

**A Study of Correlates of Life Satisfaction among Older People
in Putian, Fujian, China**

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of the Requirement for the Degree of
Doctor of Philosophy
in
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中國福建莆田老年人生活滿意度之影響因素的研究

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Abstract

The present study is to examine the factors correlated significantly with life satisfaction among older people in China. The patterns of correlates of life satisfaction for two groups of respondents with different *hukous* are also examined. The study adopts a quantitative research method. The sample involves 532 older people aged 60 and over in Putian, Fujian, China, 269 with a non-agricultural *hukou* and 263 with an agricultural *hukou*.

Based on human ecological model proposed by Bronfenbrenner's (1979, 2000), the researcher identifies some potential correlates of older people's life satisfaction within three levels, i.e., individual, interpersonal, and cultural levels. The individual level variables include sex, age, marital status, *hukou*, education, finance, and health. The interpersonal level variables include leisure activity participation, informal social support, and intergenerational relations. The cultural level variables include the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity.

The results of bivariate analyses indicate that all independent variables in three levels are correlated significantly with life satisfaction of older people. The results of hierarchical regression analysis demonstrate that financial strain, leisure activity participation, satisfaction with social support, family harmony, filial support, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity are correlated significantly with life satisfaction of older people.

For two groups of respondents with different *hukous*, correlation analyses indicate that all independent variables in three levels are correlated significantly with life satisfaction

respectively. Regression analyses reveal that filial support, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity are significant predictors of life satisfaction for both groups of respondents. However, the variables of annual income, leisure activity participation, satisfaction with social support, and filial discrepancy are significant predictors for the respondents with an agricultural *hukou*. The variables of financial strain and self-perceived health are significant predictors for the respondents with a non-agricultural *hukou*.

The present study contributes to our understanding of the correlates of life satisfaction among older people as follow. First, the study seeks to extend beyond previous studies by including measures of *hukou*, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural belief about adversity. The findings show that older people with a non-agricultural *hukou* have higher life satisfaction than their counterparts with an agricultural *hukou*. The findings also demonstrate that the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity are significant predictors of life satisfaction among older respondents. Second, the findings of the present study indicate that ecological model can serve as a useful theoretical framework to examine the correlates of life satisfaction among older people. Based on the findings, the significance and implications of the study as well as the limitations of the present study are also addressed.

摘要

本篇論文研究影響中國老年人生活滿意度的因素，並且比較了影響農業和非農業戶口兩組不同老年人生活滿意度的因素。本研究採用定量的研究方法。研究者在中國福建省莆田市訪談了 532 位年齡 60 歲及以上的老年人，其中 269 位為非農業戶口的老年人，263 位為農業戶口的老年人。

本研究的理論框架是以 Bronfenbrenner (1979, 2000) 的生態模型為範本，研究者對三個層面（個人層面、人際層面、以及文化層面）可能影響老年人生活滿意度的一些因素進行了研究。個人層面的因素包括性別、年齡、婚姻狀況、戶口、教育程度、財政狀況、及健康狀況。人際層面的因素包括休閒活動的參與、非正式的社會支持、及代際關係。文化層面的因素包括社會互動中有面子的程度以及對中國文化中關於逆境觀念的正面接受。

雙因素統計分析的結果發現，以上三個層面的所有自變項都與老年人的生活滿意度有顯著的相關。層次回歸分析的結果顯示，老年人的財政、健康、休閒活動的參與程度、代際關係、非正式的社會支持、社會互動中有面子的程度、以及對中國文化中關於逆境觀念的正面接受對解釋老年人的生活滿意度有顯著的相關。

對於兩組不同戶口的老年人，雙因素統計分析的結果發現，研究者在本研究中所要探索的所有自變量都與因變數即老年人的生活滿意度有顯著的相關。回歸分析的結果顯示，子女的支持、社會互動中有面子的程度、以及對中國文化中關於逆境觀念的正面接受對與兩組老年人的生活滿意度有顯著的相關。不過，對於農業戶口

的老年人，年收入、休閒活動的參與程度、對社會支持的滿意度、及對子女的支持期望和現實的差異與他們生活滿意度有顯著的相關。對於非農業戶口的老年人，財政壓力、及自評健康狀況與生活滿意度有顯著的相關。

本項研究對於人們理解老年老年人生活滿意度的影響因素作出了以下的貢獻。

第一、本研究提出了三個可能影響中國大陸地區老年人生活滿意度的新因素，即戶口、社會互動中有面子的程度、以及對中國文化中關於逆境觀念的正面接受。研究結果發現非農業戶口的老年人的生活滿意度比農業戶口老年人的生活滿意度更高，研究結果也顯示社會互動中有面子的程度以及對中國文化中關於逆境觀念的正面接受對解釋老年人的生活滿意度的變異量作出了貢獻。第二、本項研究也表明生態系統模型在研究影響老年人生活滿意度的因素方面可作為一個有用的理論框架。基於研究發現，研究者也論述了本項研究的對於社會工作實踐和未來研究等的啟示，並指出了本項研究的局限性。

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Chapter one: Introduction

The present study examines the correlates of life satisfaction among older people in mainland China. The study not only looks at the factors which have been examined by other academics such as activity participation, informal social support, and intergenerational relations, but also introduces and examines three new factors, i.e., *hukou* (户口), the degree of having *mianzi* (面子) in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity. With reference to ecological perspective and Bronfenbrenner's (1979, 2000) ecological model, the researcher examines three levels of correlates of life satisfaction among older people. The three levels are individual, interpersonal, and cultural levels. In this chapter, the researcher will first describe the rationale of the present study. The research focus and method and the organization of the present study are then addressed. The chapter ends with a brief summary.

