiwanese adolescents to achieve an independent identity and become more autonomous.

Accordingly, the result of globalization for Taiwanese society, especially in urban areas, is that some contextual climate changes encourage Taiwanese youth to focus on their own needs more than their relatives' needs. However, few empirical studies explore the association between regional residency and cultural value affiliation. It is still unknown whether the cultural climate in the rural areas would be similar to the urban areas due to the internet exposure and mass media regardless of geographical or financial status. In sum, this study explores whether certain cultural affiliations are highly associated with regional residency (i.e., urban or rural), and how cultural value affiliation (i.e., collectivistic, or individualistic) contributes to identity formation and autonomy achievement in adolescents.

Attachments

Scholars frequently credit healthy attachment for fostering adolescent psychosocial adjustment and preventing psychosocial problems (Allen, Moore, Kuperminc, & Bell, 1998; Laible, Carlo, & Raffaelli, 2000; Liu, 2008; Noom et al., 1999; Zimmermann & Becker-Stoll, 2002). In general, attachment behaviors are built into human nature to enhance individual survival and security, especially in adverse or distressing circumstances (Bowlby, 1982). Additionally, attachment is used to “describe the quality of relationships with significant others” (Noom et al., 1999, p. 771).

Western researchers frequently extend secure attachments to parental caregivers as important bonds into adolescence (see Laible et al., 2000; Noom et al., 1999; Raja, McGee, & Stanton, 1992). Whether or not attachment to parents is still important in adolescence has been a controversial issue for a long time because adolescents spend less time with their parents than they did in childhood. Some scholars (Adams-Price & Greene, 1990; Freud, 1958) view a type of secondary attachment occurring in adolescence as a time to transition from emotional reliance on parental attachments to other types of attachment to resolve the Oedipus complex and to gain independence. Yet, existing research in western societies supports that attachment to parents remains as important as peer attachment for healthy adolescent psychosocial functioning (Laible et al., 2000). It might be that parents and peers serve different purposes in terms of the support, advices, and information they provide to adolescents (Raja et al., 1992).

Accordingly, to assess whether similar results would manifest in Taiwan is needed because most of the attachment studies in Taiwan focus on infants or young children to their primary caregivers, even though attachment is a life-long issue and is not limited to the early stages of life (Bowlby, 1982). In addition, Yeh and Yang (2006)

indicated, “Taiwanese parents actually play a two-edge role in affecting adolescents . . . they are themselves partly a source of emotional distress but are also an important source of support . . .” (p. 161). Therefore, it would be meaningful to examine how Taiwanese youth maintain attachment bonds with parents to better understand whether Taiwanese youth have a distant or intimate relationship with their parents, to explore the relationship between attachment to parents and attachment to peers, and to assess the extent to which these attachment bonds contribute to adolescent identity formation and autonomy achievement. The following paragraphs review existing research regarding the relationship between attachment and psychosocial development in terms of identity formation and autonomy in western societies exclusively because no formal research has been published on Taiwanese or Chinese adolescents.

Parent-child attachments. Researchers have been interested in the influences of family relationships on adolescent identity development. Specifically, the interactions between parents and their adolescents are thought to provide adolescents with baseline experiences from which to develop their own point of view (Grotevant, 1987). Researchers indicate that quality parent-child attachment, or secured attachment, fosters adolescent identity moratorium and achievement because it serves as a secure base for adolescents to explore the environment outside the family and allows them to feel free to seek comfort when under duress (Collins & Laursen, 2004; Zimmermann & Becker-Stoll, 2002). Conversely, researchers suggest that “too close, involved, and protected parent-adolescent relationships” (Kroger, 2003, p. 213) could lead to overly involved parents who encourage identity foreclosure status (Cakir & Aydin, 2005; Kroger, 2003). Finally, with parents who are distant or rejecting, low attachment between parent and adolescent

is highly related to diffusion identity status (Kroger, 2003). Overall, it is acknowledged that quality parent-adolescent attachments have positive impacts on adolescent identity formation and autonomy achievement in most western studies. However, little is known about the association between the quality of the parent-adolescent attachment in Taiwan. Hence, there is a need to explore this hypothesized relationship in Taiwanese youth.

For the dimensions of autonomy achievement, it seems that from a psychoanalytic or neo-psychoanalytic perspective, parental attachment conflicts with autonomy. However, many researchers postulate that autonomy is not equal to detachment via conducting convergent (see Ryan & Lynch, 1989) and construct validity (see Beyers, Goossens, Vansant, & Moors, 2003) among adolescent samples. Accordingly, adolescent autonomy and secure parental attachment are generally hypothesized to be positively correlated. Little research has assessed the pattern of Taiwanese adolescent attachment to parents and it is still unknown whether a very close attachment bond between youth and their parents would impede or foster their autonomy achievement. Therefore, there is a need for further research to explore the association between parent-adolescent attachment and autonomy achievement in each domain (i.e., behavioral, cognitive, and emotional).

Peer attachments. As adolescents become more independent from their parents, peer groups become more influential (Bednar & Fisher, 2003). Adolescent peer relationships play an important role in fostering positive adolescent psychosocial development. Peer groups can contribute to identity formation by serving as a guide to establish a sense of self that is separate from their parents or family (Brown, 1990). Peers frequently provide different perspectives to stimulate independent thought through expressed differences while maintaining a balance by establishing their own beliefs and

principles (Kerpelman & Pittman, 2001; Parker, Rubin, Earth, Wojslawowicz, & Buskirk, 2006) which is also essential for autonomy achievement.

Adolescent peer relationships have an essential function to the identity formation process of adolescents based on Erikson's notion (Parker et al., 2006) because peer relationships provide possible identities and subsequent consequences, which are more likely to be age related, helping adolescents to establish their personal identity (Moore & Boldero, 1991). These relationships also help form one's identity by "forming cliques and by stereotyping themselves, their ideals, and their enemies" because of the fear of role confusion (Erikson, 1963, p. 262). Furthermore, peers may serve as a secure base for adolescents to explore and try out new activities that contribute to identity formation. In sum, maintaining quality peer relationships may facilitate the adolescent identity exploration process for possible identities in terms of what they believe and how they act based on their beliefs and values.

From a Freudian perspective (as mentioned previously), the transition of attachment ties from parents toward peers is seen as essential to individual independence and autonomy (Freud, 1958). In addition, from a social-learning perspective, peers can function as role models in terms of autonomy achievement to encourage the adolescents to become more autonomous (Zimmer-Gembeck & Collins, 2003). Likewise, from a cognitive stimulus aspect, peers provide rich decision-making information for adolescents that can help adolescents gain more autonomy (Bednar & Fisher, 2003). In summary, according to previous research, a supportive peer relationship in adolescence should have a positive effect on adolescent autonomy achievement.

Overall, from these theoretical viewpoints, the associations between peer attachments and psychosocial development were hypothesized as positively related, however, little research evaluating the extent that attachments to peers might contribute to adolescent identity formation and autonomy achievement includes Taiwanese participants. A review of previous literature shows a large number of adolescents have distant attachments with their parents. Hence, whether most of these distantly attached adolescents maintained better attachment bonds with their peers in order to sustain their own psychosocial or psychological needs, as portrayed by psychoanalytic theorists, is still unknown.

Resiliency

Generally, scholars define resiliency as continued positive or effective functioning and abilities in difficult situations, and/or recovery after a significant distress event (Luthar, Cicchetti, & Becker, 2000; Masten et al., 1999; Schoon, 2006). Resilient adolescents have more capacity to develop into healthy and competent adults (Markstrom, Marshall, & Tryon, 2000). Adolescent resilience is not only widely affected by several events and enduring environments, but also the inner strengths of the adolescent (Hauser, Vieyra, Jacobson, & Wertlieb, 1985). Plenty of research has identified the contribution of some protective factors such as parental support (Prevatt, 2003), social support (Simons, Whitbeck, & Wu, 1994), and personal attribution (Adejuwon & Balogun, 2004; D'Imperio, Dubow, & Ipplotio, 2000; Smith & Carlson, 1997), to adolescent resiliency in risk situations, such as living in poverty. The importance of resilience has been emphasized (Markstrom et al., 2000) for more than three decades of continued study

(D'Imperio et al., 2000). The appeal of the concept of resiliency lies in its attempt to explain why and how some young people can overcome their hardship and become successful adults, while others become victims of the disadvantaged experiences and environments (Adejuwon & Balogun, 2004).

Most existing research captures resiliency by observing certain target behaviors of positive functioning after adverse events (e.g., academic achievement, general well-being, absence of problem behaviors). This approach to assess resiliency may result in certain drawbacks. For example, since resiliency was measured by observing the presence or absence of certain behaviors, it was difficult to check reliability and validity. This approach may also result in censoring issues and may lead to false conclusions that those adolescents who did not have the presence (or absence) of target behaviors lacked resiliency. Accordingly, an operationalized measure of resiliency created by Markstrom, Sabino, Turner, and Berman (1997), might serve as an alternative approach to better capture resiliency by treating it as a continuous personal psychological trait rather than as a dichotomous phenomenon. Markstrom and her colleagues assessed resiliency by using Erikson's eight ego strengths in a quantitative approach. Ego strength can be used to assess resiliency because the individual's ego strengths represent the result of a dynamic developmental process that indicates how individuals meet their crisis and adapt themselves in certain situations while maintaining psychosocial health and well-being (Markstrom et al., 1997, 2000). Hence, the measure of resiliency established by Markstrom has certain advantages over the traditional indirect indicators because of the available information of reliability and validity and the solution of censoring problems by assessing perpetuity of a personal trait rather than occurrences of behaviors.

According to Erikson's theory (see Erikson, 1963), an individual's resiliency, in terms of ego strengths, contributes to positive psychosocial development. It is rational to presume, therefore, that prior resiliency relates to future identity formation and autonomy achievement. However, there is a lack of research to assess how resiliency, in terms of ego strengths, could possibly contribute to developmental outcomes because most researchers treat resiliency as an outcome variable. Therefore, this study will evaluate whether resiliency relates to Taiwanese adolescent psychosocial developmental outcomes in urban and rural areas.

Objectives and Research Hypothesis

Based on the literature review and purpose of this study, to delineate the psychosocial development status of Taiwanese youth, the objectives and research hypotheses of this study are described below.

Objectives

1. Explore the association between adolescent identity formation and autonomy achievement after considering gender differences.
2. Describe the similarities and differences in adolescent psychosocial developmental statuses of identity formation and autonomy achievement between regional groups.
3. Evaluate the extent to which situational factors (i.e., family structure, family income, and school type) predict psychosocial developmental outcomes after controlling for the effects of region and gender.

4. Evaluate the extent to which agential factors (i.e., cultural value affiliation, parent attachment, peer attachment, and resiliency) predict psychosocial developmental outcomes after controlling for the effects of region and gender.

5. Examine the extent to which situational and agential factors partial out the association between each factor and adolescent psychosocial developmental outcomes after controlling for the effects of region and gender.

6. Provide suggestions to researchers, educators, educational policy makers, and parents based on these data, in terms of what factors play the greatest role in Taiwanese adolescent psychosocial development.

General Research Hypotheses

1. Achieved and/or moratorium identity statuses of adolescents will relate to better autonomy achievement than diffused and/or foreclosed identity statuses after controlling for the effect of gender

2. Adolescent psychosocial developmental outcomes (i.e., identity formation and autonomy achievement) will differ between urban and rural areas after controlling the effect of gender. More urban teenagers would have an achieved identity status and/or higher autonomous status than rural adolescents.

3. Adolescent psychosocial developmental outcomes will differ significantly between subgroups defined by situational factors after controlling for the effects of region and gender differences.

4. Adolescent psychosocial developmental outcomes will differ significantly between subgroups defined by agential factors after controlling for the effects of region and gender differences.

5. Adolescent psychosocial developmental outcomes will differ significantly between subgroups defined by situational and agential factors after controlling for the effects of region and gender.

CHAPTER III

METHOD

Overall, this study seeks to explore the psychosocial development of Taiwanese adolescents in both urban and rural areas and to examine the role of situational factors (i.e., family economic status, family structure, and school effect), agential factors (i.e., cultural value affiliation, attachments to parents and peers, and resiliency), and combined situational and agential factors in this matter. Another purpose is to provide guidance and suggestions for applying a western psychosocial development model to Taiwanese adolescents, and also for promoting Taiwanese adolescents' healthier psychosocial developmental outcomes. The research procedures used to recruit participants, select instruments, and analyze the data are described below.

Sample

Prior to initiating data collection, Institutional Review Board approval was sought in both the United States (at Utah State University) and in Taiwan (at each target school). Both IRBs approved this project. Data were collected from tenth to twelfth graders from high schools and vocational schools by using stratified cluster sampling in Taipei City, Taitung County, and Hualien County, Taiwan. These three regions were selected as research targets because of their demographic contrasts. Taipei City is the largest metropolitan city whereas Taitung and Hualien Counties are two contiguous agricultural areas with fairly large land mass but small populations. Since there are no known datasets collected from the Taitung and Hualien County, an oversampling approach was

applied to accumulate more information from the rural areas.

Recruitment procedures unfolded as follows. Respecting to the hierarchy structure of educational organizations in Taiwanese culture, a pre-contact was made to administrators of all high schools and vocational schools in both urban and rural Taiwan to ask for permission to execute this study. Official administrative letters were then sent to the individual school administrators formally requesting permissions to conduct research in those schools under their supervision. Once general approval was garnered, teachers and students from the target classes designated by principals based on the arrangement convenience of class schedules (or dean of teaching/counseling affairs) were contacted. Following this, the participating teachers introduced the project to their students, and the students from the selected classes were invited to complete the self-report questionnaires at school. In sum, 447 (out of approximately 455 invited) students from Taipei City, 340 (out of approximately 350) students from Taitung County, and 362 (out of approximately 385) from Hualien County completed the questionnaires.

Measurement

With the exception of the individualism-collectivism (INCOL) scale which was already available in Chinese-Mandarin, all scales used in this study required translation into Chinese-Mandarin prior to initiating the study. The procedure of translation was as follows. Three researchers (two researchers with doctoral degree while one with master degree) in the field of adolescent development who were fluent in both English and Mandarin translated the scales from English to Mandarin separately and any discrepancies were brought up and resolved among these researchers to arrive at a final

translation. Then five Chinese monolingual speakers checked understanding of the statements of those scales. Finally, comparing the feedback of translation from the students in the field test, culture applicability was assessed and modifications were made by the researcher for ease and clarity for Taiwanese adolescents.

Instruments

Cognitive Autonomy

The Cognitive Autonomy and Self Evaluation (CASE) inventory was used to assess adolescent cognitive autonomy. The CASE inventory is a 27-item Likert-format scale. The CASE inventory has five subscales; eight items were designed for measuring evaluating thinking, five items for voicing opinion, six items for decision-making, three items for self-assessing, and five items for comparative validation. Using scores from the original study, the Cronbach's alpha were .87 for evaluating thinking (e.g., I think about the consequences of my decision), .80 for voicing opinions (e.g., If I have something to add to a class discussion I speak up), .77 for making decisions (e.g., There are consequences to my decisions), .73 for self-assessing (e.g., I am good at identifying my own strengths), and .64 for comparative validation (e.g., I need family members to approve my decisions) for North American teenagers (Beckert, 2007).

The response options ranged from one (strongly disagree) to five (strongly agree) in this study. The score of each subscale were summed separately to form a measure of evaluative thinking, voicing opinions, decision-making, self-assessing, and comparative validation. Higher scores in each subscale represent an advanced cognitive autonomous tendency.

Behavioral and Emotional Autonomy

Adolescent emotional autonomy is achieved when adolescents feel confident to define their goals independent of the wishes of their parents and peers. Behavioral (e.g., I find it is difficult for me to start a new activity alone) and emotional (e.g., When I act against the will of others, I usually get nervous) autonomy items from the Adolescent Autonomy Questions (AAQ) were used in this study. The AAQ was developed by Noom and his colleagues (1999, 2001). This autonomy measurement is a five-item Likert-format scale and each item has values from one (not at all descriptive of me) to five (very descriptive of me). The original sample recruited by AAQ were 400 Dutch adolescents who ranged in age from 12 to 18 years and the Cronbach's alpha was .64 for behavioral and .60 for emotional autonomy. The scores of each subscale were summed separately to form a behavioral autonomy and emotional autonomy scale.

Identity Status

The Modified Extend Objective Measure of Ego Identity Status scale (The Modified EOMEIS) is a 40-item scale developed by Akers, Jones, and Coyl (1998) to modify Bennion and Adams (1986) Extended Objective Measures of Ego Identity Status (EOM-EIS-2), which was a 64-item scale. Each item was designed to measure a specific identity status, foreclosure (i.e., My own views on a desirable life style were taught to me by my parents and I don't see any need to question what they taught me), diffused (i.e., There is no single "life style" which appeals to me more than another), moratorium (i.e., I am looking for an acceptable perspective for my own life style view, but I have not really found it yet), and achievement (i.e., After considerable thought I have developed my own

individual viewpoint of what is for me an ideal “lifestyle” and do not believe anyone will be likely to change my perspective); the modified EOMEIS was designed to cover only five of the original eight domain areas (occupation, life style, friendship, dating, and education). The Cronbach alpha internal reliability coefficient for each identity status score in the original study of 1,159 adolescents in United States was .74 for achievement, .71 for moratorium, .79 for foreclosure, and .78 for diffusion (Akers et al., 1998).

The response values range from one (strongly disagree) to six (strongly agree). The summed subscale scores were obtained to form a continuous measure of achievement, moratorium, foreclosure, and diffusion. The classification of identity status for each subject in this study was done by following procedures: (a) calculate the identity score of each of five dimensions with four statuses for each adolescent, (b) transform the original score into a *Z* score for each adolescent by using the grand mean and standard deviation, (c) compare the *Z* scores of each adolescents from each status within each dimension and the highest *Z* score of the status will be the status of that dimension, and (d) calculate the total frequency of identity status from the five dimensions and the highest frequency of identity status will be their final identity status. Hence, after the classification procedures, the adolescent would be assigned to an overall identity status by their disposition of certain identity status.

Cultural Value Affiliations Individualism Versus Collectivism

Generally speaking, the difference between western and eastern cultures is that western (individualistic) cultures emphasize independent relationships, personal goals,

autonomy, and competence while eastern (collectivistic) cultures emphasize interdependent relationships, group goals, group cohesion, and community cooperation (Matsumoto & Kupperbusch, 2001). In sum, several studies in the cross-cultural psychology field have addressed the measurement of the individualism-collectivism construct to represent the difference in values between cultures (Singelis, 1994).

The short version of individualism-collectivism scale (INCOL) established by Hui and Yee (1994) is a popular measurement of individualism (idiocentrism)-collectivism (allocentrism). The short version of INCOL scale is a 33-item measure with an “ingroup solidarity” factor and a “social obligation” factor. Because the most obvious difference between individualism and collectivism is that collectivistic affiliation requires that an individual gravitate toward group norms, surrendering individual needs and personal behaviors to adjust to meet group expectations whereas individualistic orientation allows the expression of self and diverse behavioral choices (Tafarodi & Walters, 1999). Accordingly, the social obligation scale becomes the significant indicator of collectivism which “represents collectivist orientation toward those with whom one has to interact without much choice” (Hui & Yee, 1994, p. 419) and therefore, was chosen to capture adolescents’ cultural value affiliation. The social obligation scale of INCOL consists of 15 items on a 6-item Likert scale with response options ranging from one (strongly disagree) to six (strongly agree). Cronbach’s alpha was .68 in Hui and Yee’s study of Chinese adults. However, because one item had an opposite relationship, “If possible, I would like co-owning a car with my close friends, so that it wouldn’t be necessary for them to spend much money to buy their own cars,” with the rest of items, only 14 items were used in this study. Higher scores this scale represents more collectivistic orientation.

Parents and Peer Attachment

The Modified Inventory of Parent and Peer Attachment (IPPA) was used to assess the perceived social support from parents and friends separately. The Modified IPPA is a 24-item scale from the original 53-item IPPA scale developed by Armsden and Greenberg (1987). However, because of time constraints and concerns for subject burden associated with long surveys, Raja et al. (1992) modified the IPPA scale into a short version; 12 items to measure parent-child relationships (e.g., I tell my parents about my problems and troubles; my parents respect my feelings, I don't get much attention at home) and the remaining 12 items measure friendship (e.g., My friends encourage me to talk about my difficulties; my friends listen to what I have to say; I get upset a lot more than my friends know about). The test-retest reliability scores in a sample of 935 adolescents were .82 and .80 for the scores of each scale, respectively. In this study, the response options ranged from 1 (always true) to 5 (never true). The scores from each question were summed separately to form an attachment to parents score and an attachment to peers score.