The rationale of the study

The present study is conducted due to the following reasons. First, the researcher is concerned about social work practice with the elderly and hopes to provide some empirical information related to or useful for social work practice with the elderly in mainland China. Social work is a caring profession. It was suggested that “[c]aring that makes people comfortable and helps them cope with their limitations is frequently the most valuable services a social worker can provide (Morales, Sheafor, and Scott, 2007: 40). It is also stated that the mission of social work is “to enable all people to develop their full potential, enrich their lives, and prevent dysfunction” (IFSW, 2000). The process of individual aging

occurs with biopsychosocial changes (Neuhaus and Neuhaus, 1982; Atchley, 2000; Niccum, 2004; Ambrosino, Heffernan, Shuttlesworth, and Ambrosino, 2005; McInnis-Dittrich, 2005). The changes include the decreasing effectiveness and efficiency of the body's immune system and nervous system, the reduced capacity to mobilize physical energy, shorter stature, lessened mobility and coordination, and the decreasing opportunities for formal socialization and so on. How to help older people cope with various losses associated with aging and make them satisfied with lives is obviously one of concerns for professionals working with older people in mainland China and other countries as well. Research is necessary and important to examine the factors associated with life satisfaction of older people, so that our social workers and other professional working with the elderly may be able to work effectively and efficiently to make older people satisfied with lives.

Second, life satisfaction is one of important research issues in social gerontology. Cohen-Mansfield (1996) pointed out that research on the determinants of well-being and its related concepts in older people has occupied a central role in the area of gerontological studies. Westerhof, Dittmann-Kohli, and Thissen (2001) argued that life satisfaction is one of the most important criteria for describing aging process, even at the cost of neglecting other constructs. Atchley (2001a) stated that "How do we know when a person has aged successfully? Both activity theorists and disengagement theorists agreed on one thing. Life satisfaction was the best criteria for measuring social and psychological adjustment" (p.11). Salamon (1988) also pointed out that life satisfaction is a construct universally accepted as a valid measure of quality of life in the elderly. In addition, Daatland (2005) stated that in gerontological studies, life satisfaction has often been used as an indicator of adjusting to their aging process; the high levels on it were taken as indication of successful aging. In

Western societies, many theories such as activity theory and disengagement theory have been developed to explain life satisfaction of older people. However, are these theories also applicable in mainland China? The study of the correlates of life satisfaction among older people in China can serve to test some research findings in Western societies.

Third, Wong, Wong, and Mok (2006) suggested that life satisfaction have the policy goal that has the potential of constraining the unending demand for social welfare. They indicated that promoting the subjective well-being of people is one of the goals of social policy and argued that the linking of social policy to the study of life satisfaction has significant policy implications, because happy, fulfilled, satisfied, and engaged citizens are indicators of a thriving society. George (2006) also indicated that social indicators research bases on the assumption that monitoring subjective well-being and other population parameters within societies is useful for determining the extent to which societies meet the needs of their members and exploring subgroups whose needs are not being met, which is relevant to welfare policies in the broadest sense. Based on the above arguments, it seems that empirical research on life satisfaction of older people and the associates of their life satisfaction in mainland China are useful to provide suggestions or implications for social policies which address social welfare of older people.

Fourth, although aging is a universal process, the aging experiences of older people are likely to vary from society to society, culture to culture (Keith, Fry, and Glascock, 1994; Sokolovsky, 1997). In Western societies especially in United States of America, many studies have been conducted to examine correlates or predictors of life satisfaction of older people (Larson, 1978; Mannell and Dupuis, 2007). Regarding aging and older people in mainland China, Li (1995) pointed out that individual life satisfaction and well-being were

rarely addressed. Li argued that “[t]he lack of research on individual life satisfaction and well-being has made it difficult to investigate individual variations in adjustment of later life and various perceptions of situations and events” (p. 18). Although a few studies on life satisfaction of older people in mainland China has been conducted since 1995 (e.g., Zhang and Yu, 1998; 熊躍根, 1999; 賀寨平, 2002; Li, Aranda, and Chi, 2007; Zhang and Liu, 2007), more research on life satisfaction of older people in mainland China is needed to develop a better understanding of individual variations in adjustment of later life.

Research focus and method of the study

The present study is conducted in Putian, Fujian, China (中國福建莆田). The study mainly concerns about the correlates of life satisfaction among older people and aims at developing empirical evidence relevant to social work practice with the elderly in mainland China, especially the city of Putian, Fujian where the present study is conducted. With reference to ecological perspective and especially Bronfenbrenner’s (1979, 2000) human ecology, the researcher identifies some potential correlates of life satisfaction within three levels. The ecological perspective is chosen as a guiding perspective in the present study because it provides a way to view older people from multiple dimensions. The present study adopts the quantitative research method. A cross-sectional survey is used to explore the extents of older people’s satisfaction with their lives and identify the correlates of their life satisfaction.

Organization of the study

The present study is organized in eight chapters. This first chapter addresses the rationale, research focus and method, and organization of the study. The second chapter begins with a brief introduction of life satisfaction and then presents a review of different perspectives which may be applied to study life satisfaction of older people. The third chapter has a review of correlates of life satisfaction in social gerontology. It focuses on activity participation, informal social support, intergenerational relations, and some socio-demographic factors. In this chapter, the researcher also introduces three new factors which are likely to be associated with life satisfaction of older people in mainland China. These three factors are *hukou*, having face in social interactions, and Chinese cultural beliefs about adversity. The fourth chapter elaborates the conceptual framework of the present study and presents the research questions and hypotheses of the study. The fifth chapter describes the research method and procedures used for data collection and analyses in the study. The sixth chapter contains an analysis of research data and presentation of research results. The seventh chapter is the discussions of research findings. The conclusions of the present study are presented in the eighth chapter.

Summary

This chapter briefly addresses the rationale of the study, the focus and research method of the study, and the organization of the study. The present study intends to examine the correlates of older people's life satisfaction in mainland China. It is expected that this research provides gerontological social workers and other related professionals working

with older people with useful information to promote life satisfaction of the elderly in mainland China, especially in the city of Putian where this research is conducted.

Chapter two: Life satisfaction and different perspectives about life satisfaction of older people

Human beings have different sociologic, economic, genetic, behavioral, and biologic characteristics that exert impacts on their lives (Erikson, 1963). There are biological, psychological, sociological, medical, nursing, spiritual, and other perspectives from which aging and old age are studied (Tornstam, 1997, 2000; Atchley and Barusch, 2004; Johnson, 2005; Tabloski, 2006; Blackburn and Dulmus, 2007; Yates, 2007; Schroots, 2007; Marshal and Clarke, 2007; Whitbourne, 2008). Life satisfaction of older people can also be studied from different perspectives. In this chapter, the researcher will first have a brief introduction of the concept of life satisfaction and indicate the reason to adopt life satisfaction instead of subjective well-being, quality of life, or psychological well-being as the dependent variable in the present study. The researcher then has a brief review of some perspectives to study life satisfaction of older people. These perspectives include biological, psychological, social, socio-cultural, and ecological perspectives.

An introduction of the concept of life satisfaction

Questions about good life have captured the minds of the greatest thinkers across time and cultures (Gilhooly, Gilhooly, and Bowling, 2005; Diener and Suh, 1997). For example, the study of happiness has occupied western thinkers since Aristotle (Diener, 1994). Diener also indicated that in recent decades, behavioral scientists have made efforts on the studies of happiness, which refers to various rubrics such as subjective well-being, morale, positive

affect, life satisfaction, and quality of life; the most global concept which incorporates the various terms in the study of happiness is that of subjective well-being. subjective well-being refers to people's evaluation of their own life (Diener and Biswas-Diener, 2008; Diener, Suh, and Oishi, 1997). It was indicated that subjective well-being is central to people's existence and has intrigued thinkers for millennia; however it has been measured and studied in a systematic way since the 1960s (Diener et al., 1997; Diener, 1994, 1984). It was also indicated that the usual method of measuring subjective well-being is through self-report surveys, because it is assumed that the respondents are in a privileged position to report their own experience of well-being (Diener et al., 1997). Subjective well-being encompasses satisfaction with one's life, positive feelings, and the low level of absence of negative feelings (Diener and Lucas, 1999; Diener et al., 1997; Andrew and Withey, 1976).

The satisfaction with one's life is a cognitive judgment about how one's life is going, while positive feelings and the low level of absence of negative feelings are thought to comprise happiness at the level of experience (Diener et al., 1997; Diener, 1994, 1984). Therefore, a person may evaluate his or her life in the form of cognitions. For instance, one may make conscious evaluative judgments about satisfaction with life as a whole, or evaluative judgments about specific aspects of life such as recreation and marriage. A person may also evaluate his or her life in the form of affect. For example, one may report experiencing unpleasant or pleasant moods and emotions about his or her life (Diener, 2000; Diener, et al., 1999; Diener et al., 1997). The cognitive and affective aspects of subjective well-being are interrelated (Diener et al., 1997; Cheng and Chan, 2006b); however, they are also expected to diverge at times due to the fact that life satisfaction is a global measure and affect is a result of ongoing reactions to events (Diener et al., 1997; Diener, 1994;

Pavot and Diener, 1993). In short, subjective well-being includes four independent constructs: positive affect, negative affect, overall life satisfaction, and satisfaction with life domains.