Resiliency

Psychosocial Inventory of Ego Strengths (PIES) developed by Markstrom et al. (1997) has been used to assess resiliency (Markstrom et al., 2000). A reduced version of PIES has 32 items which correspond to Erikson's ego strengths including (a) hope (e.g., When I think about the future, I feel optimistic), (b) will (e.g., In many ways, I have control over my future), (c) purpose (e.g., When I think of my future, I see a definite direction for my life), (d) competence (e.g., I know I have skills to carry out various tasks

and responsibilities important to me), (e) fidelity (e.g., I do not pretend to be something that I am not), (f) love (e.g., I have experienced feelings of love with someone outside of my family), (g) care (e.g., when I know someone is having a difficult time, I really feel concerned about them), and (h) wisdom (e.g., I feel okay with the way I have handled my life so far; Markstrom et al., 2000).

The response options valued from one (strongly disagree) to six (strongly agree) correspond to the identity status scale in this study. The scores of each subscale were summed to form a measure of resiliency; higher score in PIES indicates more resilient tendencies. The Cronbach alpha from the original study was .81 for the scores for white adolescents ($n = 60$) and .78 for African American adolescents ($n = 53$).

Family Income

Family income was divided into six categories, less than NT\$30,000, between NT\$30,000-50,000, between NT\$50,000-60,000, between NT\$60,000-80,000, between NT\$80,000-100,000, and above NT\$100,000 (The currency conversion rate is NT\$31.92 = US\$1).

Family Structure

Types of family structure were divided into two categories as is common in the Taiwanese literature on family type; a traditional (i.e., two biological parental) family and a non-traditional (i.e., single parental or other arrangements of family structure).

School Type

School type was divided into two categories as is common in the Taiwanese literature on school type: high schools and vocational schools.

CHAPTER IV

RESULTS

Sample Characteristics

Of the 1,149 Taiwanese adolescents participating in this study, nearly 39% ($n = 447$) lived in Taipei City while the remaining 61% ($n = 702$) lived in the rural areas (i.e., Taitung and Hualien County). More female adolescents participated than male adolescents; about 54% of the adolescents in urban area ($n = 241$) and 62% of the participants in rural areas ($n = 435$) were females. Of the 447 participants in the urban area, around 69% were enrolled in senior high schools while 31% attended vocational high schools; among the 702 adolescents in the rural areas, nearly 57% of the participants ($n = 403$) were senior high students and about 43% were vocational high students ($n = 299$). Most of the adolescents in urban (about 87%) and rural (around 77%) areas were from a family with two biological parents. Chi-square test ($\chi^2_{(1)} = 19.76, p < .001$) further informed that there was a statistically significant difference between family structure and regional residency; more rural respondents were from non-traditional families. The majority of the adolescent participants selected a family income range from \$30,000~60,000 NT dollars (current exchange rate is NT\$31.92 = US\$1), around 30% urban adolescents ($n = 133$) and 42% rural teens ($n = 278$) were in this category; nevertheless, the distribution of family income was not similar for urban and rural adolescents. The median of family income for urban adolescents fell in the category \$60,000~80,000 NT dollars whereas the median for rural teenagers was at the level of \$30,000~60,000 NT dollars. There were more urban adolescents (around 52%) in the

upper-middle and upper-social class position (i.e., has family income more than \$60,000 NT dollars per month) than their rural counterparts (about 29%). Chi-square test ($\chi^2_{(5)} = 129.38, p < .001$) also indicated that the proportion of family income was significantly different between urban and rural areas. Adolescents of urban areas were slightly older ($M = 17.12; SD = 1.05$) than youth in rural areas ($M = 16.59, SD = 1.20$). Table 1 (see Appendix A) contains detailed demographic information for both urban and rural Taiwanese adolescents.

Psychometric Characters of Instruments

Table 2 (see Appendix A) summarizes the psychometric properties of the independent and dependent variables used in this study. In addition to the descriptive statistics, Cronbach's alphas for scores on these scales ranged from .62 to .87 for the participants. These indicated acceptable (i.e., alpha equals .60) to good internal reliability (i.e., alpha scores .70 or above; Henson, 2001).

Missing Patterns Within the Sample

The response frequency and percentage for each study variable is presented in Table 3. With the exception of family income (about 8%), the frequency and percentage of missing data were small (less than 1%). Further *Phi* correlation analysis for dichotomous variables produced by dummy coding studied variables (responded versus missed) was conducted to evaluate whether there was any pattern in the missing values among participants who skipped portions of their questionnaires. From the correlation matrix (see Table 4 in Appendix A), it appears that adolescents who failed to respond to

the behavioral autonomy scale at the beginning of the battery, tended to overlook the individualism versus collectivism scale later in the inventory. Youth who did not respond to the questions on attachment tended to omit responses on both the emotional and behavioral autonomy scales. Finally, participants who skipped emotional and behavioral autonomy in the beginning of the survey were more likely to skip response options on resiliency at the end of the instrument. Most of the missing patterns were most likely unintentional because these scales are connected to each other in pages that were particularly adhesive in couple questionnaires. Nonetheless, it appears likely that a few adolescents who were not careful about whether they answered each question at the beginning, tended to fail to notice questions at the end as well. Based on the results of missing pattern analysis, the findings of this study should still be generalizable to the target population with only minor cautions.

Correlations

Correlation analysis of studied variables was conducted preliminarily to examine convergent validity among psychosocial development, internal consistency among indicators of the same scale, and the general pattern of associations of factors and outcome variables by gender and region.

Correlations among Variables of Psychosocial Development

Correlations for the psychosocial developmental outcomes for male and female adolescents in urban and rural areas are presented in Tables 5 and 6, respectively. The Cronbach's alphas are provided on the diagonal of each correlation matrix. Most of the

scales used in this study were adopted from western societies and are presumed more reliable for investigating urban youth than rural teenagers because of differential westernization. However, most pairs of Cronbach's alphas between urban and rural youth were similar. The only exception to this was the Cronbach's alpha for emotional autonomy ($\alpha = .59$) which was much lower in the rural. Because of the marginally acceptable reliability, the findings involving emotional autonomy in the rural sample need to be interpreted with caution.

Urban male adolescents. For the urban male adolescents, the correlation coefficients among subscales of cognitive autonomy were significantly positively correlated with the exception of comparative validation. Comparative validation was negatively correlated with the rest of the cognitive autonomy subscales but only the coefficient with decision-making was significant ($r = -.24, p < .01$). This significant negative coefficient indicates that male youth who had higher scores of not frequently using comparative validation were more likely to have lower scores in decision-making. A further look at the associations among emotional, behavioral, and each domain of cognitive autonomy, indicated that emotional autonomy was significantly positively correlated with behavioral autonomy ($r = .35, p < .01$) and with each domain of cognitive autonomy including comparative validation. Behavioral autonomy was significantly positively associated with all domains of cognitive autonomy except comparative validation. Though the correlation coefficient was negative between behavioral autonomy and comparative validation, it did not reach statistical significance ($r = -.03, p > .05$).

Because identity status was measured on a nominal level, dummy coding was conducted for each identity status in order to explore the approximate association between identity status and three aspects of autonomy. Accordingly, the correlation coefficients became point-biserial because the assessment involved the relationship between a dichotomous and a continuous variable. Compared to other identity statuses, achieved male adolescents in the urban area were more likely to have higher scores in evaluative thinking ($r_{pbis} = .16, p < .05$), voicing opinion ($r_{pbis} = .23, p < .01$), decision-making ($r_{pbis} = .20, p < .01$), self-assessing ($r_{pbis} = .24, p < .01$), emotional autonomy ($r_{pbis} = .26, p < .01$), and behavioral autonomy ($r_{pbis} = .25, p < .01$). Foreclosed male adolescents in the urban area were more likely to have lower scores in evaluative thinking ($r_{pbis} = -.16, p < .01$) and behavioral autonomy ($r_{pbis} = -.18, p < .05$) compared to other statuses. Diffused urban male adolescents tended to have lower scores in evaluative thinking ($r_{pbis} = -.20, p < .01$), voicing opinions ($r_{pbis} = -.18, p < .01$), decision-making ($r_{pbis} = -.19, p < .01$), self-assessing ($r_{pbis} = -.25, p < .01$), and behavioral autonomy ($r_{pbis} = -.17, p < .05$) than all other urban male youth.

Urban female adolescents. The correlation coefficient among each domain of cognitive autonomy was significant for urban female adolescents in this sample. The results indicated that urban females were similar in outcome to the urban male sample presented above. The direction of correlation coefficient for comparative validation was not the same as the rest of the cognitive autonomy subscales. Female adolescents in the urban area who did not use comparative validation frequently were more likely to have lower scores in evaluative thinking ($r = -.29, p < .01$), voicing opinions ($r = -.16, p < .05$), decision-making ($r = -.28, p < .01$), and self-assessing ($r = -.22, p < .01$). Emotional

autonomy was significantly positive correlated with each aspect of cognitive autonomy (correlation coefficients ranged from .13 to .41) and behavioral autonomy ($r = .16, p < .05$) while behavioral autonomy was significantly positive correlated with the each domain of cognitive autonomy except comparative validation (Pearson r ranged from .21 to .33).

Achieved urban female adolescents were more likely to have higher scores in evaluative thinking ($r_{pbis} = .20, p < .01$), decision-making ($r_{pbis} = .18, p < .01$), self-assessing ($r_{pbis} = .26, p < .01$), and emotional autonomy ($r_{pbis} = .14, p < .05$). Female adolescents in the urban area who were in moratorium had significantly higher scores in decision-making ($r_{pbis} = .15, p < .05$) and behavioral autonomy ($r_{pbis} = .20, p < .01$) than girls in other identity statuses. Foreclosed urban girls tended to have lower scores in evaluative thinking ($r_{pbis} = -.15, p < .05$), decision-making ($r_{pbis} = -.15, p < .05$), and behavioral autonomy ($r_{pbis} = -.18, p < .01$). Diffused urban female teenagers had significant lower scores in each domain of cognitive autonomy except for comparative validation (point-biserial correlation ranged from -.23 to -.13) and were considerably lower in behavioral autonomy ($r_{pbis} = -.15, p < .05$).

Rural male adolescents. As for the male adolescents in rural areas, each domain of their cognitive autonomy scores was significantly correlated to each other, although not always in the same direction. Once again, comparative validation was negatively correlated with other domains of cognitive autonomy whereas each of the other scales positively associated with each other. Emotional autonomy was positively correlated with evaluating thinking ($r = .16, p < .01$), voicing opinions ($r = .33, p < .01$), decision-making ($r = .19, p < .01$), self assessing ($r = .18, p < .01$) but not with comparative

validation ($r = -.01, p > .05$). Behavioral autonomy was positively correlated with most aspects of cognitive autonomy but, again, negatively associated with comparative validation ($r = -.12, p < .05$). The correlations between emotional autonomy, behavioral autonomy, and comparative validation in the rural sample were not the same pattern as in the urban sample.

Achieved male youth in rural areas had significant higher scores in evaluative thinking ($r_{pbis} = .16, p < .01$), decision-making ($r_{pbis} = .18, p < .01$), self-assessing ($r_{pbis} = .20, p < .01$), and behavioral autonomy ($r_{pbis} = .17, p < .01$) than rural boys of other identity statuses. Foreclosed rural males had significantly lower scores in decision-making ($r_{pbis} = -.21, p < .01$). Diffused male adolescents in rural areas were more likely to have lower scores in evaluative thinking ($r_{pbis} = -.19, p < .01$), voicing opinions ($r_{pbis} = -.24, p < .01$), decision-making ($r_{pbis} = -.13, p < .01$), self-assessing ($r_{pbis} = -.23, p < .01$), behavioral autonomy ($r_{pbis} = -.14, p < .01$) but had significantly higher scores in terms of not relying as heavily on comparative validation ($r_{pbis} = .20, p < .01$).

Rural female adolescents. Similar to the outcomes of rural male adolescents, most domains of cognitive autonomy were positively correlated with each other whereas each pair of correlation coefficients between comparative validation and other aspects of cognitive autonomy was significantly negatively correlated in the sample of rural female teenagers. Furthermore, rural teen girls had emotional autonomy scores that positively correlated with voicing opinions ($r = .42, p < .01$), decision-making ($r = .13, p < .01$), self-assessing ($r = .22, p < .01$), and comparative validation ($r = .19, p < .01$), and behavioral autonomy ($r = .27, p < .01$). Behavioral autonomy was positively related to

other aspects of autonomy but negatively correlated to comparative validation ($r = -.16, p < .01$).

Compared to non-achieved rural female adolescents, achieved girls from the same area had significantly higher scores on evaluating thinking ($r_{pbis} = .15, p < .01$), voicing opinions ($r_{pbis} = .16, p < .01$), decision-making ($r_{pbis} = .24, p < .01$), self-assessing ($r_{pbis} = .18, p < .01$), emotional autonomy ($r_{pbis} = .16, p < .01$), and behavioral autonomy ($r_{pbis} = .14, p < .01$) but not comparative validation ($r_{pbis} = .07, p > .05$). Rural female adolescents who were foreclosed had significantly lower scores in evaluative thinking ($r_{pbis} = -.11, p < .05$), decision-making ($r_{pbis} = -.17, p < .01$), and behavioral autonomy ($r_{pbis} = -.14, p < .01$). Diffused female adolescents in the rural areas had significantly lower scores in evaluative thinking ($r_{pbis} = -.18, p < .01$), decision-making ($r_{pbis} = -.16, p < .01$), self-assessing ($r_{pbis} = -.09, p < .05$), and emotional autonomy ($r_{pbis} = -.10, p < .05$) than rural girls who were not in diffused status.

The Correlations among Structural Factors and Psychosocial Development

The associations among structural factors (family income, family structure, and school type), autonomy achievement, and identity status are presented in Tables 7 and 8 (see Appendix A) for urban and rural Taiwanese adolescents respectively. Family income was significantly associated with adolescent psychosocial outcomes regardless of gender and regional differences. School type was significantly associated with urban female, rural male, and rural female teenagers' psychosocial development but not for urban male youth.

School type. As seen in Table 7, the type of school was significantly related to urban teen girls' identifying a foreclosed status but not for urban boys. This significant coefficient indicated that girls who attended vocational schools were more likely to be foreclosed than girls who went to senior high school in the urban area ($\phi = .13, p < .05$). From Table 8, the correlation coefficients for rural male adolescents in the areas indicated that school type and family income significantly correlated with psychosocial outcomes. Rural male adolescents attending vocational high school tended to associate with lower scores in evaluate thinking ($r_{pbis} = -.15, p < .05$) and were less likely to be in moratorium ($\phi = -.23, p < .01$). Rural girls who enrolled in vocational schools, had significantly lower scores in evaluative thinking ($r_{pbis} = -.22, p < .05$) and decision-making ($r_{pbis} = -.15, p < .05$). They were also less likely to be in moratorium ($\phi = -.16, p < .01$) but more likely to be foreclosed ($\phi = .15, p < .01$) or diffused ($\phi = .15, p < .01$).

Family structure. Family structure was not significantly related to any aspects of psychosocial development for urban males, urban females, and rural male adolescents in this sample.

Family income. For both male and female urban adolescents, family income was significantly correlated to teens' reported psychosocial outcomes. Compare to urban non-foreclosed male adolescents, urban foreclosed boys were more likely to come from families that had more monthly income ($r_{pbis} = .16, p < .05$). Urban teenage girls from wealthier families were more likely to have higher scores of decision-making ($r = .14, p < .05$) and behavioral autonomy ($r = .18, p < .01$).

In the rural sample, the wealthier the families of male adolescents, the higher these adolescents scored themselves in decision-making ($r = .14, p < .05$) and self-

assessing ($r = .13, p < .05$); however, wealthier rural male teenagers had lower scores in comparative validation ($r = -.14, p < .05$). For rural adolescent girls, family income was significantly positive correlated with scores of evaluative thinking ($r = .13, p < .05$), voicing opinions ($r = .20, p < .01$), decision-making ($r = .16, p < .01$), self-assessing ($r = .11, p < .05$), emotional autonomy ($r = .17, p < .01$), and behavioral autonomy ($r = .11, p < .05$). In addition, family income was positively associated with identity achievement ($r_{pbis} = .17, p < .01$) but negatively related to foreclosure ($r_{pbis} = -.10, p < .05$) for rural female adolescents.

The Correlations among Agential Factors and Psychosocial Development

The relationships between agential factors (collectivism, attachment, and resiliency), autonomy achievement, and identity status are presented in Tables 9 and 10 (see Appendix A) for urban and rural youth respectively. The degree of urban youth's collectivism, attachment toward parents and peer, and resiliency was significantly correlated with their psychosocial outcomes, albeit, in different aspects.

Collectivism. For urban male adolescents, scores in collectivism were positively correlated with their scores in voicing opinions ($r = .16, p < .05$) but negatively related the comparative validation ($r = -.26, p < .01$); the higher the score that the urban male adolescents had in collectivism, the less likely they were to be in a diffused identity status ($r_{pbis} = -.22, p < .01$). For urban female youth, the correlation coefficients showed that collectivism was significantly positively related to voicing opinions ($r = .22, p < .01$), emotional autonomy ($r = .13, p < .05$), and behavioral autonomy ($r = .20, p < .01$).

The higher scores in collectivism of the rural male adolescents, the higher probability that these adolescents would be in foreclosed identity status whereas higher collectivism scores also related to lower scores in comparative validation ($r = -.15, p < .01$) and a lower chance of being diffused ($r_{pbis} = -.21, p < .05$). Female adolescents from the rural areas who had higher score in collectivism tended to have higher scores in voicing opinion ($r = .15, p < .01$), self-assessing ($r = .19, p < .01$), and behavioral autonomy ($r = .10, p < .05$), but lower scores in comparative validation ($r = -.17, p < .01$). Furthermore, the more collectivistic the rural teen girls were, the more likely they would be in foreclosure ($r_{pbis} = .10, p < .05$). In sum, collectivism was associated with higher scores in voicing opinion, lower scores in comparative validation, and higher probabilities to be in a foreclosure rather than diffusion status across subsamples.

Parent attachment. For urban male adolescents, scores of attachment toward parents were positively correlated with evaluative thinking ($r = .25, p < .01$), voicing opinions ($r = .26, p < .01$), decision-making ($r = .18, p < .05$), self assessing ($r = .32, p < .01$), emotional autonomy ($r = .22, p < .01$), behavioral autonomy ($r = .15, p < .05$), but negatively related to diffused identity status ($r_{pbis} = -.20, p < .01$). Similar findings were found in the urban female sample, attachments toward parents were positively associated with evaluative thinking ($r = .19, p < .01$), decision-making ($r = .17, p < .01$), self-assessing ($r = .17, p < .01$), and behavioral autonomy ($r = .18, p < .01$) but negatively related to comparative validation ($r = -.31, p < .01$).

Attachments toward parents were positively related to rural male youth's cognitive autonomy except for comparative validation ($r = -.23, p < .05$); also, parent attachment was related to better emotional autonomy ($r = .17, p < .05$) and lower chance

of diffusion ($r_{pbis} = -.13, p < .05$) in rural male sample. Attachments toward parents were significantly related to the cognitive, emotional, behavioral autonomy again with the negative direction for comparative validation. Additionally, parent attachment contributed to a lower chance of self-ascribing a diffused identity status ($r_{pbis} = -.11, p < .05$). With the exception of urban females, all respondent groups indicated that parent attachment was positively related to autonomy and identity development excluding comparative validation.

Peer attachment. For urban males, peer attachment was positively related to four domains of cognitive autonomy (Pearson r ranged from .20 to .32) and behavioral autonomy ($r = .27, p < .01$). In addition, peer attachment was also negatively related to diffused identity status ($r_{pbis} = -.24, p < .01$) and comparative validation ($r = -.26, p < .01$) in urban male sample. For female urban adolescents, attachment toward peers was positively correlated with each domain of cognitive autonomy (except for comparative validation; Pearson r ranged from .14 to .25), emotional autonomy ($r = .19, p < .01$), behavioral autonomy ($r = .28, p < .01$), achieved status ($r_{pbis} = .15, p < .05$), and moratorium status ($r_{pbis} = .20, p < .01$). It negatively correlated with foreclosed ($r_{pbis} = -.18, p < .01$) and diffused identity statuses ($r_{pbis} = -.17, p < .01$).

Peer attachment of the rural males was associated with high cognitive autonomy except for comparative validation ($r = -.23, p < .05$; $r = -.26, p < .05$), better emotional ($r = .13, p < .05$) and behavioral autonomy ($r = .25, p < .01$) and also greater likelihood to reach an achieved identity status ($r_{pbis} = .16, p < .05$). Peer attachment toward peers was significantly related to the cognitive, emotional, and behavioral autonomy in the rural female sample; once again, the direction for comparative validation was negative whereas

others were positive. For rural teen girls, peer attachment was associated with higher chance of being achieved ($r_{pbis} = .19, p < .01$). Similar outcomes were found for rural adolescent boys; the higher the scores the rural adolescent girls had, the better scores in evaluative thinking ($r = .36, p < .01$), voicing opinions ($r = .40, p < .01$), decision-making ($r = .44, p < .01$), self-assessing ($r = .38, p < .01$), emotional autonomy ($r = .37, p < .01$), and behavioral autonomy ($r = .52, p < .05$). In sum, similar to parent attachment, peer attachment correlated to higher autonomy scores except for comparative validation. In addition, peer attachment was positive associated with achieved identity status for most youth except for the urban male adolescents.

Resiliency. Resiliency scores for urban male adolescents were positively correlated with most aspects of their cognitive autonomy except comparative validation (Pearson r ranged from .44 to .52), emotional autonomy ($r = .41, p < .01$), behavioral autonomy ($r = .54, p < .01$), and achieved identity status ($r_{pbis} = .40, p < .01$). Resiliency scores for urban females were negatively associated with foreclosed status ($r_{pbis} = -.31, p < .01$) and diffused status ($r_{pbis} = -.15, p < .05$). Resiliency scores were significantly correlated with each aspect of psychosocial outcomes except for comparative validation ($r = -.03, p > .05$) and moratorium status ($r_{pbis} = -.10, p > .05$).

In addition to the positive relationship with most aspects of positive psychosocial development (excluding moratorium status), resiliency was negatively associated with undesired development outcome, foreclosure ($r_{pbis} = -.23, p < .01$) and diffusion status ($r_{pbis} = -.18, p < .01$) in the rural males. Similar outcomes for the rural females were found as was observed for rural adolescent boys; the higher the scores the rural adolescent girls had, the better their scores were in evaluative thinking ($r = .36, p < .01$),

voicing opinions ($r = .40, p < .01$), decision-making ($r = .44, p < .01$), self-assessing ($r = .38, p < .01$), emotional autonomy ($r = .37, p < .01$), and behavioral autonomy ($r = .52, p < .05$). In addition, the more resilient, rural adolescents girls felt, they were less likely to be foreclosed ($r_{pbis} = -.18, p < .01$) or diffused ($r_{pbis} = -.20, p < .01$). In general, better resiliency scores were associated with better autonomy scores and desirable identity status across the subsamples.

Cognitive Autonomy Classification

Latent class analysis was conducted in an effort to identify subgroups of cognitive autonomy for these Taiwanese adolescents based on patterns of responses on the five subscales (i.e., evaluative thinking, voicing opinions, decision-making, self-assessing, and comparative validation) of the CASE inventory. This statistical procedure was employed before further inferential analyses because a focus of this study was to examine cognitive autonomy as an integrated developmental status with considerations of heterogeneous individual responses across the five dimensions of cognitive autonomy.

Each cognitive autonomy scale score was converted to a Z score, then dichotomized so that those with $Z \geq .50$ could be classified as “Attained” and those with $Z < .50$ could be classified as “Not Attained.” *Mplus 5.1*, a statistical analysis software package, was used for a series of latent class analysis with maximum likelihood estimation. The analyses went from two classes to k classes until the indicators of model-fit stopped improving or decreased. This procedure entailed specifications of the latent class models that ranged from two to five classes (see Table 11). Model selection was based on the evaluations of model-fit in terms of likelihood-ratio chi-square statistic (G^2),

Akaike information criterion (AIC), Bayesian information criterion (BIC), and Entropy.

As a general rule, a nonsignificant value of G^2 which is close or lower to the degree of freedom and lower values of AIC and BIC values indicates a good model fit (Lanza, Flaherty, & Collins, 2003). A high Entropy value shows better precision of classification (Vermunt & Magidson, 2002), and a significant Lo-Mendell-Rubin adjusted LRT test (LMR) provides information to help choose the right number of classes in terms of a k class than $k-1$ class model (Magidson & Vermunt, 2002; Nylund, Asparouhov, & Muthén, 2007).

As a result, the four class model was the final accepted model in this study because the non-significant likelihood ratio chi-square ($G^2 = 11.72, df = 8, p > .05$), which indicated four class model fits these data, the lowest AIC (6,536.91) and BIC (6,552.94) information indices, and the significant LMR (18.23, $p < .01$) which indicated that a four class classification would be better than a three class classification. Though it is suggested that a higher value of Entropy is better, the two class model, in this case, was rejected because of the poor likelihood ratio and the higher AIC and BIC value compared to the four class model.

Table 11

Summary of Iterative Latent Class Analysis Models for Cognitive Autonomy for Taiwanese Adolescents from Urban and Rural Areas

Model	df	$G^2 (p)$	AIC	BIC	LMR (p)	Entropy
2 Class	20	62.307 (.000)	6559.197	6614.752	605.739 (.000)	.722
3 Class	14	33.082 (.007)	6543.567	6629.331	26.992 (.128)	.574
4 Class	8	11.723 (.164)	6536.905	6552.938	18.231 (.002)	.648
5 Class	2	5.907 (.052)	6543.089	6689.391	5.682 (.580)	.647

After observing the direction and trend of each class solution across the cognitive autonomy scales (see Figure 1 and 2), the four-class solution was arbitrarily labeled as: (1) eastern ideal; (2) avoidant tendency; (3) dispersed, and (4) intermediary. The average latent class probabilities for the most likely latent class membership were .85, .75, .58, and .80, respectively.

The first class, labeled eastern ideal, included around 18% of the sample and showed high evaluative thinking ($p = .86$), high decision-making ($p = 1.00$), high self assessing ($p = .72$), and high opinion voicing ($p = .62$) whereas this class showed low probability in high comparative validation ($p = .25$). The second class, identified as avoidant tendency, comprised around 44% of the sample and showed greater chances in low evaluative thinking ($p = 1.00$), low voicing opinions ($p = .88$), low decision-making ($p = 1.00$), but high comparative validations ($p = .52$). The third class, labeled dispersed, represented about 5% of the sample. This class showed higher probabilities in low evaluative thinking ($p = .82$), low decision-making ($p = .51$), low comparative validation ($p = 1.00$), high voicing opinion ($p = .84$), and high self-assessing ($p = 1.00$). The fourth class, given the label of intermediary, accounted for around 34% of the sample. This class demonstrated higher probabilities in low evaluative thinking ($p = .61$), low voicing opinion ($p = .77$), low decision-making ($p = .61$), low self-assessing ($p = .84$), and low comparative validation ($p = .73$). Figure 1 displays the conditional probabilities of being highly autonomous where as Figure 2 shows the conditional probabilities of being lowly autonomous (as opposite of being highly autonomous) across five aspects of cognitive autonomy for each class.

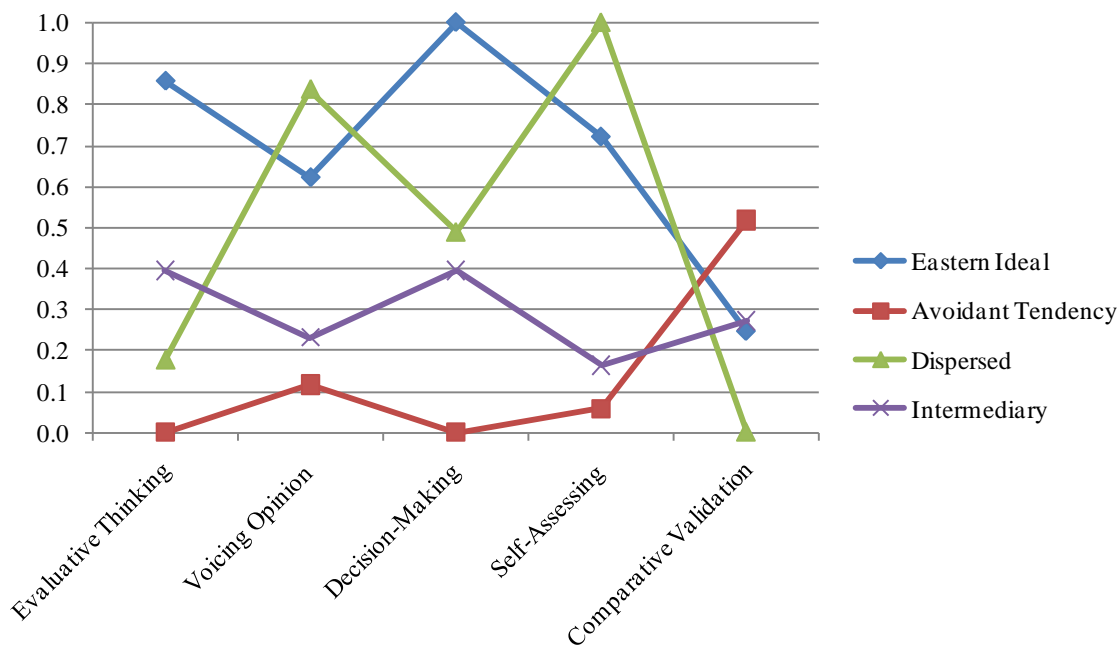


Figure 1. Conditional probabilities of high autonomous status across five aspects of cognitive autonomy for four classes for Taiwanese adolescents from urban and rural areas.

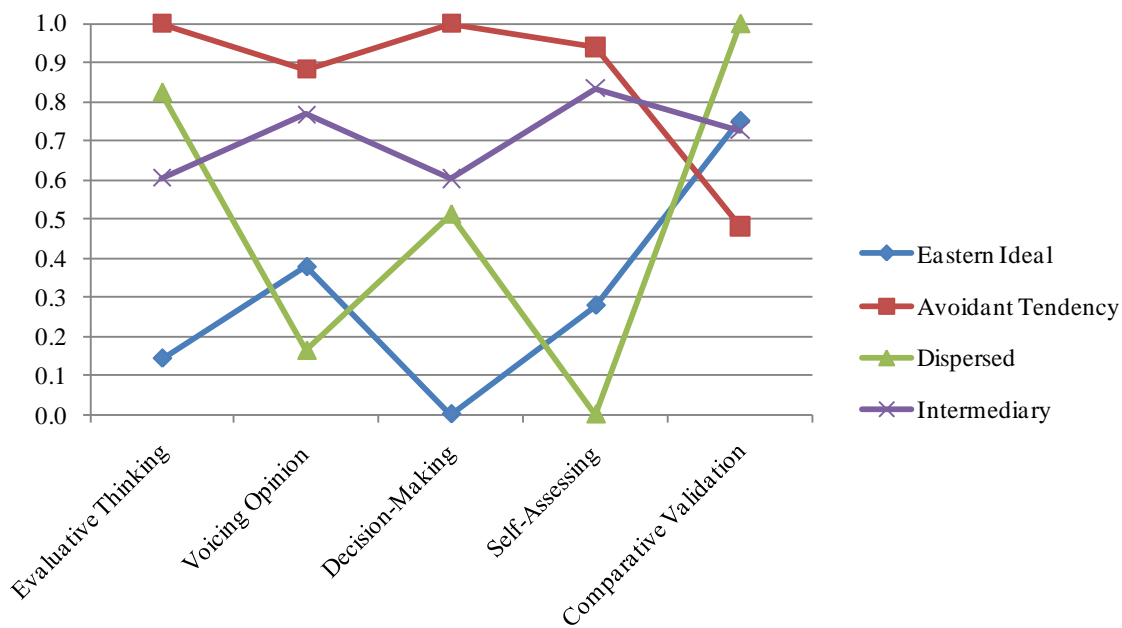


Figure 2. Conditional probabilities of low autonomous status across five aspects of cognitive autonomy for four classes for Taiwanese adolescents from urban and rural areas.

Gender Differences

Tables 12 through 14 (see Appendix C) display the results of evaluating possible gender differences within autonomy and identity development. There were significant gender differences in cognitive autonomy status ($\chi^2 = 9.14, p < .05$), emotional autonomy ($t_{(1,1145)} = 2.72, p < .01$), and behavioral autonomy ($t_{(1,1139)} = 2.63, p < .01$). However, there was not significant gender difference for identity status ($\chi^2 = 4.23, p > .05$). Accordingly, gender effects were controlled for in subsequent statistical analyses by adding gender effect in each testing analyses.

Urban and Rural Differences

In addition to the significant differences in terms of family income and family structure between the urban and rural sample, it is suspected that gender differences, in terms of psychosocial development, would be exaggerated by regional differences. Therefore, in addition to regional differences and gender differences, interaction effects for region and gender were also examined. Tables 15 through 18 (see Appendix C) present the results of region, gender, and region* gender effects in cognitive autonomy status, emotional autonomy, behavioral autonomy, and identity status. Table 15 shows that the odds for females to be in the eastern ideal rather than avoidant tendency would be about .25 times of the odds for male adolescents. There were no statistically significant regional differences in cognitive autonomy; however, it appears that there was a minor interaction effect $\text{Exp}(\beta) = 1.97, p < .10$.

Tables 16 and 17 show that there were neither statistically significant regional influences nor statistically significant interaction effects on adolescent emotional and behavioral autonomy but the gender effect was significant at the .01 level. Table 18 indicates that the odds for rural adolescents to reach achieved status rather than foreclosed status were .19 times the odds for youth living in urban areas ($p < .05$). The odds for female adolescents to be achieved, in moratorium, or diffused rather than foreclosed were .20, 2.69, and .18 times, respectively, of the odds for male youth ($p < .05$). In addition, there were significant interaction effects for achieved and moratorium statuses rather than foreclosed status $\text{Exp}(\beta) = 2.88, p < .05$.

Follow-up analysis for the interaction effect was conducted by splitting the entire sample according to gender to evaluate regional influences. The results, presented in Table 19 (see Appendix C), showed that the odds for rural male adolescents to reach achieved status rather than remain foreclosed are .54 times the odds for those boys living in urban areas. In addition, the odds of rural female adolescents to be in moratorium rather than foreclosure are 1.69 times the odds for girls in the urban area ($p < .05$). Regional differences were of chief interest in this study. Therefore, to account for gender and regional interaction effects, further analyses were conducted by splitting the entire sample by region while controlling gender effects for further model specifications.

Situational Factors and Psychosocial Outcomes

Tables 20 through 23 (see Appendix C) show the results of situational factors on adolescent autonomy while controlling for gender differences. Because both cognitive autonomy status and identity status classifications were based on Z scores and standard

deviations, emotional and behavioral autonomy scores were also converted to standardized scores. Converting all scores to *Z* scores increased consistency and clarity to see how adolescents compared to their peers in each area of autonomy.

Overall, Table 20 shows that family income significantly predicted cognitive autonomy statuses for urban youth while both family income and school type were significant in the rural sample. For urban adolescents, each one-unit increase in family income multiplied the odds of eastern ideal versus avoidant tendency by 1.32 ($p < .05$), with a 95% confidence interval ranging from 1.06 to 1.65. As for rural youth, each one-unit increase in family income also multiplied the odds of eastern ideal versus avoidant tendency by 1.49 ($p < .05$) with a 95% confidence interval ranging from 1.21 to 1.83. Also for rural students in vocational high schools, the odds for being in eastern ideal rather than avoidant tendency were about .57 times of the odds than for those senior high students ($p < .05$), 95% CIs [.36, .92] and [.55, 2.23] for rural and urban samples respectively. The overlapped 95% confidence intervals above showed no statistical significance between urban and rural sample in terms of effect of family income and school type.

The model fit for cognitive autonomy showed the delta chi-square with 12 degrees of freedom (a test of full model with all four predictors against a null-intercept only model) was 24.49 ($p < .05$) for the urban sample and 31.96 ($p < .01$) for the rural sample. This indicated that the situational factors, as a set, significantly predicted the cognitive autonomous statuses. The likelihood ratio of R^2 was about .09 for both urban and rural participants; the information of likelihood ratio of R^2 implies the total deviance

between null and hypothesized model were accounted for by the structural predictors (factors) in about 9% of both the urban and the rural sample.

As seen in Table 21, family income was a significant factor in predicting standardized emotional autonomy scores for both urban ($p < .10$) and rural ($p < .05$) adolescents. In general, this finding indicates that wealthier adolescents in this sample, especially in rural areas, have higher emotional autonomy scores. The 95% confidence interval was [-.01, .14] for urban youth and [.02 to .18] for rural participants, therefore, no statistical difference between urban and rural sample, in terms of the effect of family income on emotional autonomy. The overall variance of emotional autonomy explained by structural factors, including gender effect, was about 3% for the urban youth and 2% for rural participants.

Table 22 illustrates that family income positively predicted adolescents' standardized behavioral autonomy scores in both regional samples, especially for rural subjects. However, the overlapped 95% confidence intervals of urban [-.01, .14] and rural [.01, .17] samples indicates no statistical difference between urban and rural youth, in terms of the pattern of contribution of family income on emotional autonomy. In addition, Table 22 also shows that rural adolescents from non-traditional families had higher behavioral autonomy scores than those from a traditional, two biological parents, family structure. No statistical significance between urban [.05, .44] and rural [-.17, .43] subjects for the association between family structure and behavioral autonomy was found.

Table 23 shows the effect of family structure, family income, and school type on identity status for urban and rural adolescents. For urban youth, the odds for vocational students to be achieved or in moratorium rather than foreclosure were .52 times ($p < .10$)

and .48 times ($p < .05$) the odds for urban senior high school students. For rural adolescents, the family income had Exp (β) equals 1.49 ($p < .01$), which implies that for each one-unit of increase in family income there was an increase of about 49% of participants reporting achieved rather than foreclosed identity status when other factors were held constant. Moreover, the odds for vocational students in rural areas to be achieved or in moratorium rather than foreclosed were .52 ($p < .05$) and .27 ($p < .001$) times the odds for rural senior high students. Further comparisons of effects of family income and school type between urban and rural sample were conducted by evaluating 95% CIs of Exp (β); no statistical significance between variables was found, indicating the effects of family income and school type contribute similarly to adolescent identity development regardless of regional differences.

The model fit for identity status showed the delta chi-square with 12 degrees of freedom, by subtracting -2LL index of the null model and hypothesized model, was 18.89 ($p = .09$) for the urban sample and 55.30 ($p < .001$) for the rural sample. This indicates that the situational factors, as a whole, significantly predicted the identity status for the rural but not for urban sample. The likelihood ratio of R^2 was .07 for urban participants and .18 for rural subjects; the information of likelihood ration of R^2 implies the total deviance between null and hypothesized model were accounted for by the structural predictors (factors) in 7% of the urban sample and 18% of the rural sample.

Agential Factors and Psychosocial Outcomes

Tables 24 through 27 (see Appendix C) present the summary results for the effects of agential factors on cognitive autonomy, emotional autonomy, behavioral

autonomy, and identity status for both urban and rural adolescents while controlling for gender differences. All agential factors were continuous variables with differential scale ranges and, therefore, were converted to *Z* scores in order to have a standard unit to better capture the magnitude of each predictor. Emotional and behavioral autonomy scores were previously converted to *Z* scores, therefore, standardized multiple regression analyses were conducted using agential factors to predict emotional and behavioral autonomy.

Table 24 shows that parent attachment and resiliency were significant agential factors toward predicting cognitive autonomy status for both urban and rural adolescents. For urban adolescents, while controlling other variable influences, each one-*SD* unit increase in parent attachment was associated with an expected 44% increase in the odds of being eastern ideal rather than avoidant tendency ($p < .10$). Furthermore, each one-*SD* unit increase in resiliency was associated with approximately 430% increase in the odds of being eastern ideal versus avoidant tendency ($p < .05$), 99% increase in the odds of being intermediary versus avoidant tendency ($p < .05$), and 224% increase in the odds of being dispersed versus avoidant tendency ($p < .05$). Similar directions were found for rural youth. With all other variables held constant, each one-*SD* unit increase in parent attachment was associated with an expected 30% increase in the odds of being eastern ideal rather than avoidant tendency ($p < .10$) and about 21% increase ($p < .10$) in the odds of being intermediary status rather than avoidant tendency. Resiliency was also a strong predictor of cognitive autonomy status for rural adolescents, each one-*SD* unit increase in resiliency was significantly associated with increases in the odds ratio for eastern ideal,

intermediary, and dispersed rather than avoidant tendency, Exp (β) were 3.13, 1.74, and 1.53, respectively.