Life satisfaction is defined as “a global evaluation by the person of his or her life” (Pavot, Diener, Colvin, and Sandvik, 1991: 150). Life satisfaction is also regarded as “the subjective experience of pleasure with one’s self, along with others, in relation to past or present social circumstances” (Bell, 1976: 154). Unlike positive and negative affects which are considered to be more variable, the cognitive component of subjective well-being is thought to be a relatively stable construct (Diener, 1994). Pavot and Diener (1993) also argued that affective assessments of subjective well-being may be based on reactions to immediate factors of short duration; whereas life satisfaction is based on a comparison of one’s standards to one’s expectations; thus one may still be satisfied with life when he or she is “down in the dumps”. Based on the above discussions, life satisfaction is conceptualized as making a comparison between one’s actual and preferred life conditions or experiences. It is a cognitive task and is regarded as less affected by immediate experiences tends to be stable over time. It provides a relatively stable and global indicator of one’s subjective well-being. Given the relative stable characteristics of life satisfaction, it tends to be relatively easier to study the correlates of life satisfaction instead of the correlates of affect.

In gerontological studies, it was pointed out that life satisfaction is one of the most common measure of well-being found in the literature about the relationship between aging and various measure of well-being (Silverman, Hecht, and McMillin, 2000; Silverman, Hecht, McMillin, and Chang, 2008). It was also argued that life satisfaction is one of the

most important criteria for describing aging process (Westerhof, Dittmann-Kohli, and Thissen, 2001). Furthermore, life satisfaction is one of the oldest research issues and one of the most well-known constructs in social gerontology (Mannell and Dupuis, 2007). For example, Atchley (2001a) stated that both activity theorists and disengagement theorists regarded life satisfaction as the best criteria for measuring social and psychological adjustment of aging. Given the importance of life satisfaction in the study on social and psychological adjustment of aging, the research on correlates of life satisfaction of older people in mainland China would provide useful information to test research findings and theories about social and psychological adjustment of aging in Western societies.

Some concepts which were sometimes used interchangeably with life satisfaction in the studies on life satisfaction among older people should be noted. George (1979) and Mannell and Dupuis (2007) pointed out that the three concepts of life satisfaction, morale, and happiness were often used interchangeably in social gerontology, but they are different concepts. Life satisfaction is “an assessment of the overall conditions of existence as derived from a comparison of one’s aspiration to one’s actual achievements” (George, 1979: 210). Morale is one’s “mental condition with respect to courage, discipline, confidence, enthusiasm, and willingness to endure hardship” (George, 1979: 210). Happiness is “transitory moods of gaiety or euphoria (Campbell et al., 1976), reflecting the effect that people feel toward their current state of affairs” (George, 1979: 210). Diener (1984) and Robinson, Shaver and Wrightsman (1991) also indicated that happiness is preponderance of positive affect over negative affect with a focus on the affective evaluation of one’s life situation. In short, life satisfaction is the cognitive assessment about one’s life. Morale and happiness are related to affective assessment of one’s mental condition. However, life

satisfaction and subjective well-being were used interchangeably with some other terms in the literature. For example, subjective well-being was used interchangeably with happiness (Veenhoven, 1991a; Diener, Suh, Lucas, and Smith, 1999; White, 2007). Kehn (1995) treated happiness synonymous with life satisfaction. Liang (1982) looked at life satisfaction synonymous with morale. Psychological well-being is also referred to as subjective well-being (Diener, 1984; George, 1981; Phillips, Siu, Yeh, and Cheng, 2005).

Table 2-1 lists some empirical studies on well-being of older people and their dependent variables and operationalization of dependent variables. As we can see the studies listed in the Table, there was a lack of agreement on the measurement of subjective well-being or psychological well-being in the studies of life satisfaction among older people. Life satisfaction was used interchangeably with morale, well-being, or happiness. Although it is acknowledged that different researchers may adopt different approaches in their studies, the lack of agreement on the measurement of well-being is likely to reflect the definition problems of subjective well-being, psychological well-being, or happiness in gerontology. Diener (1994) also pointed out that the definitions of subjective well-being are only implied by the measures adopted by the researchers in most cases and are not often made explicit in the literature. It seems that the use of specific aspects of subjective well-being as dependent variables such as overall life satisfaction, satisfaction with life domains, positive affect, or negative affect may avoid conceptual ambiguity or definition problems about subjective well-being, psychological well-being, or happiness and facilitate the comparison among gerontological studies.

Table 2-1: Operationalization of well-being in some gerontological studies

Studies	Dependent variables	Operationalization of dependent variables
Bultena, 1974	Morale	Life satisfaction
Keith, 1980	Well-being	Life satisfaction
Liang, 1982	Life satisfaction	Morale
Stephens and Bernstein, 1984	Well-being	Life satisfaction
Stock, Okun, and Benito, 1994	Subjective well-being	Morale, life satisfaction, affect balance
Verkatraman, 1995	Subjective well-being	Life satisfaction, depression
Li, 1995	Subjective well-being	Overall life satisfaction and life domain satisfaction
Kehn, 1995	Happiness	Life satisfaction
Adkins, Martin, and Poon, 1996	Subjective well-being	Morale
Shmotkin and Hadari, 1996	Subjective well-being	Morale, delighted-terrible scale, happiness, life satisfaction,
Pei and Pillai, 1999	Sense of well-being	Happiness
Landau and Litwin, 2001	Subjective well-being	Life satisfaction, mental health, and self-reported health
Taylor, Chatter, Hardison, and Riley, 2001	Subjective well-being	Life satisfaction, happiness
Phillips, Siu, Yeh, and Cheng, 2005	Psychological well-being	Positive effect, negative effect
Cheng and Chan, 2006b	Psychological well-being	Life satisfaction, positive affect, negative affect, depression
Litwin and Shiovitz-Ezra, 2006	Well-being	<i>General Health Questionnaire</i> (GHQ-12), life satisfaction, and satisfaction with the use of time

Another concept, which is related to life satisfaction or subjective well-being and should be noted, is quality of life (QoL). George and Bearon (1980) indicated that subjective well-being is a broad term that refers to diverse indicators commonly used to measure various aspects of life quality. Sirgy (1998) regarded the term of overall life satisfaction as synonymous with quality of life. Landau and Litwin (2001) treated subjective well-being synonymous with perceived quality of life. Salamon (1988) pointed out that life satisfaction is a construct universally accepted as a valid measure of quality of life in the elderly.

Veenhoven (1991b) defined life satisfaction as “the degree to which an individual judges the overall quality of his life-as-a-whole favourably” (p.10). Quality of life was also defined as a conscious cognitive judgment of satisfaction with one’s life (Pavot and Diener, 1993).

In short, while there have been many studies on quality of life on older people (George, 2006), there is a lack of consensus about how should quality of life be defined (Lawton, 1991; Bond and Corner, 2004; Gilhooly, Gilhooly, and Bowling, 2005; George, 2006). Lawton (1991) suggested a multidimensional conception of quality of life including behavioral competence, objective environment, perceived quality of life, and psychological well-being for older people. However, it seems that even the conceptualization of psychological well-being remains a problem in gerontology (Ranzijn and Luszcz, 2000; Andrew and Robinson, 1991), let alone the multidimensional concept of quality of life suggested by Lawton (1991). For instance, George (2006) stated that

The competing conceptual framework posits that QoL is a purely subjective assessment of one’s well-being ... Subjective reports of QoL are ascertained using a variety of measures ranging from single-item reports of satisfaction with life to multi-item scales tapping life satisfaction or morale. One of the confusing facets of this conceptualization of QoL is that terms including *life satisfaction*, *subjective well-being* (SWB), and *morale* tend to be used interchangeably (italics in original text, pp. 321-322).

In summary, based on the above discussions, the present study uses life satisfaction as an indicator of older people’s adjustment of aging or the independent variable due the following reasons. First, life satisfaction is a relatively stable construct and thus it appears to be relatively easier to study its correlates. Second, life satisfaction is one of the most important criteria for describing aging process in social gerontology. Therefore, the

research on the correlates of life satisfaction among older people in mainland China would contribute to testing research findings and theories about social and psychological adjustment of aging in Western societies. It also allows and facilitates comparisons between the findings of the present study and those of other previous studies. Third, the constructs such as subjective well-being, psychological well-being, and quality of life are multidimensional concepts; there is a lack of consensus as to how subjective well-being, psychological well-being, or quality of life should be defined and measured in gerontology. Therefore, the application of life satisfaction would avoid definition problems about subjective well-being, psychological well-being, quality of life, or happiness and facilitate the comparison among gerontological studies.

Regarding the satisfaction with life domains, it was noted by Cummins (1996) that “[t]he possible number of domains is large. If each term describing some aspect of the human condition is regarded as separate, then their number is very large indeed” (p. 304). For instance, there were more than 800 life concerns or domains in five studies conducted in the USA with national representative samples in 1965-1971 (Andrew and Withey, 1976). Therefore, the present study focuses on overall life satisfaction of older people.

Because of the relative paucity of research on life satisfaction, subjective well-being, or quality of life in mainland China (Chen and Davey, 2008a; 刘渝琳, 2007; Cheung and Leung, 2004), theories and research in western societies would provide essential grounds for the present investigation. In the following sections, some common perspectives which are useful to the studies of life satisfaction among older people are briefly addressed. However, the relative paucity of research on life satisfaction in mainland China does not mean that the concept of life satisfaction is not relevant to older people in mainland China.

Human beings across time and cultures have made efforts to search for a good or satisfied life (Brown, 1991; Diener and Suh, 1997; Layard, 2003). Many studies on life satisfaction among older people in Chinese societies outside mainland China such as Hong Kong or Taiwan (e.g., 李翊竣 and 齊鈺, 1990; Silverman, Hecht, and McMillin, 2000; Ho, Woo, Lau, Chan, Yuen, Chan, and Chi, 1995; Chou and Chi, 1999; Cheng and Chan, 2006a, 2006b), or life satisfaction among adolescents in Hong Kong (e.g., Shek, Tang, Lam, Lam, and Tsang, 2003; Shek, 2005) imply that life satisfaction is not a concept only relevant to Western societies.