The model fit for cognitive autonomy showed the delta Chi-square with 15 degrees of freedom (a test of full model with all four predictors against a null-intercept only model) was 119.833 ($p < .001$) for the urban sample and 146.583 ($p < .001$) for the rural sample, indicating that the agential factors, as a set, significantly predicted the cognitive autonomous statuses for both urban and rural adolescents. The likelihood ratio of R^2 , which implies the total deviance between the null and the hypothesized model that is explained by the structural predictors (factors), was about .13 for the urban participants and .10 for the rural subjects. Further comparisons of agential effects on cognitive autonomy between urban and rural samples by evaluating the corresponding 95% CIs of Exp (β) indicated no statistical differences between each pair of agential factors.

Tables 25 and 26 show that resiliency was a strong factor in predicting standardized emotional and behavior autonomy scores for adolescents across regions. For emotional autonomy, each one-*SD* unit of increase in resiliency resulted in .39 and .29 standard deviation units increase in emotional autonomy for urban and rural adolescents respectively. Results were similar for behavioral autonomy. An increase in resiliency was associated with an increase in behavioral autonomy for adolescents in both urban and rural areas ($b = .56$ and $.51$, respectively). The overall R^2 for emotional autonomy was .13 for the urban and .12 for the rural sample; for behavioral autonomy, it was .29 and .30 for urban and rural adolescents, respectively. In addition, no statistical differences existed between the two regional samples.

Table 27 shows that, in general, collectivism, parent attachment, peer attachment, and resiliency were significantly associated with adolescent identity development for both regional groups. For urban adolescents, after controlling for the effects of other agential variables, each one-*SD* increase in parent attachment was associated with an expected decrease in the odds of being achieved, in moratorium, or diffused rather than being foreclosed $\text{Exp}(\beta)$ were .52, .66, and .56, respectively; $p < .05$. Conversely, for each one-*SD* increase of resiliency in urban adolescents there was a statistically significantly increase in their odds ratio of being achieved $\text{Exp}(\beta) = 7.35$, $p < .001$ or in moratorium $\text{Exp}(\beta) = 2.56$, $p < .01$ rather than being foreclosed. Nevertheless, each one-*SD* unit of increase in resiliency was not statistically significantly associated with an expected change in the odds of being diffused rather than foreclosed $\text{Exp}(\beta)$ was 1.56, $p = .172$. Moreover, each one-*SD* unit increase in collectivism for urban youth was associated with an expected decrease in the odds of being diffused rather than foreclosed $\text{Exp}(\beta) = .59$, $p < .05$. Likewise, each one-*SD* unit increase in peer attachment for urban youth was also related to an expected increase in the odds ratio of being in moratorium rather than foreclosed $\text{Exp}(\beta) = .68$, $p < .05$.

For rural youth, each one-*SD* unit increase in collectivism and parent attachment was associated with an expected decrease in the odds of being achieved, in moratorium, and diffused rather than foreclosed $\text{Exp}(\beta)$ ranged from .54 to .66; $p < .05$. On the contrary, each one-*SD* unit increase of peer attachment was associated with an expected increase in the odds of being achieved relative to the odds of being foreclosed $\text{Exp}(\beta) = 1.35$, $p < .10$. Furthermore, in the sample of rural adolescents, each one-*SD* unit increase in resiliency was also connected with an expected increase in the odds of being

achieved or in moratorium relative to the odds of being foreclosed Exp (β) was 3.72 and 2.23, respectively; $p < .001$. However, each one-*SD* unit increase in resiliency was not significantly associated with an expected decrease in the odds of being diffused rather than foreclosed Exp (β) was .90, $p = .615$. The model fit for identity status showed the delta chi-square with 15 degrees of freedom, by subtracting -2LL index of the null model and predictor model, was 120.920 ($p < .001$) for the urban sample and 139.232 ($p < .001$) for the rural sample. This indicates that the agential factors, as a set, significantly predicted identity statuses for all participant groups. The likelihood ratio of R^2 was .16 for urban participants and .12 for rural subjects; the information of likelihood ratio of R^2 implies that the total deviance between the null and the hypothesized model was explained by the structural predictors (factors) in 16% of the urban sample and 12% of the rural sample. Further comparisons of agential effects on identity development between urban and rural adolescents were conducted and no statistical differences between each pair of agential factors were found.

Structural Factors, Agential Factors, and Psychosocial Outcomes

After evaluating the unique effects of each block of factors (structural and agential) on urban and rural adolescent psychosocial development, a model with combined factors to predict autonomy and identity status was crafted to assess the effects of each predictor. By partitioning out the effect of each factor, the magnitude of structural and agential factors was explored as a whole. The results are presented in Tables 28 through Table 31(see Appendix C).

Based on Tables 20, 24, and 28, after adding structural and agential factors to the gender factor, the effect from family income $\text{Exp}(\beta) = 1.12$ for eastern ideal versus avoidant tendency, $\text{Exp}(\beta) = 1.07$ for intermediary versus avoidant tendency, $p > .05$ and parent attachment $\text{Exp}(\beta) = 1.67$ for dispersed versus avoidant tendency, $p = .102$ became non-significant for urban youth. Conversely, resiliency, one of the agential factors, was still significant ($p < .001$) even after partitioning out the effects of the structural variables. For rural youth, the effect of family income was similar $\text{Exp}(\beta) 1.49$ before and 1.37 after for eastern ideal versus avoidant tendency. In addition, the effect of parent attachment remained $\text{Exp}(\beta) = 1.26$ for eastern ideal versus avoidant tendency, $\text{Exp}(\beta) = 1.21$ for intermediary versus avoidant tendency, $p < .10$. Resiliency still significantly predicted the odds of eastern ideal versus avoidant tendency $\text{Exp}(\beta) = 3.06$, $p < .001$ or the odds of intermediary versus avoidant tendency $\text{Exp}(\beta) = 1.71$, $p < .001$, but no longer predicted dispersed versus avoidant tendency $\text{Exp}(\beta) = 1.45$, $p = .115$ in the rural adolescent sample.

Based on Tables 25 and 29, after combining gender, structural, and agential factors together to predict emotional autonomy, family income (a situational factor) became statistically non-significant for both urban and rural groups ($b = .03$ and $.06$, respectively). However, resiliency, an agential factor, still positively predicted standardized emotional autonomy scores for both urban and rural youth ($b = .38$ and $.28$, respectively; $p < .001$). The effect of family structure was still significant for the rural sample ($b = .21$, $p < .05$). Similar results (i.e., family income became non-significant while resiliency stayed significant) were found for predicting standardized behavioral

autonomy scores for both urban and rural youth after controlling for gender differences (see Tables 26 and 30).

As for predicting identity status, after combining situational and agential factors, most factors maintained the effect across regional groups except for family income and school type. Family income became significant in predicting the odds of being achieved rather than foreclosed $\text{Exp}(\beta) = .71, p < .05$ for the urban youth and statistically non-significant for the rural group. School type became statistically non-significant in predicting achieved rather than foreclosed status for the rural youth $\text{Exp}(\beta) = .66, p = .203$ (see Tables 23, 27, and 31).

The results presented in this section showed that structural and agential factors were overlapping to a certain degree. There were a few changes of the significance level for both situational and agential factors in predicting adolescent psychosocial outcomes. Among all the factors in this study, resiliency had the most distinctive effect toward adolescent autonomy development and identity formation across regional groups.

CHAPTER V

DISCUSSION

Psychometric Characteristics of Scales

With the exception of the social obligation scale from the individualism-collectivism construct adopted in Mainland China, all measures used in this study required translation into Mandarin Chinese and were administered for the first time to a Taiwanese population. After a field test of the instruments for better understanding, all scales, including the Mandarin version of the social obligation scale, were appropriately modified into a common usage for Taiwanese youth. Following these procedures, reliability and validity were again checked. A brief discussion of the effectiveness of these scales in measuring the studied variables with the Taiwanese youth is presented below. That discussion is followed by a treatment of the implications of findings for each research question and an elaboration on the limitations and directions for future research.

Reliability

Checking for internal consistency, in terms of Cronbach's alpha coefficient, is a common procedure to evaluate the reliability of test items (Gall, Gall, & Borg, 2007). It appears that the reliability coefficients for scores from this sample imply that, even though most of these scales were designed for western populations, they clearly confirmed a satisfactory pattern of test reliability among the scores from this Taiwanese sample.

Validity

There are several ways to demonstrate test validity, such as content-related evidence and evidence from the relationship to the other variables. All the measures of psychosocial development used in this study were designed based on a theoretical direction, mostly from an Eriksonian perspective. Cultural diversity researchers are generally suspicious of applying “western” constructs to “eastern” populations when corresponding ideas are not the same between cultures. For example, attachment to a primary caregiver is seen differently in Taiwan than in the United States. In Asian cultures, a baby’s inability to explore new environments is seen as a normal part of development, not as an insecure attachment as is seen in the United States (see Chin, Mio, & Iwamasa, 2006). In the present case of psychosocial development, however, there was no available option to evaluate autonomy and identity from a Taiwanese perspective. Therefore, the use of these measures is justified. Additionally, these psychosocial developmental constructs, although devised for western populations, are familiar to many Taiwanese and have been recognized by researchers and practitioners in Taiwan for some time. Therefore, it is with confidence that the concern over cultural bias in content related validity be temporarily set aside to see the degree to which other evidence will support the test validity of the scales in this study.

Validity, as evidenced from the relationship to other variables was strong. Most indicators of the three aspects of autonomy (cognitive, emotional, and behavioral autonomy) correlated positively with each other across gender and regional groups. In addition, better scores in autonomy were positively related to identity achievement and

negatively related to undesirable identity statuses of foreclosure and diffusion. This evidence supports convergent and construct validity for most measures used in this study.

One caveat deserves attention. The cognitive autonomy subscales of comparative validation negatively correlated with most other subscales of cognitive autonomy across subsamples. Comparative validation was positively related to emotional autonomy development in the entire urban sample and rural females; it also was negatively associated with behavioral autonomy in the rural sample. It appears that there was substantial within-group variation among these Taiwanese youth. The origin of this variation most likely resides in the interpretations and expectations toward the construct comparative validation across region and gender. Accordingly, higher scores in comparative validation imply that better cognitive autonomy was not convergent among subgroups of Taiwanese youth. Therefore, cognitive autonomy patterns were applied to describe the subgroups rather than arbitrarily referencing adolescents as autonomous or non-autonomous based on the sum of the five raw scores of cognitive autonomy.

Overall, the reliability and validity of most of the measures in this study were acceptable, even though there were some variations in responses comparing to the psychometric characteristics of scores from western populations. These variations may stem from differential cultural expectations that may be a result of westernization, regional residency, gender socialization, or an increasingly divergent and liberal modern Taiwanese society. As mentioned early in this manuscript, the focus of this study was to evaluate the applicability of a western model of adolescent development in Taiwan. Therefore, instruments designed in western societies, as part of a western model, are

expected to have some variations in reliability and validity and complementary analyses were applied in order to yield interpretations that are more meaningful.

Cognitive Autonomy Status and Cultural Implications

To examine cognitive autonomy as an integrated developmental status with considerations of heterogeneous individual responses across the five dimensions of cognitive autonomy, latent class analysis (LCA) was applied to describe the subgroups of Taiwanese youth. The application of LCA yielded four classes, subjectively labeled as “eastern ideal,” “avoidant tendency,” “dispersed,” and “intermediary.”

Eastern Ideal

In this class, youth scored high in evaluative thinking, voicing opinions, decision-making, and self-assessing, while scoring lower in comparative validation. These lower comparative validation scores, with higher scores in the other aspects of cognitive autonomy, seem to coincide with a collectivistic cultural expectation, especially in younger generations, to gain approval for their thoughts and decisions from others (see Lam, 1997). Further, comparative validation might function within an internal collectivistic model, providing member guidelines for self-governance through evaluating thinking, self-assessing, and decision-making. This process, in turn, provides confidence about publicly sharing their thoughts. Therefore, the label eastern ideal reflects a collectivistic cultural expectation of autonomous cognitive status that an eastern society like Taiwan would prefer and recommend.

Avoidant Tendency

Youth in this class responded in an almost reverse pattern from those in the eastern ideal status. They scored low in each domain of cognitive autonomy except for comparative validation. These adolescents not only self-rated lower in the self-examining process like evaluating thinking and self-assessing but also were short in connecting with others as evidenced in lower scores for voicing opinions and comparative validation. Therefore, they employed neither internal nor external control in decision-making.

This trend resembles alienation as arising from a loss of social control and regulation in a traditional collectivistic society. Often this is manifest because of a transition and disposition into individualism without developing clear corresponding norms or morals. This results in a process of alienation and an ensuing sense of lack of controllability in life. Therefore, a majority of Taiwanese youth, with partial maturity and limited life experiences, might feel anomic or even alienation leading to an avoidant coping strategy to maintain cognitive equilibrium when dealing with perceived chaos.

Dispersed

Dispersed adolescents had greater likelihood to score themselves highly in voicing of opinion and self-assessing, marginal probability to self-rate high on decision-making, but a low probability to score themselves favorably in evaluative thinking and comparative validation. This trend in responses seems to portray a type of youth that relies heavily on recognition from external authority to be confident in sharing their opinions and their strengths. These youth are anxious for approval from those in

authority over them. Even though the proportion of this type of adolescent was the smallest among this sample of Taiwanese youth, it is not uncommon for Taiwanese adolescents to be overly concerned about what others think and/or others' perspectives, which is well documented as the "imaginary audience" phenomena in western literature (see Elkind, 1985; Ryan & Kuczowski, 1994). Especially with the combination of the lasting influences of Confucian teachings about the personal responsibilities (Tu, 1985) and the emphasis on harmonious interpersonal relationships (Lee, 1996), it seems reasonable that some Taiwanese adolescents would have strong tendencies to conform to the hierarchical authorities to secure their own place in society.

Intermediary

Teenagers in intermediary classes had consistently lower scores in all the cognitive autonomy domains. However, compared to avoidant tendency youth, they had higher likelihood for better scores across all areas of cognitive autonomy except comparative validation. As found in earlier studies in the United States (Beckert, 2007), these Taiwanese youth demonstrated a consistent pattern of cognitive autonomy similar to western youth. It appears that this group of adolescents is a product of the transition era from traditional collectivistic ideals to more individualistic beliefs/practices parallel to individualistic societies. Although a similar pattern in terms of relations across five domains of cognitive autonomy was found, this group of Taiwanese youth had the lower occurrence in high cognitive autonomy which seems to echo Arnett's (2002) ideas that adolescents from non-western societies are required to put forth more effort to form bicultural values and rules in this global era within a dominate, individualistic climate.

Conclusion

The four subgroups of cognitive autonomy among Taiwanese youth demonstrated the within-group variations in current Taiwanese society that is undergoing rapid social changes, including values and customs related to westernization. It seems that these subgroups reflect the differential reactions of adolescents toward a confusing transition era with the loss of traditional moral bonds and trust. Researchers might want to put more effort into exploring and describing the heterogeneous subpopulation within Taiwanese society considering the use of western modules as a baseline model.

Gender, Regional Residency, and Psychosocial Development

When the gender effect was first evaluated, as a control variable with autonomy and identity development outcomes, significant differences were found in cognitive, emotional, and behavioral autonomy, but not in identity status. On the other hand, the effect of regional residency was significantly related to identity status but not to any aspect of autonomy. In addition, identity status interacted with both gender and regional residency. This result implies that regional effects on Taiwanese adolescent identity development were moderated by gender. The discussion below provides an interpretation for the findings of regional and gender effect for adolescent autonomy and identity development.

Autonomy Development

Gender differences were expected, regardless of cultural differences, because almost every society has differential expectations and socialization processes for each

gender. In general, in patriarch societies like Taiwan, girls tend to be more dependent than boys are because they are more protected and, therefore, their agency is limited in terms of autonomy during the socialization process (see Bumpus, Crouter, & McHale, 2001). It was suspected that urban youth would indicate better autonomy status than rural adolescents because of differential westernization. Urban areas are more westernized and individualistic while rural parts remain more traditionally collectivistic. Collectivistic values might restrain individuals' autonomy, especially emotional and cognitive autonomy, because of the strong requirements of individual sacrifice and confirmatory to group needs (Chiu, 1990).

However, the results of this study showed no statistically significant differences for the effect of regional residency on each aspect of adolescent autonomy development. This might imply that regional differences are broader than just family structure and family income. In addition, not all individuals from the rural sample were more collectivistic than all the urban youth, and vice versa. Therefore, the regional difference in terms of cultural value affiliation was not manifest. In addition, from the overlapping 95% confidence interval of the effect of individualism-collectivism on autonomy development between the urban and rural sample with other predictors held constant, collectivistic orientation did not significantly differ in autonomous outcomes between urban and rural sample either. Therefore, the development of autonomy in adolescence is more likely to be cultural-value invariant rather than a cultural-value difference. This seems to underscore the possible universality of adolescent development of autonomy. Cultures and societies might differ in their socialization, but to a certain degree they all

foster adolescents' autonomy and independence to fulfill societal obligations and responsibilities.

Identity Development

Not only were regional differences in identity development found, but gender differences and interaction effects were also manifest. In general, when an interaction is significant, the focus of interpretation is set in the interaction effect rather than the main effects to perceive the more accurate picture. Therefore, the two themes revealed from the follow-up analysis for interaction effect are discussed below. Rural male adolescents were less likely to be achieved rather than foreclosed compared to urban males. Rural female youth were more likely to be in moratorium than in foreclosure compared to urban females.

Rural families have stronger preference for their sons, especially the oldest, to inherit and take care of family farms or businesses (see Gupta et al., 2003). This bias might explain why rural male adolescents were more inclined to be foreclosed. This explanation fits with previous western research, indicating that the traditional/authoritarian values such as familism and son preference, would more likely lead an adolescent into foreclosure identity status (Marcia, 1980).

There are two possible explanations for the somewhat surprising finding that rural girls were more likely to be in moratorium than foreclosure. First, rural girls (especially from low-income families) are less likely to receive advanced training in academic works (Parish & Willis, 1993) and unlikely to be over-protected by parents because the tranquil lifestyle that is common in rural areas. Therefore, rural girls might have more time and

opportunity to be involved in the exploration process. The second reason might be that there is a greater emphasis on rapid success (e.g., good grades, prestigious high schools, and numerous certifications/awards) in urban areas. It might be overwhelming and stressful to tease out what an urban girl would like to develop into and what the consequences of certain choices would be her identity explorations. Consequently, overstimulation might take adolescents away from moratorium process (see Muuss, 1996).

Conclusion

Taken as a whole, in addition to the gender differences in the psychosocial developmental outcomes, it appears that autonomy development is more likely to be a culture-value invariant than is identity development. Though researchers have indicated that youth in Chinese cultures tend to become autonomous later than youth in western cultures (see Feldman & Rosenthal, 1991), Taiwanese youth are more similar to youth of other high division of labor countries that devote efforts to foster autonomous offspring to undertake future individual and societal responsibilities. In addition, unlike identity formation, autonomy development might be a more internally driven process for adolescents to gradually rely on themselves and be in charge of their own actions. However, as for adolescent identity development, grounded on individual autonomy, researchers might need to further take into consideration cultural expectations (or external sources). For example, cultures differ in demands and prioritization for labor; therefore, collectivistic cultures might influence adolescents' commitments to choose certain societal positions over others to fulfill their collectivistic responsibilities to their embedded society.

Situational Factors, Agential Factors, and Psychosocial Development

Because little is known about how situational and agential factors contribute to Taiwanese adolescent psychosocial development, the research focus of this study was to evaluate the situational and agential factors separately. To explore the individual contribution of situational and agential factors on psychosocial development they were evaluated independently at first, and then as a combined factor model to reveal the overlapped and/or unique contribution of each factor. A summary of the findings and the corresponding interpretations are provided in below discussions.