Biological perspective to study life satisfaction of older people

Biological aging is a universal phenomenon and is the foundation for other dimensions of aging. The study of biological aging examines the consequences and causes of the decline of aging body, the physical effects of bodily aging, and the means for preventing, treating, or compensating for illness or disability caused by or related to physical aging (Yates, 2007; Atchley and Barusch, 2004; Digiovanna, 2000). It is summarized that there are aged-related biological changes in dermatological system, neurological system, musculoskeletal system, respiratory system, urinary tract system, endocrine/reproductive system, sensory system, vision, hearing, and taste/smell (McInnis-Dittrich, 2005; Whitbourne, 2008; Digiovanna, 2000). Biological theories of aging attempt to answer such questions: How do cells age? What triggers aging process? There are two perspectives regarding the biological theories of aging: the stochastic perspective and the nonstochastic perspective (Cavanaugh, 2005; Pankow and Solotoroff, 2007; Yates, 2007). The stochastic perspective identifies episodic events that occur throughout an individual's life, causing random damage and accumulating

over time to cause aging. The nonstochastic perspective believes that aging results from a series of programmed events that happen to all organisms in a timed manner. Some biogerontologists also believe that aging is a result of both perspectives (Miquel, 1998).

The theories based on stochastic perspective postulate that aging is driven by a biological clock based on events that occurs within molecules or changes in the level of certain hormones. They posit that each cell has a programmed aging code stored in its DNA (Hayflick, 1984; Yates, 2007). For example, it was identified that changes in hormone secretion, such as the hypothalamus-releasing hormones and the pituitary-stimulating hormones, accelerate the aging process (Rodenbeck and Hajak, 2001). It was also indicated that inborn genetic influences determine physical condition, occurrence of disease, cause and age of death, and other factors which affect longevity (Digiovanna, 2000). Genetic factors are also found to exert impact on people's life satisfaction. Stubbe, Posthuma, Boomsma, and DeGeus, (2005) indicated that individual differences in life satisfaction of adults are determined in part by genetic factors that are largely or entirely non-additive in nature. Lykken and Tellegen (1996) adopted the Well-Being scale of the Multidimensional Personality Questionnaire to assess happiness in 2310 adult twins aged from 20 to 30 years and found that heritability contributes to explain 50 % of variance in happiness. It was also indicated that although research on the genetic influences on successful aging or adaption to aging process is in its infancy, there is evidence for a substantial genetic contribution to successful aging or adaption to aging process (Glatt, Chayavilchitsllp, Depp, Schork, and Jeste, 2007). The review of literature on genetic studies of successful aging by Glatt et al. leads to the following three conclusions. First, people successful adjustment to aging tends to run in families; or at the very least, it is likely that successful adjustment to aging among

one's relatives can suggest a greater propensity for his/her successful adjustment to aging. Second, familial resemblance in adjustment to aging is partly determined by genetic factors which may account for one fifth to one fourth of the individual variability. Third, several specific genes such as APOE, GSTT1, IL6, IL10, PON1, and SIRT3 may have small individual effects on the likelihood of adjustment to aging successfully.

In short, biological studies on aging address aging process at the organism, molecular, and cellular levels (Yates, 2007; Bengtson, Putney, and Johnson, 2005; Digiovanna, 2000). The biological theories intend to explain aging with regard to the changing physiologic processes in the cell, tissues, and body systems. The studies indicate that genetic manipulation exerts influence on life satisfaction of adults and genetic theories are promising in relation to the findings about life satisfaction of older people.

Psychological perspective to study life satisfaction of older people

Psychological aging refers to age-related changes in behaviors that reflect the person's level of maturity and ability to adapt and cope with the stress of life (Schroots, 2007; Neuhaus and Neuhaus, 1982). Psychological theories on aging attempt to answer such questions: Is behavior affected by aging? Do patterns of behaviors change in identified ways during aging process? It has many subfields such as cognitive development, personality development, and social development and many topic areas such as memory, learning, sensation and perception, social psychology, and development psychology (Whitbourne, 2008; Schroots, 2007; Baltes, Freund, and Li, 2005). In this section, some psychological theories are introduced to illustrate the studies on life satisfaction of older people from psychological perspective. The theories include psychoanalytic theory, behavioral theories,

cognitive behavioral theories, cognition and aging theories, personality and aging theories, and humanistic theories.