Situational Factors

School type and family income were the two situations that successfully predicted specific aspects of psychosocial development. School type significantly predicted certain cognitive autonomy and identity statuses. Attending vocational high school in the urban area, related to a more avoidant tendency rather than an intermediary class of cognitive autonomy and more foreclosed rather than achieved statuses or moratorium in identity development for both urban and rural youth. Recently, more senior high schools have been established so access to these schools has increased and fewer adolescents are likely to attend vocational schools unless their families need them to enter the job market as soon as possible. Most adolescents prefer to attend senior high, preparing for the college entrance exam, in hopes of getting into prestigious majors at respected universities. In this context, therefore, vocational high school students might be more likely to foreclose and develop an avoidant tendency because they might feel restricted in their options, inferior in their opinions, futile in their self-evaluations, and limited in decision-making.

Family income positively predicted eastern ideal status over avoidant tendency across samples. It seems as if adolescents in this sample, who come from wealthier families, were more likely to have access to supplementary cultural stimuli, facilitating more cognitive activities, resulting in increased opportunities for their own future in terms of an eastern ideal. In addition, family income in the rural sample was related to better emotional autonomy, behavioral autonomy, and an increased probability to become achieved rather than remain foreclosed. Though the association between family income and adolescent psychosocial outcomes were similar across regional groups, it appears that family income was a stronger predictor for rural adolescent psychosocial development than for urban youth. In rural Taiwan there are generally less intellectually stimulating activities and less information opportunities unless families have increased means (i.e., extra curriculum, private lessons). Accordingly, adolescents from poor families in rural areas may spend more time working at family farms. These activities provide less exposure to varied activities, values, desires, and dreams that depart from their families' traditions. This reduction of experiences may contribute to adolescents being less likely to practice autonomy and less likely to achieve a healthy identity.

Family structure did not significantly predict any domain of psychosocial development among urban youth. On the other hand, rural adolescents from non-traditional families had higher scores in behavioral autonomy. It might be because rural youth from non-traditional families are generally expected to be more like little adults, assisting with family economics like shipping products to market or purchasing goods by themselves while single parents of adolescents or other adult relatives worked elsewhere. However, further comparisons of the effect of situational factors (i.e., family income and

family structure) between two samples, by evaluating the 95% confidence intervals, revealed no statistically significant difference between urban and rural sample. Therefore, the significance of situational effect in the rural sample could mostly likely be the result of a larger sample size and greater statistical power than in the urban sample. Overall, it appears that autonomy development might be less socially oriented, if the minimum level of structural/situational resources is met; a condition more likely to occur in urban families.

Agential Factors

Resiliency was a significant predictor for each aspect of psychosocial development across subsamples in this study with a couple exceptions. It promoted satisfactory cognitive autonomy statuses rather than avoidant tendencies, higher emotional and behavioral autonomy scores, and more desirable identity statuses after holding other agential factors and gender effects constant. It was not surprising that stronger resiliency, in terms of ego strength, would lead to healthier psychosocial outcomes because ego strength reflects an individual's power of internal core and develops by successfully solving psychosocial conflicts originating from relationships with significant others and society at large (see Markstrom, Li, Blackshire, & Wilfong, 2005). However, resiliency was not associated with the decrease in the likelihood of being diffused and staying foreclosed. This might simply be because diffused and foreclosed adolescents in this study were both low in resiliency compared to the other two groups.

Parent attachment was another agential factor that predicted more than one aspect of psychosocial development. Parent attachment seemed to prevent adolescent from being avoidant (or anomic), however, it also facilitated adolescent foreclosure status. Therefore, on the one hand, parent attachment served as a type of social bond, facilitating cognitive autonomy through secure parent-adolescent relationship. On the other hand, however, it may lead to foreclosed identity status because the parent-adolescent relationship might be too close, leading to inseparable identities from parents' expectations.

Peer attachment was an agential factor that facilitated moratorium and achievement rather than foreclosure status among all Taiwanese youth in this study. Peers provide differential perspectives and alternative activities beyond what the family can offer (Parker et al., 2006). In addition, secure peer relationships could bring adolescents more age-appropriate information about different options that promote identity exploration and/or achievement. Nonetheless, it was surprising that peer attachment, after holding other agential factors constant, did not significantly relate either positively or negatively to any aspect of autonomy. It might be that peer attachments do not necessarily lead to peer pressure and a subsequent decrease in adolescent autonomy.

This finding also brings into question the Freudian idea that adolescents rely heavily on peer relationship to take flight from their parents toward independence. The effect of peer attachment on these Taiwanese adolescents did not follow either of the two hypotheses from western societies. One possible reason that the theories did not hold true with this population is that Taiwanese youth average eight hours of school per day and spend their evenings completing homework and preparing for quizzes. Accordingly,

Taiwanese adolescents might not have the same amount of time to hang out with their peers thus minimizing the effect of peer attachment on behavioral and emotional autonomy development.

The effect of collectivism, as a broader and distant social bond, was significant on adolescent identity development but not as persuasive on autonomy achievement. As mentioned previously, this difference could be a result of identity formation considering cultural climate while autonomy achievement emphasizing more self-determination. The preference of collectivism was similar to the impact of parent attachment on identity formation, especially for rural youth. The more collectivistic they self-identified, the more likely they were to be foreclosed. Similar to the findings of Le and Stockdale (2005), collectivism may be good for preventing adolescents from being diffused, and later deviant. However, strong collectivistic affiliations could possibly restrain adolescents' freedom to pursue their own goals since the priorities are ideally given to the group rather than the individual's needs according to collectivistic teachings.

This result does not imply that Taiwan should abandon collectivistic values and unconditionally embrace individualism. The preference of individualism could free up youth to try on different roles and choose what they want to be, yet at the same time the social bond might be weaker for preventing them from risky and deviant behaviors (see Kim & Goto, 2000; Le & Stockdale, 2005). Accordingly, both collectivism and individualism could have their own strengths and weakness. Therefore, to gain strength from each value and to balance between collectivistic and individualistic demands might be ideal in this global era.

Situational and Agential Factors

When combining situational and agential factors to predict adolescent cognitive autonomy status, the effect of situational factors (i.e., family income and school type) became less significant in the urban sample but remained virtually unchanged in the rural sample. On the other hand, the agential factor of parent attachment and resiliency remained similar for both subsamples. Similar patterns were found for emotional and behavioral autonomy. Family income became nonsignificant across the two subsamples while family structure remained significant only in the rural sample. Resiliency was the only factor that significantly predicted outcomes. Because the situational factors were significant in the rural but not urban sample, further comparisons were made of the effects of situational factors between the two samples by evaluating the 95% confidence intervals. No significant difference between urban and rural sample was found. Therefore, the significant effect of situational factors on adolescent autonomy, after controlling the agential factor in the rural sample, might be primarily due to the larger sample size and greater statistical power. In sum, resiliency was the most dominant factor for predicting adolescent autonomy after considering situational effects, especially in the urban sample. Once again, this result seems to support the early notion that autonomy development is a more internal resource oriented process.

As for predicting adolescent identity status, it appears the agential factors (i.e., collectivism, parent attachment, peer attachment, and resiliency) and the situational factor (i.e., school type) maintained similar effects as they were evaluated separately in both subsamples whereas the influence of family income changed in both urban and rural samples. It was surprising that family income became significant when predicting

achieved rather than foreclosed status after combining all factors, because other factors in the model suppressed the irrelevant variance from family income from predicting achieved over foreclosed status thus increasing the proportion of family income that overlaps with identity achievement over foreclosure status. Overall, the process of adolescent identity formation seems to not only rely on self-determination, but also connect to other external resources, such as situational and agential capitals.

Conclusion

Though in different aspects, both situational and agential factors contributed to adolescent psychosocial development. Family income and school type were the situational factors that predicted most aspects of psychosocial outcomes. Resiliency was the most significant agential factor across domains of psychosocial development. When situational and agential factor were combined, resiliency remained a significant predictor of each aspect of psychosocial development, while other factors changed in magnitude. This not only showed that resiliency was a stronger factor in predicting healthy adolescent development, but also implicates resiliency's power in facilitating positive psychosocial development even after considering the possible adverse effects from the situational restraints.

It may be worthwhile to note that resiliency, conceptually, is built directly on the radius of secure interpersonal relationships and may be indirectly influenced by situational positions. For example, parents from low-income families may not be able to offer as much family time with their adolescent children to strengthen parent-adolescent attachments because of occupational strains. Although some situational and agential

factors were no longer statistically significant in the combined factors model, it does not imply they are not important. The lack of statistical significance was the result of contribution overlap. Accordingly, this seems to suggest that most of the effect of situational and agential factors on adolescent development were interlocking. Future research should not shortsightedly focus on one against the other but consider them as a whole.

When comparing effects of factors on psychosocial development outcomes between urban and rural youth, no significant differences were found even though some regression coefficients appeared dramatically different between the two groups of youth. It appears, therefore, that situational and agential factors work similarly in terms of predicting psychosocial development regardless the rural-urban differences in terms of social structure and climate. In other words, there were no interaction effects between regional residency and predicting factors for adolescent psychosocial development outcomes.

Limitations and Future Research

Culture-Sensitive Measures

Having culturally sensitive instruments would be the ideal to better capture the construct in the studied population. However, numerous sources of subculture differences make the development of culturally sensitive measurement almost unrealistic. Even if the culturally sensitive instruments were truly designed for a specific culture, they would be more sample oriented; therefore decreasing the external validity of the findings and losing the common base for comparisons across cultures. The concerns of a

culturally sensitive measure become a dilemma for researchers choosing to emphasize test validity in one particular sample or on the generalizability and the comparisons across cultures. Although the general rule of thumb is to maintain the maximum reliability and validity of instruments among samples, it also ought to be based on the research questions and overall study purpose.

Cross-Sectional Design

One of the major limitations for a cross-sectional design is that developmental changes across time and causation cannot not be evaluated. Because this study is a pioneer study with an exploratory design, a cross-sectional approach is acceptable. Based on the results of this study, future studies might want to apply a longitudinal design to seek the trajectories of Taiwanese adolescent psychosocial development to see whether they have similar developmental patterns to western samples after they enter into colleges and beyond. A longitudinal design would offer a chance to demonstrate causal relationships between predictors at previous time points and development outcomes at later time points. It could also set the predictors as time-varying variables to consider the change in predictors and then to evaluate their contributions on adolescent development.

Convenience Sample Rather Than True Random Sample

It is always best to have a true random sample to maximize generalizability. However, it is often not available, given the participation concerns, sample size, time, and financial considerations. In this study, applying two cluster sampling procedures approximated random adolescent student participants; however, the willingness of

schools and classes, in terms of participation was not controllable. In other words, this sample might contain the effect of volunteer bias that would limit generalizability to the whole population of Taiwanese adolescent students. Accordingly, if random samples are not available, future studies might want to collect demographic information from both participants and subjects who refused to participate in an aggregate level if possible to evaluate the volunteer effect and to estimate the generalizability.

Self-Report Measure

There were several advantages of using self-report measures in this study, such as obtaining the adolescent subjective perspectives and providing the adolescents more privacy for answering their developmental status. On the other hand, self-report measures might bring the problem of social desirability, acquiescence, or deviance bias of responses. Future studies might want to apply triangulation such as by collecting data from parents or teachers of adolescents, interviewing adolescents at school and at home, or coding themes from the diaries or essays of adolescents to eliminate some of the possible bias when using self-report measures.

Sample Size

Although this study included 340 adolescents from urban areas and 702 from rural areas, the sample size for each pair of comparisons in the multinomial logit regression models were fairly small. In general, multinomial logit regression models consume a large sample size to coverage and to have enough statistical power to reject the null hypotheses. The rule of thumb for ideal sample size is at least 10 cases for each predictor and category of the nominal outcome (Peduzzi, Concato, Kemper, Holford, & Feinstein,

1996) or 30 times the parameters in the model (Pedhazur, 1997). Accordingly, the sample size of this study was considered small and possibly under statistical power. Odds ratio, as an effect size indicator in (multinomial) logit regression, has revealed that some associations between predictors and outcome were moderated to strong though not statistically significant. Therefore, future studies might want to recruit a larger sample size to ensure each pair of contrasts in multinomial logit regression has enough statistical power.

Conclusion and Implications

According to ecological theory (see Bronfenbrenner, 1979), culture, as an influence from the macrosystems, still plays one important part of human development, though it is more distant than any other impacts from the microsystems on human development (e.g., parent and peer attachment). Nevertheless, the power of cultural is omnipresent through interpersonal interactions. Because of numerous fundamental cultural differences between eastern and western societies, only one aspect of cultural differences (i.e., individualism versus collectivism) was evaluated in this study. This has been one of the most frequently used constructs to represent difference in values between cultures in cross-cultural psychology (see Fuligni, et al., 2002; Phinney et al., 2000; Singelis, 1994) and, therefore, made the connections and conversations between this study and previous cross-cultural research possible.

Based on the concern of cultural applicability, the main research interest of this study was to explore the extent to which western models of psychosocial development (i.e., autonomy and identity) fit into eastern cultures that conventionally hold more

collectivistic values in the society. Another focus of this study was to investigate and describe the possible differences between the urban and rural sample because of their suspected differential collectivistic affiliations in an attempt to discover whether differential westernization between urban and rural areas makes the western models fit better for adolescents from either area. The findings, in terms of differences and similarities, and implications are provided as follows.

Summary of Findings

In addition to the variations of Cronbach alpha coefficients, one of the major differences found was that Taiwanese adolescents have lower scores ($M = 2.44$, $SD = .70$) in comparative validation compared to 11th grade youth from the United States ($M = 3.16$, $SD = .61$; see Reiser, 2007). Secondly, in contrast to a U.S. sample (see Beckert & Reiser, 2006; Reiser, 2007), comparative validation was negatively correlated with other domains of cognitive autonomy in this Taiwanese sample. Therefore, it appears that Taiwanese youth have a somewhat different pattern of cognitive autonomy from adolescents in western societies, such as the United States, because of possible cultural differences in recognizing and defining appropriate autonomous expressions and cultural/societal value transitions.

Identity development in this study revealed the allocation of Taiwanese youth among the four identity classifications was 28% achieved, 29% in moratorium, 29% foreclosed, and 15% diffused. This shows higher percentages of moratorium and foreclosure but lower percentages in achievement and diffusion compared to previous western research in a sample of western middle and late adolescents (see Meeus, 1996).

Similar patterns, except the increased numbers of subjects in moratorium for college students when compare to a youth sample, of more subjects in foreclosed and less in achievement and diffusion statuses, were found when comparing Taiwanese college students (see Chang & Huang, 1982) with a western study on adolescents. There was only one difference between two Taiwanese samples: there were more college students in moratorium rather than foreclosure comparing to youth sample in this study.

Accordingly, the difference between the western and Taiwanese sample, in terms of identity development, might be a result of the overall collectivistic value of age expectations of autonomy and the restrained range for moratorium that prolong the time for being foreclosed and in moratorium and prevent adolescents from diffusion. However, few studies from both western and eastern societies were conducted for measuring an overall identity development classification instead of raw scores for each identity status. This could primarily be because it is more problematic to have a dependent variable with nominal measurement level in terms of limited analysis approach, less statistical power, and the need for a larger sample size. Therefore, more studies are needed to compare western and eastern youths' identity development status. More empirical data are needed to evaluate and reveal the possible differential development patterns in this global era.

Most directions of relations between factors and adolescent psychosocial development outcomes were similar to previous studies though there were a few variations in terms of significance level, which is quite common, even for studies within the same culture. Overall, the results from this study imply that prestigious positions in situational settings and quality agential strengths foster healthy development; if in a

disadvantaged situational position, having quality agential strengths, such as resiliency, could compensate for or prevent undesired outcomes. This study also found that adolescent resiliency had a strong association with positive development after partitioning out the effect of other situational and agential factors. Regional differences were only found in predicting achievement over foreclosed identity status. Accordingly, though there were certain degrees of sub-cultural differences within this Taiwanese sample, it seems like Taiwanese urban youth are more similar to Taiwanese rural teenagers than to western adolescents.

Implications

Because differences in developmental patterns were found in this sample, the next proactive step is to determine whether it is more effective, in terms of fostering healthy adolescent development, to modify the western developmental model to better fit Taiwanese youth or to inform society, educational outlets, and family systems in Taiwan of the applicability of the western model for Taiwanese youth. If the differences of developmental outcomes were desirable, or there were different directions of relationships between factors and outcomes, then a modified western model would be more efficient than using a western model. However, none of the conditions mentioned above were satisfied; neither the differences in direction of effect from the factors nor the differences in developmental outcomes of Taiwanese youth were advantageous. Given that Taiwanese society, as well as many other eastern societies, is becoming more westernized or globalized, it might be more advantageous to recognize the differences

between Taiwanese and western adolescents and then work on maintaining the strengths of Taiwanese youth while also compensating for potential weaknesses.

Findings from this study can be informative to those who would like to apply western models to Taiwanese adolescent development. However, more research is needed for replication and further exploration in terms of promoting healthy adolescent development. Others might want to further study Taiwanese psychosocial development over time by examining the effect of continuing globalization across regions by extending the cross-sectional design to longitudinal design. It is also worthwhile to note that by carefully modifying the translations of western ideas by applying triangular data collection approaches and using true random sampling methods more robust research findings may be possible.

Based on the results of this study, Taiwanese youth were weak in cognitive autonomy and forming achievement identity status. This may be because Taiwanese society, as well as other eastern societies, has placed a strong emphasis on academic achievement and provided limited leisure opportunities for youth after school (see Larson & Verma, 1999). This could lead adolescents to a more convergent, submissive, and passive approach to their developmental processes that have been frequently criticized by Taiwanese public opinions such as: “our children do not know what their own thoughts are.”

One might think that the most direct way to solve this problem is to abolish the entrance exams to eliminate the strong cultural emphasis of academic achievement in Taiwan. If so, adolescent students would not have to memorize as many correct answers for the conventional exams and could possibly have more free time for creative thinking

and exploration of new activities. However, it might not be practical for the Taiwanese educational system to abolish the highly competitive entrance exams and to use alternatively the application approach (with a minimum requirement of standardized scores) as is common in most western societies. Because the favoritism is still prevalent in Chinese/Taiwanese culture and that practice could result in inequality of educational opportunities (for adolescents with small family social networks) rather than fostering healthy adolescent development. In fact, the education department at Taiwan has tried a few solutions in recent years to decrease the overwhelming emphasis on academic achievement by encouraging schools to select a small number of students through applications and also provide two nationwide entrance exams instead of just one in an effort to decrease the stress of adolescent students. However, the implementation of only a few changes in policies of entrance exams or admissions of schools seems to fall short of fostering more autonomy and identity achievement in adolescents.

Too often, because of the emphasis of academic achievement, Taiwanese adolescents are taught by right and wrong (or black and white) contrast to do well in the conventional tests, which in turn limits their thinking and interests to explore other possibilities. Accordingly, Taiwanese adolescents, in general, would benefit the most if the society as a whole valued other achievements beyond academia for adolescents (e.g., problem-solving skills, leaderships, and creativity) in order to promote well-rounded individuals. Under adult supervision for ensuring secure learning environments physically and emotionally, adolescents could learn from the real experiences that usually do hinge on particular correct solutions, but allow for a range of possible solutions. Individual resiliency as a powerful variable was strongly associated with positive

psychosocial development. It is important that parents and educators consciously and consistently put efforts into enhancing individual resiliency in order to see fruitful results in the future. As mentioned previously, resiliency (the ego strength) was gradually built upon the secure relationships with significant others (e.g., parents). Therefore, providing adolescents with supportive family, school, or community environment in terms of showing interests in teens' projects/activities, respecting their own opinions/thoughts, encouraging them to express and evaluate them, and accepting (be patient with) them especially when they make mistakes or do not meet the given expectations are in order. By so doing, adolescents could develop secure and trusting relationships with others; therefore, they could have open minds without being overly cautious about making mistakes. This, in turn, would potentially facilitate their explorative or experimental process in learning (about themselves, societal expectations, and the balance between the two), which could further enhance their resiliency and positive (psychosocial) development outcomes.