Psychoanalytic theory

Psychoanalytic theory was developed by Sigmund Freud during the early decades of the 20th century (Belsky, 1999; Deal, 2007; Whitbourne, 2008). The theory indicates that our basic personality is formed in early childhood and remains relatively stable throughout our adulthood. Freud believe that personality have both conscious and unconscious aspects. Unconscious aspect of personality is the most important determinant of human behavior. Freud also proposed that personality has three components, i.e., id, ego, and superego. The id is the mass of instincts, wishes, and needs we have when we are born. The ego is the largely conscious and reality-oriented executive of personality. Ego functions involve logic, reasoning, and planning and getting what we want in an appropriate way. It is formed when children realize that their needs cannot be immediately satisfied. The superego is mainly unconscious. It is a symbolic internalization of parental and societal prohibitions, norms, and ideals and includes one's ego ideals, spiritual goals, and conscience. Freud believed that we learn the requirements of being human during early childhood (Belsky, 1999; Whitbourne, 2008). According to Freud and his follows, parents are responsible for one's ego development and for one's lifelong mental health. If one's parents are empathetic and sensitive during his or her childhood, he or she will develop a strong ego which facilitates him or her to adapt to the crisis of life. Otherwise, one's ego formation may not be optimal and are likely to develop problems when encountering the stress.

“In general, psychodynamic theory assumes that symptom and maladaptive patterns of relating reflect underlying conflicts that have their origin in conflicted relationship with significant others in the past” (Nishizono, Docherty, and Butler, 1993: 132). It was also indicated that during the 1960s and 1970s, psychodynamic theories fell out of favor and psychodynamic principles which explained human behaviors were criticized as deterministic and resulting in blaming the victim (Deal, 2007; Goldstein, 1995). Freud did not directly comment on life satisfaction among older people. However, there are a few studies which test the effectiveness of psychodynamic treatment or support the validity of key psychodynamic theoretical concepts (Deal, 2007). Regarding the empirical research which used psychodynamic theory and examined life satisfaction, Vaillant’s (1993) longitudinal study revealed that the use of mature ego defenses was associated with better mental health, psychosocial adjustment, and life satisfaction, independent of gender, social class, and education.

Behavioral theories

Behavioral psychology, known as behaviorism, is based on the idea that all behaviors are learned or acquired through conditioning. Advocated by psychologists such as John B. Watson and B.F. Skinner, behavioral theories dominated psychology during the early half of the twentieth century (Leahey, 1994; Krasner, 1994). Behavioral theories assume that a man is much like an animal and attempt to explain animal and human behaviors entirely in terms of observable and measurable responses to environmental stimuli (Belsky, 1999; Leahey, 1994). Behavioral theories maintain that the environment acts upon people to make them behave the way they do. In other word, in the behaviorist view, people’s

responses or behaviors result from environmental forces or causes (Leahey, 1994). Behaviorists emphasize nurture, i.e., the environment. They believe human actions are determined by outer-world experiences, not by our inherited traits. They have a clear position that behavior is predictable and obeys simple laws.

Behaviorists believe that there is not a defined and age-related change (Belsky, 1999). They hold the view that the principles explain how a child functions explain the functioning of an older person. According to behaviorism, all learning occurs through classical and operant conditioning (Belsky, 1999; Leahey, 1994). Classical conditioning is the most primitive type of leaning and involves the action or physiological reactions outside of conscious control. Operant conditioning indicates that responses that are rewarded or reinforced will recur; while responses that are not reinforced will extinguish or disappeared. Thus, behaviorists believe that reinforcement drives all human behaviors. They are basically interested in examining observable behavior by means of systematic manipulation of environmental factors. Based on the arguments of behaviorists, in order to make older people satisfied with lives, certain kinds of reinforcement i.e. to reward older people if they appear to be satisfied with lives may be useful. However, there is little empirical research which applies behavioral theories to study life satisfaction of older people. Perhaps behavioral theories have become less popular in psychology since the 1950s (Leahey, 1994; Krasner, 1994), while a systematic study of a good life or subjective well-being has been started and has received increased interest since the 1960s (Diener et al., 1997; Diener, 1984). This may result in a relative paucity of research which applies behavioral theories to study life satisfaction among older people.

Cognitive-behavioral theories

In the 1960s, many behaviorists realized that classical and operant conditioning is not enough to fully account for human behavior (Belsky, 1999). For example, Bandura (1977) demonstrated that human behavior occurs without getting rewards. People also learn through observational learning or modeling, i.e., by watching and imitating what others do. Bandura argued that most our learning occurs from modeling and we also actively choose the models and behavior we wish to imitate. Bandura's findings were accompanied by other evidence which contradicted the statements of behaviorism (Belsky, 1999). It is obvious that focusing on classical and operant conditioning to study human behavior is inadequate and thus cognitive behavioral psychology appeared.

Cognitive behaviorists follow many principles of behaviorism. They advocate nurture and believe that human behavior is predictable and should be systematically studied to be understood and changed. They also rely on the environment to study behavior and believe that people can change to respond to environmental interventions. However, unlike behaviorists who view human behavior is passively determined by stimuli and reinforcement, cognitive behaviorist admit that inherited traits exist and view people as active agents who shape their own reinforces. Thus, besides studying external events and observable responses, cognitive theorists also study human perceptions about the world (Hayslip and Chapman, 2007; Belsky, 1999). Research indicated older people's perception or evaluation of their situations or conditions exert impacts on life satisfaction. For example, it was found that older people's perceptions concerning social support are much more important than objective assessments of social support in predicting their subjective well-being (Newsom and Schulz, 1996; Chi and Chou, 2001; Siu and Phillips, 2002;

Antonucci and Akiyama, 2007, 1991). It was indicated that perceived health is the best single predictor of life satisfaction for the elderly (Mannel and Dupuis, 2007). Research on life satisfaction of people with spinal cord injury also revealed that individual's fundamental beliefs about his or her ability to cope with life exigencies are correlated with their life satisfaction in both USA and China (Hampton and Marshall, 2000).