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APPENDICES

Appendix A.
Descriptive Analyses

Table 1

Frequencies and Percentages of Demographic Characteristics for Taiwanese Adolescents from Urban and Rural Areas

Variable	Label	Urban area		Rural areas	
		<i>n</i>	%	<i>n</i>	%
Gender	Male	206	46.1	267	38.0
	Female	241	53.9	435	62.0
School type	Senior high	310	69.4	403	57.4
	Vocational high	137	30.6	299	42.6
Family structure	Traditional	388	86.8	541	77.1
	Non-traditional	52	11.6	155	22.1
Family income (NT\$)	Below \$30,000	38	8.5	190	29.0
	\$30,000~59,999	133	29.8	278	42.4
	\$60,000~79,999	94	21.0	103	15.7
	\$80,000~109,999	73	16.3	64	9.8
	\$110,000~159,999	41	9.2	15	2.3
	Above 160,000	27	6.0	5	0.8
	Missing	41		47	
Age		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
		17.12	1.05	16.59	1.20
Total <i>N</i> (%)		447 (38.9%)		702 (61.1%)	

Note. The currency conversion rate is NT\$31.92 = US\$1.

Table 2

Psychometric Properties of the Major Study Variables for Taiwanese Adolescents from Urban and Rural Areas

Variable	# Items	<i>M</i>	<i>SD</i>	α	Previous α	Range	
						Potential	Actual
1. Cognitive autonomy: evaluative thinking	8	3.66	.66	.86	.87	1-5	1-5
2. Cognitive autonomy: voicing opinions	5	3.20	.62	.63	.80	1-5	1-5
3. Cognitive autonomy: decision-making	6	3.86	.62	.76	.77	1-5	1-5
4. Cognitive autonomy: self-assessing	3	3.27	.89	.82	.73	1-5	1-5
5. Cognitive autonomy: comparative validation	5	2.44	.70	.68	.64	1-5	1-5
6. Emotional autonomy	5	15.03	2.87	.62	.60	5-25	5-25
7. Behavioral autonomy	5	17.30	3.26	.66	.64	5-25	7-25
8. Achievement	10	39.46	6.21	.71	.74	10-60	18-60
9. Moratorium	10	40.50	5.78	.62	.71	10-60	20-60
10. Foreclosure	10	29.68	7.33	.78	.79	10-60	10-54
11. Diffusion	10	33.88	6.51	.64	.78	10-60	14-57
12. Collectivism	14	45.06	9.53	.76	.68	14-84	15-80
13. Parent attachment	12	41.14	8.33	.86	.82	5-60	13-60
14. Peer attachment	12	42.51	6.72	.79	.80	5-60	16-60
15. Resiliency	32	132.05	17.05	.87	.81/.78	32-192	75-182

Table 3

Frequency and Percentage of Responded and Missed Values among Study Variables for Urban and Rural Taiwanese Adolescents

Independent variables	Responded	%	Missed	%	Dependent variables	Responded	%	Missed	%
Gender	1,149	100.0	0	0.0	Cognitive autonomy: evaluative Thinking	1,147	99.8	2	0.2
School type	1,149	100.0	0	0.0	Cognitive autonomy: voicing Opinions	1,147	99.8	2	0.2
Family structure	1,136	98.9	13	1.1	Cognitive autonomy: decision-Making	1,147	99.8	2	0.2
Family income	1,061	92.3	88	7.7	Cognitive autonomy: self-assessing	1,147	99.8	2	0.2
Collectivism	1,138	99.0	11	1.0	Cognitive autonomy: comparative validation	1,147	99.8	2	0.2
Parent attachment	1,142	99.4	7	0.6	Emotional autonomy	1,147	99.8	2	0.2
Peer attachment	1,140	99.2	9	0.8	Behavioral autonomy	1,141	99.8	8	0.2
Resiliency	1,141	99.3	8	0.7	Identity: achievement	1,149	100.0	0	0.0
					Identity: moratorium	1,149	100.0	0	0.0
					Identity: foreclosure	1,149	100.0	0	0.0
					Identity: diffusion	1,149	100.0	0	0.0

Appendix B.
Correlation Matrixes

Table 4

Correlation Coefficients Among Independent and Dependent Variable Missing Value Indicators for Taiwanese Adolescents from Urban and Rural Areas (N = 1,149)

Variables Contain Missing Values	Cognitive autonomy: evaluative thinking	Cognitive autonomy: voicing opinions	Cognitive autonomy: decision-making	Cognitive autonomy: self-assessing	Cognitive autonomy: comparative validation	Emotional autonomy	Behavioral autonomy
Family Structures	-.004	-.004	-.004	-.004	-.004	-.004	-.009
Family Income	-.012	-.012	-.012	-.012	-.012	-.012	-.024
Individualism vs. collectivism	-.004	-.004	-.004	-.004	-.004	-.004	.637**
Parent attachment	-.003	-.003	-.003	-.003	-.003	.533**	.935**
Peer attachment	-.004	-.004	-.004	-.004	-.004	.233**	.824**
Resiliency	-.003	-.003	-.003	-.003	-.003	-.003	.119**

* $p \leq .05$. ** $p \leq .01$.

Table 5

Correlation Coefficients of Psychosocial Development Outcomes for Taiwanese Adolescents from Urban Areas

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Cognitive autonomy: evaluative thinking	.853	.213**	.673**	.433**	-.291**	.130*	.205**	.200**	.017	-.151*	-.144*
2. Cognitive autonomy: voicing opinions	.410**	.606	.391**	.388**	-.156*	.413**	.296**	.083	.098	-.083	-.129*
3. Cognitive autonomy: decision-making	.627**	.413**	.778	.521**	-.275**	.256**	.327**	.179**	.151*	-.146*	-.232**
4. Cognitive autonomy: self-assessing	.418**	.373**	.479**	.811	-.219**	.239**	.251**	.262**	.003	-.091	-.157*
5. Cognitive autonomy: comparative validation	-.125	-.130	-.237**	-.076	.700	.144*	.034	-.064	.007	-.001	-.009
6. Emotional autonomy	.233**	.481**	.401**	.314**	.208**	.670	.158*	.140*	.012	-.046	-.111
7. Behavioral autonomy	.384**	.377**	.455**	.376**	-.030	.353**	.681	.069	.199**	-.179**	-.150*
8. Achievement _dummy	.159*	.227**	.200**	.240**	-.122	.262**	.248**	.723	---	---	---
9. Moratorium _dummy	.044	-.059	.052	-.085	.032	-.015	.050	---	.641	---	---
10. Foreclosure _dummy	-.160*	-.103	-.132	-.046	.089	-.014	-.176*	---	---	.785	---
11. Diffusion _dummy	-.195**	-.182**	-.192**	-.250**	.111	-.123	-.171*	---	---	---	.614

Note. Coefficients above the diagonal are for females, those below are for males, and the coefficients on the diagonal are Cronbach's alpha for each scale. Sample size for females ranged from 240 to 241; for males ranged from 205 to 206.

* $p \leq .05$. ** $p \leq .01$.

Table 6
Correlation Coefficients of Psychosocial Development Outcomes for Taiwanese Adolescents from Rural Areas

	1	2	3	4	5	6	7	8	9	10	11
1. Cognitive autonomy: evaluative thinking	.865	.342**	.617**	.402**	-.243**	.053	.291**	.156**	.057	-.105*	-.175**
2. Cognitive autonomy: voicing opinions	.369**	.644	.393**	.373**	-.278**	.420**	.435**	.161**	-.029	-.069	-.010
3. Cognitive autonomy: decision-making	.627**	.440**	.756	.491**	-.319**	.126**	.408**	.235**	.059	-.167**	-.157**
4. Cognitive autonomy: self-assessing	.474**	.454**	.582**	.822	-.188**	.219**	.391**	.183**	-.090	.011	-.094*
5. Cognitive autonomy: comparative validation	-.245**	-.338**	-.355**	-.351**	.660	.189**	-.158**	.069	.033	-.043	-.013
6. Emotional autonomy	.161**	.328**	.194**	.178**	-.006	.592	.295**	.157**	-.037	.004	-.102*
7. Behavioral autonomy	.362**	.384**	.400**	.343**	-.121*	.274**	.647	.143**	-.023	-.142**	-.031
8. Achievement_dummy	.163**	.091	.178**	.201**	.018	.050	.173**	.705	---	---	---
9. Moratorium_dummy	.085	.073	.088	-.005	-.049	-.004	.032	---	.606	---	---
10. Foreclosure_dummy	-.127*	.015	-.211**	-.025	-.042	.035	-.101	---	---	.768	---
11. Diffusion_dummy	-.192**	-.241**	-.127*	-.231**	.202**	-.063	-.141*	---	---	---	.660

Note. Coefficients above the diagonal are for females, those below are for males, and the coefficients on the diagonal are Cronbach's alpha for each scale. Sample size for females ranged from 429 to 435; for males ranged from 265 to 267.

* $p \leq .05$. ** $p \leq .01$.

Table 7

Correlation Coefficients among Structural Factors, Autonomy Achievement, Identity Status for Taiwanese Adolescents from Urban Areas

Variables	Male			Female		
	School type	Family structure	Family income	School type	Family structure	Family income
Cognitive autonomy: evaluative thinking	.020	-.039	.123	-.082	-.006	.058
Cognitive autonomy: voicing opinions	-.023	.028	.123	-.025	.053	.132
Cognitive autonomy: decision-making	-.073	.055	.099	-.033	.004	.139*
Cognitive autonomy: self-assessing	-.015	.032	.131	.009	-.047	.131
Cognitive autonomy: comparative validation	-.099	-.041	.043	-.059	.096	-.054
Emotional autonomy	.043	.051	.062	-.119	.082	.103
Behavioral autonomy	.005	-.013	.004	-.029	.052	.176**
Achievement_dummy	.042	.069	-.050	-.043	-.005	.056
Moratorium_dummy	.022	-.025	.036	-.085	.021	.056
Foreclosed_dummy	.095	-.117	.158*	.132*	-.026	.004
Diffusion_dummy	-.092	-.008	-.038	.122	.028	-.024

Note. Sample size for females ranged from 212 to 241; for males ranged from 186 to 205.

* $p \leq .05$. ** $p \leq .01$.

Table 8

Correlation Coefficients among Structural Factors, Autonomy Achievement, Identity Status for Taiwanese Adolescents from Rural Areas

Variables	Male			Female		
	School type	Family structure	Family income	School type	Family structure	Family income
Cognitive autonomy: evaluative thinking	-.149*	.033	.114	-.215**	-.041	.126*
Cognitive autonomy: voicing opinions	-.060	.085	.064	-.054	.009	.200**
Cognitive autonomy: decision-making	-.073	.052	.138*	-.149**	.000	.162**
Cognitive autonomy: self-assessing	-.034	-.011	.134*	-.092	.013	.110*
Cognitive autonomy: comparative validation	.139*	-.085	-.141*	-.067	.005	-.038
Emotional autonomy	-.074	.045	-.009	-.056	.013	.174**
Behavioral autonomy	-.071	.025	.030	-.047	.087	.105*
Achievement_dummy	-.030	-.037	.076	-.085	-.044	.142**
Moratorium_dummy	-.225**	-.072	.065	-.156**	-.015	.072
Foreclosed_dummy	.062	-.008	-.088	.150**	.020	-.103*
Diffusion_dummy	.003	-.001	-.110	.145**	.017	-.065

Note. Sample size for females ranged from 391 to 434; for males ranged from 251 to 267.

* $p \leq .05$. ** $p \leq .01$.

Table 9

Correlation Coefficients among Agential Factors Autonomy Achievement, Identity Status for Taiwanese Adolescents from Urban Areas

Variables	Male				Female			
	Collectivism	Parent attachment	Peer attachment	Resiliency	collectivism	Parent attachment	Peer attachment	resiliency
Cognitive autonomy: evaluative thinking	.066	.252**	.321**	.515**	.034	.191**	.148*	.344**
Cognitive autonomy: voicing opinions	.157*	.263**	.323**	.474**	.222**	.115	.247**	.366**
Cognitive autonomy: decision-making	.114	.178*	.296**	.565**	.055	.171**	.225**	.392**
Cognitive autonomy: self-assessing	.079	.318**	.200**	.435**	.120	.170**	.143*	.359**
Cognitive autonomy: comparative validation	-.260**	-.106	-.262**	-.115	-.102	-.308**	-.120	-.026

(table continues)

Variables	Male				Female			
	Collectivism	Parent attachment	Peer attachment	Resiliency	Collectivism	Parent attachment	Peer attachment	Resiliency
Emotional autonomy	-.001	.221**	.084	.409**	.132*	.030	.186**	.280**
Behavioral autonomy	.093	.152*	.273**	.541**	.203**	.176**	.281**	.469**
Achievement _dummy	-.070	.033	.061	.401**	.060	-.028	.148*	.355**
Moratorium _dummy	.055	.054	.052	.038	-.029	-.009	.199**	.099
Foreclosure _dummy	.048	.080	-.124	-.127	.078	.022	-.183**	-.311**
Diffusion _dummy	-.218**	-.202**	-.236**	-.250**	-.065	-.051	-.168**	-.145*

Note. Sample size for females ranged from 237 to 241; for males ranged from 203 to 206.

* $p \leq .05$. ** $p \leq .01$.

Table 10

Correlation Coefficients among Agential Factors Autonomy Achievement, Identity Status for Taiwanese Adolescents from Rural Areas

Variables	Male				Female			
	Collectivism	Parent attachment	Peer attachment	Resiliency	Collectivism	Parent attachment	Peer attachment	Resiliency
Cognitive autonomy: evaluative thinking	.047	.225**	.314**	.445**	.068	.300**	.162**	.357**
Cognitive autonomy: voicing opinions	.055	.125*	.321**	.385**	.146**	.165**	.413**	.395**
Cognitive autonomy: decision-making	-.010	.246**	.321**	.481**	.064	.257**	.232**	.436**
Cognitive autonomy: self-assessing	.109	.271**	.364**	.439**	.190**	.272**	.182**	.381**
Cognitive autonomy: comparative validation	-.153*	-.232**	-.261**	-.136*	-.168**	-.210**	-.178**	-.075

(table continues)

	Male				Female			
	Collectivism	Parent attachment	Peer attachment	Resiliency	collectivism	Parent attachment	Peer attachment	Resiliency
Emotional autonomy	.033	.165**	.133*	.311**	.085	.120*	.270**	.368**
Behavioral autonomy	.053	.118	.246**	.590**	.101*	.216**	.285**	.515**
Achievement _dummy	-.050	-.010	.157*	.320**	.001	-.017	.189**	.221**
Moratorium _dummy	.034	.051	.105	.073	-.080	-.036	-.018	.050
Foreclosure _dummy	.217**	.112	-.104	-.225**	.101*	.018	-.072	-.180**
Diffusion _dummy	-.210**	-.126*	-.088	-.180**	-.017	-.114*	-.060	-.203**

Note. Sample size for females ranged from 427 to 434; for males ranged from 264 to 267. * $p \leq .05$. ** $p \leq .01$.

Appendix C.

Summary Table of Regression

Table 12

Chi-square Tests for Gender Difference in Cognitive Autonomy Status for Taiwanese Adolescents (N = 1,147)

Gender	Cognitive autonomy status				Row sum
	Eastern ideal	Avoidant tendency	Intermediary	Dispersed	
Male	94 (19.9%)	195 (41.3%)	152 (32.2%)	31 (6.6%)	472
Female	109 (16.1%)	306 (45.3%)	236 (35.0%)	24 (3.6%)	675
Column sum	203	501	388	55	1,147
Chi-square test	$\chi^2_{(3)} = 9.136; p = .028$				

Table 13

t tests for Gender Difference in Emotional (N = 1,147) and Behavioral Autonomy (N = 1,141) for Taiwanese Adolescents

Dependent variable	Independent factor						
		<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Emotional autonomy	Male	473	15.30	2.938	2.708	1,145	.007
	Female	674	14.84	2.812			
Behavioral autonomy	Male	471	17.60	3.300	2.616	1,139	.009
	Female	670	17.09	3.216			

Table 14

Chi-square Tests for Gender Difference in Identity Development for Taiwanese Adolescents (N = 780)

Gender	Identity status				Row sum
	Achievement	Moratorium	Foreclosure	Diffusion	
Male	84 (26.3%)	88 (27.5%)	91 (28.4%)	57 (17.8%)	320
Female	131 (28.5%)	138 (30.0%)	133(28.9%)	58 (12.6%)	460
Column sum	215	226	224	115	780
Chi-square test $\chi^2_{(3)} = 4.228; p = .238$					

Table 15

Multinomial Logistic Regression of Cognitive Autonomy Status Regressed on Regional and Gender Influences for Taiwanese Adolescents (N = 1,147)

Variables	Eastern ideal vs. avoidant tendency		Intermediary vs. avoidant tendency		Dispersed vs. avoidant tendency	
	OR	(SE)	OR	(SE)	OR	(SE)
Region	.436	(.559)	.912	(.474)	1.837	(.916)
Gender	.245*	(.587)	.709	(.475)	.733	(1.009)
Region* gender	1.968+	(.349)	1.222	(.284)	.781	(.594)

Note. OR = odds ratio.

+ $p < .10$. * $p < .05$.

Table 16

*Summary Table of 2*2 ANOVA for Regional and Gender Differences in Emotional Autonomy Development for Taiwanese Adolescents from Urban and Rural Areas (N= 1146)*

Source	SS	df	MS	F	p	R ²
Region	17.835	1	17.835	2.178	.140	.010
Gender	75.014	1	75.014	9.161	.003	
Region * gender	12.834	1	12.834	1.567	.211	
Error	9,359.235	1,143	8.188			

Table 17

*Summary Table of 2*2 ANOVA for Regional and Gender Differences in Behavioral Autonomy Development for Taiwanese Adolescents from Urban and Rural Areas (N= 1140)*

Source	SS	df	MS	F	p	R ²
Region	5.420	1	5.420	.513	.474	.008
Gender	87.655	1	87.655	8.296	.004	
Region * Gender	17.634	1	17.634	1.669	.197	
Error	12,013.198	1,137	10.566			

Table 18

Multinomial Logistic Regression of Identity Status Regressed on Region and Gender influences for Taiwanese Adolescents (N = 780)

Variables	Achieved vs. foreclosed		Moratorium vs. foreclosed		Diffused vs. foreclosed	
	OR	(SE)	OR	(SE)	OR	(SE)
Region	.188*	(.688)	3.01+	(.664)	2.72+	(.762)
Gender	.201*	(.661)	2.69 *	(.665)	.175*	(.790)
Region* gender	2.878**	(.399)	2.369*	(.396)	2.379+	(.473)

Note. OR = odds ratio.

+ $p < .10$. * $p < .05$. ** $p < .01$.

Table 19

Multinomial Logistic Regression of Identity Status Regressed on Regional Influences, Stratified by Gender for Taiwanese Male (n = 320) and Female (n = 460) Adolescents

Variables	Achieved vs. foreclosed		Moratorium vs. foreclosed		Diffused vs. foreclosed	
	OR	(SE)	OR	(SE)	OR	(SE)
Male (urban vs. rural)	.542*	(.310)	.741	(.307)	.647	(.206)
Female (urban vs. rural)	1.561+	(.252)	1.691*	(.250)	1.539	(.324)

Note. OR = odds ratio.

+ $p < .10$. * $p < .05$.

Table 20

Multinomial Logistic Regression of Cognitive Autonomy Status Regressed on Gender and Situational Factors for Taiwanese Adolescents from Urban (n = 395) and Rural (n = 640) Areas

Region	Variables	Eastern ideal vs. avoidant tendency		Intermediary vs. avoidant tendency		Dispersed vs. avoidant tendency	
		OR	(SE)	OR	(SE)	OR	(SE)
Urban							
	Gender	.440*	(.327)	1.095	(.253)	.609	(.541)
	Family structure	1.414	(.441)	1.043	(.372)	1.084	(.800)
	Family income	1.321*	(.112)	1.186+	(.090)	1.206	(.186)
	School type	1.109	(.357)	.599+	(.279)	.447	(.705)
Rural							
	Gender	1.064	(.232)	1.191	(.190)	.468+	(.398)
	Family structure	1.659+	(.279)	1.124	(.228)	1.251	(.479)
	Family income	1.486**	(.105)	1.062	(.094)	1.087	(.192)
	School type	.573*	(.241)	.726+	(.190)	.527	(.430)

Note. OR = odds ratio.

+ $p < .10$. * $p < .05$. ** $p < .01$.

Table 21

Multiple Regression of Emotional Autonomy Regressed on Gender and Situation Factors for Taiwanese Adolescents from Urban (n = 395) and Rural (n = 640) Areas

Region	Variables	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Urban						
	Gender	-.179	.105	-.092	-1.697	.090
	Family structure	.275	.151	.092	1.823	.069
	Family income	.068	.037	.095	1.838	.067
	School type	-.067	.116	-.032	-.575	.565
	R^2	.023				
	<i>F</i>	2.927*				
Rural						
	Gender	-.079	.082	-.038	-.965	.335
	Family structure	.184	.098	.077	1.874	.061
	Family income	.101	.039	.107	2.591	.010
	School type	-.159	.083	-.078	-1.913	.056
	R^2	.023				
	<i>F</i>	3.766**				

* $p < .05$. ** $p < .01$.

Table 22

Multiple Regression of Behavioral Autonomy Regressed on Gender and Situational Factors for Taiwanese Adolescents from Urban (n = 396) and Rural (n = 641) Areas

Region	Variables	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Urban						
	Gender	-.252	.105	-.130	-2.394	.017
	Family structure	.129	.151	.043	.854	.394
	Family income	.065	.037	.091	1.757	.080
	School type	.028	.116	.013	.242	.809
	R^2	.026				
	F	2.616*				
Rural						
	Gender	-.057	.083	-.027	-.689	.491
	Family structure	.244	.100	.100	2.441	.015
	Family income	.088	.040	.093	2.232	.026
	School type	-.116	.085	-.056	-1.367	.172
	R^2	.018				
	F	2.986*				

* $p < .05$.

Table 23

Multinomial Logistic Regression of Identity Status Regressed on Gender and Situational Factors for Taiwanese Adolescents from Urban (n = 280) and Rural Areas (n = 429)

Region	Variables	Achieved vs. foreclosed		Moratorium vs. foreclosed		Diffused vs. foreclosed	
		OR	(SE)	OR	(SE)	OR	(SE)
Urban							
	Gender	.538+	(.357)	.675	(.357)	.333*	(.426)
	Family structure	1.852	(.533)	1.573	(.550)	1.058	(.679)
	Family income	.917	(.124)	.970	(.122)	.854	(.151)
	School type	.519+	(.373)	.477*	(.373)	.772	(.444)
Rural							
	Gender	2.176**	(.287)	2.298**	(.279)	.914	(.327)
	Family structure	1.036	(.346)	1.121	(.337)	.973	(.384)
	Family income	1.486**	(.143)	1.305+	(.143)	.945	(.186)
	School type	.522*	(.292)	.266***	(.297)	1.138	(.338)

Note. OR = odds ratio.

+ $p < .10$. * $p < .05$. ** $p < .01$ *** $p < .001$.

Table 24

Multinomial Logistic Regression of Cognitive Autonomy Status for Taiwanese Adolescents Regressed on Gender and Agential Factors from Urban (n = 395) and Rural (n = 640) Areas

Region	Variables	Eastern Ideal vs. avoidant tendency		Intermediary vs. avoidant tendency		Dispersed vs. avoidant tendency	
		OR	(SE)	OR	(SE)	OR	(SE)
Urban							
	Gender	.647	(.333)	1.043	(.246)	.557	(.531)
	Collectivism	.737+	(.178)	1.063	(.135)	1.422	(.292)
	Parent attachment	1.439+	(.187)	1.064	(.139)	1.705+	(.308)
	Peer attachment	1.180	(.186)	1.274+	(.143)	1.092	(.290)
	Resiliency	5.304***	(.240)	1.991***	(.182)	3.235**	(.363)
Rural							
	Gender	.722	(.253)	.985	(.195)	.358*	(.403)
	Collectivism	.908	(.125)	.913	(.098)	1.035	(.204)
	Parent attachment	1.297+	(.133)	1.212+	(.104)	1.443	(.226)
	Peer attachment	1.254	(.138)	.974+	(.108)	1.423	(.227)
	Resiliency	3.126***	(.147)	1.738***	(.115)	1.525+	(.233)

Note. OR = odds ratio.

+ $p < .10$. * $p < .05$. *** $p < .001$.

Table 25

Multiple Regression of Emotional Autonomy Regressed on Gender and Agential Factors for Taiwanese Adolescents from Urban (n = 396) and Rural (n = 641) Areas

Region	Predictor	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Urban						
	Gender	-.099	.094	-.051	-1.048	.295
	Collectivism	-.008	.050	-.008	-.162	.871
	Parent attachment	.022	.052	.021	.412	.681
	Peer attachment	-.031	.053	-.032	-.590	.556
	Resiliency	.389	.061	.355	6.354	.000
	R^2	.129				
	F	11.603***				
Rural						
	Gender	-.173	.077	-.084	-2.253	.025
	Collectivism	.008	.038	.009	-.221	.825
	Parent attachment	.013	.041	.013	.319	.750
	Peer attachment	.070	.042	.071	1.648	.100
	Resiliency	.291	.042	.306	7.001	.000
	R^2	.124				
	F	18.048***				

*** $p < .001$.

Table 26

Multiple Regression of Behavioral Autonomy Regressed on Gender and Agential Factors for Taiwanese Adolescents from Urban (n = 396) and Rural (n = 641) Areas

	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Urban					
Gender	-.075	.085	-.039	-.882	.378
Collectivism	.017	.045	.017	.369	.712
Parent attachment	-.059	.047	-.058	-1.256	.210
Peer attachment	.048	.048	.048	.997	.319
Resiliency	.564	.055	.516	10.205	.000
<i>R</i> ²	.286				
<i>F</i>	31.273***				
Rural					
Gender	-.184	.070	-.088	-2.616	.009
Collectivism	-.004	.035	-.004	-.123	.902
Parent attachment	-.026	.037	-.026	-.693	.489
Peer attachment	.050	.039	.050	1.299	.194
Resiliency	.508	.038	.527	13.418	.000
<i>R</i> ²	.295				
<i>F</i>	53.031***				

*** $p < .001$.

Table 27

Multinomial Logistic Regression of Identity Status Regressed on Gender and Agential Factors for Taiwanese Adolescents from Urban (n = 280) and Rural (n = 429) Areas

Region	Variables	Achieved vs. foreclosed		Moratorium vs. foreclosed		Diffused vs. foreclosed	
		OR	(SE)	OR	(SE)	OR	(SE)
Urban							
	Gender	.806	(.390)	.703	(.360)	.366*	(.418)
	Collectivism	.665+	(.211)	.727	(.198)	.589*	(.235)
	Parent attachment	.520**	(.223)	.658*	(.210)	.555*	(.249)
	Peer attachment	1.087	(.217)	1.675*	(.207)	.796	(.237)
	Resiliency	7.349***	(.300)	2.558**	(.278)	1.560	(.325)
Rural							
	Gender	1.530	(.303)	1.413	(.274)	.892	(.327)
	Collectivism	.598**	(.152)	.614**	(.142)	.592**	(.174)
	Parent attachment	.536***	(.181)	.663*	(.170)	.544**	(.204)
	Peer attachment	1.354+	(.171)	1.137	(.158)	1.256	(.195)
	Resiliency	3.720***	(.190)	2.226***	(.173)	.895	(.219)

Note. OR = odds ratio.

+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 28

Multinomial Logistic Regression of Cognitive Autonomy Status Regressed on Gender, Structural Factors, and Agential Factors for Taiwanese Adolescents from Urban (n = 395) and Rural (n = 640) Areas

Region	Variables	Eastern Ideal vs. avoidant tendency		Intermediary vs. avoidant tendency		Dispersed vs. avoidant tendency	
		OR	(SE)	OR	(SE)	OR	(SE)
Urban							
	Gender	.643	(.362)	1.273	(.266)	.737	(.562)
	Family structure	1.040	(.517)	.938	(.395)	1.263	(.849)
	Family income	1.122	(.130)	1.074	(.095)	.987	(.207)
	School type	1.103	(.401)	.574+	(.295)	.393	(.740)
	Collectivism	.736+	(.181)	1.087	(.137)	1.505	(.302)
	Parent attachment	1.429+	(.192)	1.031	(.142)	1.667	(.312)
	Peer attachment	1.165	(.188)	1.285+	(.146)	1.102	(.293)
	Resiliency	5.101***	(.240)	1.923***	(.184)	3.145**	(.368)
Rural							
	Gender	.766	(.258)	1.012	(.198)	.392*	(.409)
	Family structure	1.680+	(.308)	1.110	(.234)	1.247	(.486)
	Family income	1.373**	(.118)	1.007	(.098)	1.106	(.196)
	School type	.779	(.268)	.861	(.199)	.599	(.442)
	Collectivism	.943	(.126)	.919	(.098)	1.051	(.207)
	Parent attachment	1.255+	(.135)	1.205+	(.104)	1.423	(.227)
	Peer attachment	1.258	(.139)	.981	(.109)	1.461	(.231)
	Resiliency	3.057***	(.149)	1.711***	(.116)	1.454	(.237)

Note. OR = odds ratio.

+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 29

Hierarchical Multiple Regression of Emotional Autonomy Regressed on Gender, Structural Factors, and Agential Factors for Taiwanese Adolescents from Urban (n = 396) and Rural (n = 641) Areas

Region	Model 1		Model 2		Model 3	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Urban						
Gender	-.220*	.098	-.179	.105	-.082	.101
Family structure			.275	.151	.218	.146
Family income			.068+	.037	.028	.036
School type			-.067+	.116	-.043	.111
Collectivism					.003	.051
Parent attachment					.026	.053
Peer attachment					-.035	.053
Resiliency					.375***	.062
<i>R</i> ² Change		.013+		.016+		.107***
Rural						
Gender	-.109	.081	-.079	.082	-.158*	.078
Family structure			.184+	.098	.160+	.093
Family income			.101*	.039	.061	.037
School type			-.159	.083	-.059	.080
Collectivism					.000	.038
Parent attachment					.007	.041
Peer attachment					.069	.042
Resiliency					.280***	.042
<i>R</i> ² Change		.003		.020**		.108***

+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 30

Hierarchical Multiple Regression of Behavioral Autonomy Regressed on Gender, Structural Factors, and Agential Factors for Taiwanese Adolescents from Urban (n = 396) and Rural (n = 641) Areas

Region	Model 1		Model 2		Model 3	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Urban						
Gender	-.258**	.097	-.252	.105	-.088	.092
Family structure			.129	.151	.006	.133
Family income			.065+	.037	.001	.033
School type			.028	.116	.039	.101
Collectivism					.015	.046
Parent attachment					-.058	.048
Peer attachment					.046	.048
Resiliency					.565***	.056
<i>R</i> ² Change		.018**		.009		.260***
Rural						
Gender	-.080	.083	-.057	.083	-.191*	.071
Family structure			.244*	.100	.205*	.085
Family income			.088*	.040	.026	.034
School type			-.116	.085	.056	.073
Collectivism					-.002	.035
Parent attachment					-.023	.038
Peer attachment					.045	.039
Resiliency					.512***	.038
<i>R</i> ² Change		.001		.017*		.284***

+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 31

Multinomial Logistic Regression of Identity Status Regressed on Gender, Structural Factors, and Agential Factors for Taiwanese Adolescents from Urban (n = 280) and Rural (n = 429) Areas

Region	Variables	Achieved vs. foreclosed		Moratorium vs. foreclosed		Diffused vs. foreclosed	
		OR	(SE)	OR	(SE)	OR	(SE)
Urban							
	Gender	1.006	(.362)	.874	(.387)	.374*	(.455)
	Family structure	.849	(.517)	.979	(.619)	.655	(.738)
	Family income	.709*	(.130)	.789+	(.138)	.881	(.161)
	School type	.437+	(.401)	.450 *	(.404)	.917	(.469)
	Collectivism	.668+	(.181)	.731	(.205)	.565*	(.242)
	Parent attachment	.524**	(.192)	.654*	(.216)	.535*	(.256)
	Peer attachment	1.211	(.188)	1.848**	(.217)	.832	(.242)
	Resiliency	7.836***	(.240)	2.633**	(.284)	1.635	(.329)
Rural							
	Gender	1.751+	(.318)	1.876*	(.293)	.890*	(.341)
	Family structure	.754	(.392)	.997	(.357)	1.012	(.400)
	Family income	1.281	(.157)	1.207	(.149)	.962	(.197)
	School type	.655	(.333)	.305***	(.317)	1.004	(.356)
	Collectivism	.635**	(.153)	.656**	(.147)	.605**	(.173)
	Parent attachment	.501**	(.186)	.601**	(.177)	.544**	(.208)
	Peer attachment	1.373+	(.175)	1.173	(.165)	1.230	(.193)
	Resiliency	3.456***	(.193)	1.982***	(.179)	.911	(.221)

Note. OR = odds ratio.

+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

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+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix D.

Chinese-English Bilingual Format of Scale Items

Case Inventory

1. If I have something to add to a class discussion I speak up
在課堂中，如果我對討論的議題有看法時，我就會舉手發言
2. I think about the consequences of my decision
在我做決定前，我會先考慮做這個決定的後果
3. I look at every situation from other people's perspectives before making my own judgment
在我做決定之前，我會站在其他人的角度來思考
4. When I disagree with others I share my views
當我不同意他人的想法時，我會說出自己的想法
5. I need family members to approve my decision
我需要我的家人支持我所做的任何決定
6. I think of all possible risks before acting on a situation
在我做事情(採取行動)前，我想過各種可能的風險
7. I like to evaluate my daily actions
我喜歡檢視並評定自己每日的所作所為
8. I consider alternatives before making decisions
做決定前，我會先考慮其他各種可能的方案
9. I stand up for what I think is right regardless of the situation
不論任何情況下，我都會支持我所認為對的事情
10. I think about how my actions will affect others
我會思考考慮到自己的行為對他人可能產生的影響
11. I think about how my actions will affect me in the long run
我會思考自己的行為對自己未來的可能影響
12. I like to evaluate my thoughts
我喜歡檢視、評估自己的想法是否成熟、有智慧
13. I feel that my opinions are valuable enough to share
我認為我自己的意見是很值得與他人分享的
14. I need my views to match those of my parents
我需要我的想法與我父母的想法一致，才會使我心裡踏實
15. I am good at identifying my own strengths
我擅於認定、辨別自己的優點/長處/強項
16. It is important to me that my friends approve of my decisions
對我來說，我朋友能夠認同並支持我做的決定是很重要的
17. There are consequences to my decisions
我知道任何一項決定，都將會有其好的或者不好的結果
18. I can tell that my way of thinking has improved with age

我知道我的思考能力已經隨著年紀而成長

19. At school I keep my opinions to myself
在學校的時候，我會保留自己的意見(想法)，不願提出
20. I think more about my future today than I did when I was younger
比起小時候，我現在比較常思考自己的未來
21. I am best at identifying my abilities
我是最瞭解自己能力的人
22. My decision making ability has improved with age
我做決定的能力/對事情判斷的能力隨年紀而成長
23. I need my views to match those of my friends
我需要使我自己的想法與我朋友們的想法一致，才會使我心裡踏實
24. I am good at evaluating my feelings
我很擅長察覺、評估自己的感受
25. I am better at decision making than my friends
我比我的同學還擅長於做決定
26. I care about what others think of me
我在乎別人怎麼看待我
27. I am the best judge of talents
我清楚了解自己的天賦、長處

Adolescent Autonomy ScaleEmotional Autonomy

1. Getting nervous when imposing will on others
強加自己的意願到別人的身上，會令我緊張
2. Having the tendency to adapt to others
我有順應他人意見的傾向
3. When disagreeing with somebody, expressing this
當我不同意別人的想法的時候，我會表達出來
4. Easily giving in to others, even when not sure
即使在未確定事情來龍去脈的狀況下，我很容易就放棄自己的想法而去
認同別人的想法
5. Changing one's mind, when listening to others
當我聽到別人的意見時，我很容易改變自己的想法

Behavioral Autonomy

6. Going for a goal
我會為目標(理想)而努力
7. Finding it difficult to start a new activity alone
要我獨自去嘗試一個新的活動是很困難的
8. Easily stepping up to something new
我是個很容易接受新事物的人
9. Being very adventurous
我很愛冒險
10. Feeling at ease in new situations
在新的環境當中，我依然覺得自在

The Modified Extend Objective Measure of Ego Identity Status scale

(The Modified EOMEIS)

1. My parents know what's best for me in terms of how to choose friends
我的父母知道選什麼樣的朋友是對我最好的
2. I haven't thought much about what I look for in a date. I just go out to have a good time
我從沒仔細想過自己對於約會有什麼想法(期待)，我想大概就只是跟對方出去玩得暢快而已
3. My own views on a desirable lifestyle were taught to me by my parents and I don't see any reason to question what they taught me
我所渴望的生活方式是來自於父母親的傳授，且我相信他們所教導的，因為那是無須質疑的
4. My parents had it decided a long time ago what I should go into for employment and I'm following their plan
我父母很早就幫我選擇了我將來的工作，我只是一路照著計畫進行
5. My education is not something I really spend much time thinking about
我並沒有花太多時間思考將來自己要接受什麼樣的教育(例如：要唸什麼學系)
6. I guess I just kind of enjoy life in general, I don't spend much time thinking about it
整體而言，我並沒有什麼特定的人生觀，或是要追求什麼樣的生活方式，我認為我想要過的生活方式就跟大多數人一樣
7. Even if my parents disapproved, I could be a friend to a person if I thought she/he was basically good
如果我認為一個人基本上是個好人(本性善良)，即使我的父母不同意，我還是願意和他(她)做好朋友
8. I believe my parents probably know what is best for my future education
我相信我父母大概知道我應該接受什麼樣的教育，會對我的未來發展最好(例如：就讀哪所大學、選什麼科系)
9. When I'm on a date, I don't like to have any particular plans
如果我出去約會，我不喜歡事先設定任何特別的計畫(例如：要去哪裡玩、要在哪裡吃飯)，一切順其自然
10. I just can't decide what to do for an occupation. There are so many that have possibilities.
我還沒有決定我以後要做什麼樣的工作，因為有很多種可能性
11. After a lot of self-examination, I have established a very definite view on what my own lifestyle will be
經過一連串的探索後，我已經知道我要過什麼樣的生活(方式)

12. I'm really not interested in finding the "right career", any job will do. I just seem to go with what is available
我對於找尋一個是合自己的工作並不那麼在意，將來有什麼工作機會我就去做什麼
13. I know my parents don't approve of some of my friends, but I haven't decided what to do about it yet
我知道我父母親不喜歡我現在的某些朋友，但我還沒有打算要怎麼處理這件事
14. Some of my friends are very different from each other, I'm trying to figure out exactly where I fit in
我有一些不同特質或個性的朋友們，我藉著跟他們相處的過程當中，尋找最適合我特質或個性的知己
15. I couldn't be friends with someone my parent's disapprove of
我不能跟我父母親不贊同、不認可的人做朋友
16. My parent's views on life are good enough for me, I don't need anything else
我父母的人生觀已經能夠充分地引導我人生的方向，所以我不需要再尋找或接受其他的觀點了
17. I'm not so sure about what I want for my education, but I am now actively exploring different choices
我不確定將來我要選擇什麼科系就讀，但是如果要我改變一些原則，那一定要是個很能說服我的理由
18. My dating standards are flexible, but for me to change my standards, it must be something I really believe in
我想我目前(或將來)的約會標準是很有彈性的，但是如果要我改變一些原則，那一定要是個很能說服我的理由
19. I've many different kinds of friends, and now I have a clear idea of what I look for in a friendship
儘管我有不同特質或個性的朋友，但是我很清楚地知道自己對「友誼」的期待是什麼
20. I've done a lot of thinking about my education, and I've got a specific plan laid out
我已經仔細思考過我將來的升學規劃，而且已經擬定了計畫
21. I don't have any close friends. I just like to hang around with the crowd and have a good time
我沒有很親近的朋友，但是我喜歡跟著一群人一起出去玩
22. The standards or "unwritten rules" I follow about dating are still in the process of developing. They haven't completely "jelled" yet
我的約會規則(例如：要跟什麼樣的人約會)還在發展當中，它們還沒有定型

23. I would never date anyone my parents disapprove of
我不會跟一個我父母不認可的對象約會
24. I've never had any real close friends. It takes too much energy to keep a friendship going
我還沒有任何非常支新的朋友，因為維繫友誼是相當消耗時間與體力
25. Sometimes I wonder if the way other people date is the best way for me
有時候我會懷疑別人約會的方式是否也適用於自己
26. After considerable thought, I've developed my own individual viewpoint of what is for me an ideal "lifestyle" and don't believe anyone will be likely to change my views
在仔細思考後，我已經確立出自己的價值觀，而沒有人可以動搖我的觀點
27. School is just something I'm supposed to do, not much more
對我來說，上學、接受教育只是做我這個年紀的孩子應該做的事情，並沒有其他的意義
28. I haven't chosen the occupation I really want to get into. I'll just work at whatever is available unless something better comes along.
假如我能夠選擇自己想要的職業，我會去做當時可以取得的工作，並等待時機
29. My rules and standards about dating have remained the same since I first started going out and I don't anticipate that they will change
自從升上國中後，我與異性互動的規則都沒有改變。我也不認為以後會有什麼改變
30. It took a lot of effort to decide, and I now have definite intentions about my education
為了找尋一個適當的人生觀，我常和朋友、家人交換意見
31. It took a lot of effort to decide, and I now have definite intentions about my education
經過一段時間的努力探索，我現在清楚地知道我接受教育的目的與意義
32. There's no single "life-style" which appeals to me more than another
我沒有特別喜歡哪一種生活方式，或者特別想要過哪種生活
33. It took me a while to figure it out, but now I really know what I want for a career
我經過一段時間思考和探索後，我終於知道自己將來想從事哪一種職業
34. I'm still trying to decide how capable I am as a person and what jobs will be right for me
我仍在探索自己的能力，並試著瞭解自己是合做什麼樣的職業
35. There are so many subjects to learn about in school. I'm trying out as many as possible so I can make a better decision about my future education
在學校裡，我藉著學習不同的學科的過程，瞭解自己的性向，以利我將來選校選系的時做出最適合我的決定
36. I might have thought about a log of different jobs but there's never really been any question since my parents said what they wanted

我有探索/思考過幾種不同的工作，但是那些都已經不列入考慮，因為我父母親想要我做他們想要的

37. I'm looking for an acceptable perspective for my own "lifestyle" view, but I haven't really found it yet

我正在尋找適合自己的生活方式，但是我尚未找到

38. My parents have taught me the most important goals about my education, I've seen no reason to doubt them

我父母親曾經告訴過我教育的目的為何，而我從來沒有懷疑過他們所說的

39. It took me a long time to decide, but now I know for sure what direction to move in for a career

我花了好一段時間探索，現在才知道自己將來的職業取向

40. I've dated different types of people and I know exactly what my own "unwritten rules" for dating are

我有與不同人約會的經驗，所以我已經發展出自己的約會規則

The Individualism-Collectivism Scale

1. Each family has its own problems unique to itself. It does not help to tell relatives about one's problem
家家都有難念的經，跟親戚傾訴也無濟於事
2. Whether one spends an income extravagantly or stingily is of no concern to one's relatives (cousins, uncles
我要怎麼花我賺來的薪水，親戚們都無權過問
3. One need not worry about what the neighbors say about whom one should marry
我與誰戀愛或結婚是出於自己的意願，因此無需在意街坊鄰居怎麼說
4. When deciding what kind of education to have, I would pay absolutely no attention to my uncles' advice
我考慮接受何種教育時，是不需理會長輩們的意見
5. I can count on my relatives for help if I find myself in any kind of trouble
如果我惹上什麼麻煩事，親戚一定會幫忙
6. When deciding what kind of education to have, I would definitely pay attention to the views of relatives of my generation
在我決定要接受何種教育或做何種工作時，我一定會考慮同輩親戚的意見
7. I am often influenced by the moods of my neighbors
我常常受到鄰居的情緒影響
8. My neighbors always tell me interesting stories that have happened around them
我的鄰居會和我分享他們在生活中遇到有趣事情
9. I don't really know how to befriend my neighbors
我不大懂得如何跟鄰居打交道
10. My neighbors have never borrowed anything from me or my family
我們家鄰居從來沒有向我或家人借用東西
11. I am not interested in knowing what my neighbors are really like
我沒有興趣知道左鄰右舍究竟是怎樣的人
12. I have never chatted with my neighbors about the political future of this state
我從來沒有跟鄰居談過目前的政治情況或議題
13. One needs to be cautious when talking with neighbors, otherwise others might think you are nosy
和鄰居談話要小心，不然大家會認為我好管閒事
14. I enjoy meeting and talking to my neighbors every day
我喜歡每天和鄰居們見見面、聊聊天

Inventory of Parent Attachment

1. My parents respect my feelings
我父母尊重我的感覺、感受
2. I wish I had different parents
如果可以選擇的話，我希望其他人來當我父母
3. My parents accept me as I am
我父母接納我的本質；我父母接納我就是現在這個樣子
4. My parents sense when I'm upset about something
當我沮喪的時候，我父母親能感覺得出來
5. Taking over my problems with my parents makes me feel ashamed or foolish
跟我父母討論我的問題(麻煩或困擾)讓我覺得很丟臉且愚蠢
6. I get upset easily at home
我在家裡很容易覺得沮喪
7. My parents have their own problems, so I don't bother them with mine
我父母本身有很多問題要解決了，所以我不想再麻煩他們來想我的問題
8. My parents help me to understand myself better
我父母幫助我更了解我自己
9. I tell my parents about my problems and troubles
我會告訴我的父母親當我遇的問題以及麻煩
10. I feel angry with my parents
我對我的父母親感到不滿、生氣
11. I don't get much attention at home
我在家裡得到的注意力很少
12. My parents encourage me to talk about my difficulties
如果我父母知道我有煩惱，他們會問我那是什麼

Inventory of Peer Attachment

1. I like to get my friends' point of view on things I'm concerned about
當我想事情的時候，我喜歡考慮我朋友們的觀點
2. Taking over my problems with my friends makes me feel ashamed or foolish
跟我的朋友討論我的問題，會讓我覺得很丟臉以及愚蠢
3. I wish I had different friends
我希望我的朋友不是現在的這些人
4. My friends encourage me to talk about my difficulties
我朋友鼓勵我多談我遇到的困難
5. I feel alone or apart when I am with my friends
當我和朋友在一起時，我會感覺到孤單或被隔離
6. My friends listen to me what I have to say
我朋友常常傾聽我的想法
7. I feel my friends are good friends
我覺得我的朋友都是好的朋友
8. When I am angry about something, my friends try to be understanding
當我對一些事情感到生氣的時候，我的朋友會嘗試了解我的感受
9. My friends are concerned about my well-being
我的朋友關心我的身心健康
10. I get upset a lot more than my friends know about
我比我朋友所知道的我還容易沮喪
11. It seems as if my friends are irritated with me for no reasons
我朋友好像沒有理由的對我感到厭煩
12. I tell my friends about my problems and troubles
我會告訴我的朋友我的問題與麻煩

Items for the Psychological Inventory of Ego Strength (PIES)

1. When I think about the future, I feel optimistic
我對未來的事物感到樂觀
2. If there is something I choose to do, I am determined to do it
我如果選擇要做什麼事情，我一定會下定決心去做它
3. When I think of my future, I see a definite direction for my life
當我思考我的未來時，我很清楚我的人生方向
4. I know I have skills to carry out various tasks and the responsibilities is important to me
我知道我有能力可以承擔許多(對我而言)重要的工作與責任
5. I believe in being true to myself and others
真誠面對幾的感受以及對待他人是我一貫的信念
6. I have experienced feelings of love with someone outside of my family
我曾經愛過家人以外的其他人
7. When I know someone is having a difficult time, I really feel concerned about them
當我知道某人身處困境時，我會由衷地想要去關心他
8. I can accept the fact that I've made mistakes in my life
我能接受我曾經犯過錯誤的事實
9. When things don't go my way, I remind myself of the positive things in my life
當遇到不如意的事情，我總是提醒己看事情的光明面
10. I am able to follow through on a task until it is completed
我通常能夠按照既定的時間表把工作或功課完成
11. Even though I'm sometimes afraid of failing, if there's something I want to do try to do it
儘管有時候我會害怕失敗，我還是會試著去做自己想做的事情
12. I like to work to make things happen
我喜歡努力工作，好讓自己的夢想實現
13. I stand up for the people and causes that are important to me
我支持、力挺那些對我而言很重要的人或事
14. My friends and I believe we can disagree on things and still be friends
朋友和我都相信我們可以有意見不合的時候，但是我們仍然是朋友
15. When I see someone with a need, I help in whatever way I am able
當我看到別人有需要幫忙時，我會盡量去幫忙
16. I may have difficult times ahead, but I'll try to face them with courage
也許未來我可能面臨一些艱難的挑戰，但我會勇敢的面對它們
17. When I feel really down, I have a hard time believing that things are going get better
當我情緒低落的時後，我很難說服自己事情會有好轉的可能性

18. It doesn't matter what I do, it's not going to change anything
不管我怎麼努力，事情(狀況)都不會有所改變
19. I really don't know what I want out of life
我不知道自己的人生目標是什麼
20. Most people just seem more capable than me
大部分的人似乎都比我有能力
21. I find that my opinions are frequently influenced by others
我發現自己的想法很容易受到他人所影響
22. I don't think I have really loved anyone outside of my family
我不認為我真正的愛過家人以外的人
23. Beyond my closest friend and family, I'm not that concerned about the needs of other people
除了我要好的朋友和家人之外，我不會關心其他人的需要
24. I can't seem to forgive myself for a lot of things I've done in the past
我對於自己過去犯的錯誤不太能釋懷
25. When something doesn't work out the way I had hoped, it makes me feel like just quitting everything
如果遇到不如意的事情，會讓我想要放棄正在做的一切事情
26. Sometimes I feel as if I can't control my behavior
我覺得我有時候行為會有點失控、衝動
27. Fear keeps me from striving for many of my goals
對於失敗的恐懼，會阻礙我為自己的目標/理想而努力
28. I avoid tasks that might require much of my time and energy
我會避免做需要消耗大量時間體力的事情
29. I prefer to be free-floating without making commitments to other people or things
我喜歡不被束縛的感覺，所以我不喜歡對人、對事負責
30. When I am in a close relationship with someone, I tend to lose sight of my interests and goals
當我與某人發展較為親密的關係時，我會傾向忽略自己的興趣和需要去配合或取悅納人
31. I don't have time to deal with other people's problems
我真的沒時間去處理別人的問題
32. I look forward to the future
我期待未來，我對未來抱著無限的希望

CURRICULUM VITA

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Education

- 08/06-present **Doctor of Philosophy in Family and Human Development, Utah State University**
 Dissertation: Taiwanese Adolescent Psychosocial Development in Urban and Rural Areas
- 09/03-07/05 **Master of Arts in Sociology, National Chengchi University**
 Master Thesis: Maternal Parenting Practice on Adolescent's Academic Achievement-the Moderate Effect of Marital Discord
- 09/98-06/02 **Bachelor of Arts in Education, Taipei Municipal Teacher College**
 (Formerly called Taipei Municipal University of Education)
 Honors Thesis: The Factors of Adolescents' Depression and Suicide

Research Experiences

- 08/06-present **Part-Time Research Assistant, Utah State University.**
 Supervisor: Troy Beckert, Ph.D.
- Provided literature review for cognitive autonomy and self-reliance
 - Collected data in Taiwan
 - Entered raw data and cleaned datasets
 - Conducted data analyses including chi-square tests, (multivariate) analysis of variance/covariance, logistic regression, multinomial logit regression, path analysis, confirmatory factor analysis, structural equation modeling, latent class analysis
 - Prepared conference presentations
 - Coauthored research projects and manuscripts
- 07/05-06/06 **Full-Time Research Assistant, Academia Sinica in Taiwan.**
 Supervisor: Yuh Huey Jou, Ph.D.
- Performed statistical analysis using LISREL, HLM, MPLUS
 - Conducted structure equation modeling and model comparisons
 - Reviewed literature about marital discord, interpersonal communication, intergeneration transitions

Research Experiences (*Continued*)

- 10/02-07/05 **Part -Time Research Assistant**, Academia Sinica in Taiwan.
Supervisor: Chyi-In Wu, Ph.D.
- Recruited and contacted interviewers and participants
 - Coded and entered questionnaires into SPSS files
 - Cleaned dataset by logical checks
 - Interviewed the youth participants with professors
 - Certificated the idea of context of human development by using data of Taiwan Youth Project
 - Performed structure equation modeling and model comparison using LISREL
- 04/04-08/04 **Part-Time Research Assistant**, Department of Sociology, National Chengchi University
Supervisor: Ping-Yin Kuan, Ph.D.
- Cleaned the dataset by logical checks
 - Interviewed members of different religious groups by phone
- 07/02-06/03 **Full-Time Student Teacher**, Taipei Municipal Shi-Pai Elementary School
Supervisor: Susyan Jou, Ph.D.
- Conducted action research
 - Reviewed literature of current and past research in teaching methods
 - Designed and developed curriculum and activities for students
 - Interviewed and consulted students
 - Data entry, data cleaning, and statistical analysis for colleagues
- 04/01-08/01 **Part-Time Research Assistant**, Taipei Municipal Teacher College,
Supervisor: Susyan Jou, Ph.D.
- Entered data
 - Performed statistical analyses using SPSS

Volunteer Experience

- 03/01-08/01 Volunteer in the Psychiatry Department in Taipei Veterans General Hospital
- Assisted adolescence patients' school work in hospital once a week
 - Had conversations with adolescent patients

Memberships in Academic Associations

- 01/10- Present Member of National Council on Family Relations (NCFR)
02/07- 12/09 Member of American Sociological Association (ASA)
12/03- 12/05 Member of Taiwanese Sociological Association (TSA)

Refereed Publication

Lee, C., Beckert, T., & Goodrich, T. (2009). The relationship between individualistic, collectivistic, and transitional cultural value orientations and adolescent autonomy and identity status. *Journal Youth and Adolescence*. doi: 10.1007/s10964-009-9430-z

Manuscripts in Progress

Beckert, T, Lee, C., & Vaterlaus, M. (in progress). Differences in adolescent cognitive autonomy with Caucasians and Taiwanese.

Higginbotham, B., & Lee, C. (in progress). Economic strain, social emotional behaviors, and marital outcomes: A test of Conger's model with remarriage sample.

Lee, C, Beckert, T., Wu, C., & Kuan, P. (under review). The impact of parental marital discord on adolescents' academic achievement: The mediating or moderating effect of maternal parenting practices?

Lee, C., Norton, M., & Steffens, D. (in progress). Typologies of late-life depression in a population-based sample: The Cache County study.

Professional Presentations

Beckert, T., Davis, E., McFarland, J., Lee, C., Teemant, B., & Tulane, S. (2010, March). Relationship between emerging adult psychosocial development and cell phone text messaging behaviors. Society for Research in Adolescence, Philadelphia, Pennsylvania.

Beckert, T., Davis, E., Teemant, B., McFarland, J., Lee, C., & Tulane, S. (2010, February). College students' attitudes regarding socially appropriate cell phone texting behaviors. American Association of Behavioral and Social Sciences, Las Vegas, Nevada.

Lee, C., & Beckert, T. (2010, February). Differences between Caucasian and Taiwanese adolescents' cognitive autonomy. American Association of Behavioral and Social Sciences, Las Vegas, Nevada.

Lee, C., Beckert, T., & Goodrich, T. (2009, August). Taiwanese adolescent development in urban and rural areas. Presented to the annual conference of American Sociological Association, San Francisco. Also serving as a presider for the Children and Youth Roundtable Session of the 2009 ASA Meeting.

Professional Presentations (*Continued*)

- Lee, C., Beckert, T., Tulane, S., & Teemant, B. (2010, March). Differences in adolescent cognitive autonomy with Caucasian and Taiwanese youth. Society for Research in Adolescence, Philadelphia, Pennsylvania.
- Tulane, S., Beckert, T., Lee, C., & Teemant, B. (2010, February). Effectiveness of graduate teaching assistants from perspectives of instructors, students, and teaching assistants. American Association of Behavioral and Social Sciences, Las Vegas, Nevada.
- Tulane, S., Beckert, T., Lee, C., & Teemant, B. (2010, March). Graduate teaching assistants' utility and knowledge: Instructor, student, and teaching assistant perspectives. Society for Research in Adolescence, Philadelphia, Pennsylvania.

Non-Refereed Publication

- Lee, S., & Lee, C. (2002). Professional autonomy of teachers in Taiwan society. *Journal of Shi-Lin High School of Commerce*, 1,13-23.

Technical Papers (Unpublished)

- 2001
(Solo Author) The factors of adolescents' depression and suicide. The department of social studies education in Taipei Municipal Teacher College and the psychiatry department of Taipei Veterans General Hospital.
- 2002
(4th Author) An Action Research of Flow Learning Field Trip about Kangdu Nature Park Field trip in Taiwan. The Shi-Pai Elementary School, Taipei, Taiwan.
- 2003
(2nd Author) Developmental Instructional Assistance in English program. In Shi-Pai Elementary school, Taipei, Taiwan.

Teaching Experiences

- 01/10- Present **Teaching Assistant, Utah State University**
Supervisor: Jeffery Dew; Course: Marriage and Family Relationships (FCHD 2400)
- Respond to students' questions and emails
 - Grade papers and provide feedbacks
 - Provide lectures

Teaching Experiences (Continued)

- 08/09-12/09 **Teaching Assistant, Utah State University**
Supervisor: Troy Beckert; Course: Human Development (FCHD 1500)
- Responded to students' questions and emails
 - Graded papers and provided feedback
 - Facilitated study sections
- 09/09-10/09 **Gradate Instructor, Utah State University**
Supervisor: Troy Beckert; Course: Adolescence (FCHD3530)
- Developed and delivered lectures for a undergraduate course
 - Responded to students' questions and emails
 - Guided student paper writing
- 01/08-05/08 **Teaching Assistant, Utah State University**
Supervisor: Troy Beckert; Course: Adolescence (FCHD3530)
- Graded papers and discussion board activities in Blackboard
 - Delivered lectures and provided study sessions
 - Responded to students' questions and emails
- 08/07-12/07 **Teaching Assistant, Utah State University**
Supervisor: Elizabeth Fauth; Course: Human Development (FCHD1500)
- Delivered lectures and graded papers
 - Responded to students' questions
- 08/06-05/07 **Teaching Assistant, Utah State University**
Supervisor: Deborah Ascione; Course: Marriage and Family Relationships (FCHD2400)
- Graded papers
 - Performed library searches for course lectures
 - Delivered lectures
- 09/04-02/05 **Substitute Teacher, Taipei Municipal Ming-Dao Elementary School**
- Taught English in first, third, fifth and sixth grade classrooms
- 07/02-06/03 **Student Teacher, Taipei Municipal Shi-Pai Elementary School**
- Taught children in first, forth, and sixth grade; Taught Chinese (Mandarin), Mathematics, & Social Science
 - Prepared curriculum and activities for students
 - Attended frequent research and studying groups

Methods and Statistics Coursework

Course Name	Grade
Introduction to Educational and Psychology Research Methods (PSY6570)	A
Research Methods (FCHD 6030)	A
Longitudinal Methodology (FCHD 6500)	A
Research Design and Analysis I (PSY6600)	A
Research Design and Analysis II (PSY7610)	A
Advanced Psychometric Models and Methods (PSY7810)	A
Research and Evaluation Methodology Program Seminar (PSY7090)	P
Qualitative Methods in Family Research (FCHD7900)	A

Award

2008-2009	<p>Brent C. & Kevon Miller Award</p> <p>An award for a graduate student in Family, Consumer, and Human Development (FCHD) Department whose specialization is marriage, family, or adolescent development, and who demonstrates academic achievement, and personal integrity.</p>
2008-2009	<p>Dr. Dinesh and Kalpana Patel Doctoral Graduate Fellowship</p> <p>A fellowship for underrepresented minority and international doctoral students.</p>
2009	<p>Travel Support from School of Graduate Studies</p> <p>Financial support for traveling to present research at annual conference of American Sociological Association (ASA).</p>
2009	<p>Travel Support from Department of Family, Consumer, and Human Development</p> <p>Financial support for traveling to present research at annual conference of American Sociological Association (ASA).</p>
2010	<p>Travel Support from School of Graduate Studies</p> <p>Financial support for traveling to present research at biennial meeting of Society of Research on Adolescence (SRA).</p>
2010	<p>Travel Support from Department of Family, Consumer, and Human Development</p> <p>Financial support for traveling to present research at biennial meeting of Society of Research on Adolescence (SRA).</p>