Cognition and aging theories

Theories of cognition attempt to explain the aged-related decline in fluid cognitive performance, i.e., the efficiency or effectiveness of performing tasks of learning, memory, reasoning, and spatial ability (Salthouse, 1999). Based on whether the primary determinants are distal or proximal in nature, most theories on aging and cognition can be divided into two categories (Salthouse, 1999). Distal explanations focus on factors that occurred at earlier periods in the individual's life and are responsible for age-related differences evident in the level of cognitive performance. There are two types of distal explanations. One emphasizes changes in the social and cultural environment that might be presumed to affect cognitive performance. Another distal explanation is the disuse perspective. In other words, age-related decline occurs largely due to lack of use, not due to maturationally determined deterioration (Salthouse, 1999). This seems to imply that frequent use of cognitive resources may contribute to one's life satisfaction.

Proximal explanations tend to incorporate specific mechanisms that link theoretical constructs to cognitive performance (Salthouse, 1999). There are different categories of proximal explanations. First, there are strategy-based interpretations, which postulate that with advancing age, there is a shift in the efficiency or effectiveness of the strategies used

to perform particular cognitive tasks. Second, there are specific-deficit explanations, which postulate that age-related differences in the efficiency of particular set of information processing operations or components. Third, there are reduced processing resource explanations, which postulate that many of age-related cognitive differences are associated with an altered operation of one or more cognitive primitives. In short, according to proximal explanations, aging leads to the reduction of processing resources, such as speed of processing or attention capacity. While there is little empirical research based on cognition and aging theories, research indicates that college students high in the need for cognition expressed greater life satisfaction than students low in the need for cognition (Coutinho and Woolery, 2004).

Personality and aging theories

Personality and aging theories focus on the stability and change of personality over lifespan. There are two categories of explanation of age-related change in personality (Bengtson, Putney, and Johnson, 2005). The first category is about development explanations, which were first developed by Freud (Whitbourne, 2008). Erikson's (1963) stages of self or ego development and Loevinger's (1976) stages of ego development will be described to illustrate this category of explanations of age-related change in personality. The second category is about personality trait explanations. They are based on 'big five' factors of personality, i.e., neuroticism, extroversion, openness to experiences, agreeableness, and conscientiousness and postulate that people show a high degree of stability in personality, especially during the latter half of life course.

In terms of the first category of theories, Erikson (1963) proposed that individuals pass through a series of eight stages in which they are particularly sensitive or vulnerable to a complex interaction of biological, psychological, and social forces characteristic of their period of life. In his theory, each stage of development is defined as a crisis in which particular stage-specific issues present themselves as challenges to the individual's ego. The seventh developmental stage of Erikson's theory, i.e., generativity versus stagnation, people have an innate need to contribute to society in middle to later adulthood. An empirical study in Australia based on the seventh stage of Erikson's development theory found that many older people performed a range of generative activities within the community and these activities contributed to a positive experience of aging (Warburton, McLaughlin, and Pinsker, 2006). The final stage of Erikson's theory is later adulthood. The crisis represented by this last life stage is integrity versus despair. Erikson proposes that this stage begins when the individual faces psychosocial issues related to aging and experiences a sense of mortality. This final life crisis manifests itself as a review of the individual's life-career. The outcome of this life-career reminiscence can be either positive or negative. Ego integrity is the result of the positive resolution of the final life crisis. Ego integrity is viewed as the key to harmonious personality development; the individual views their whole of life with satisfaction and contentment. On the other hand, despair is the result of the negative resolution or lack of resolution of the final life crisis. This negative resolution manifests itself as a fear of death, a sense that life is too short, and depression (Whitbourne, 2008). Therefore, according to Erikson's (1963) statement, older people have to deal with the development crisis of integrity versus despair, and strive to seek meaning

and purpose in their lives. Mehta (1994, 1997) also asserted that the reality of impending death provides the impetus for older people to engage in the process of integration.

Loevinger's (1976) ego development theory is closely related to Erikson's theory. Loevinger suggested that the ego incorporates cognition and mortality as well as the traditional notion of ego or the self. The ego is defined by Loevinger as the structure within personality that attempts to synthesize, master, and interpret experiences. There are six stages in Loevinger's development theory, i.e., conformist stage, conscientious-conformist stage, conscientious stage, individualistic stage, autonomous stage, and integrated stage. In the first stage, people only have basic understanding of self, others, and the reasons for following society's rules. In the second stage, people begin to gain a conscience, or internal set of rules of right and wrong, and start to gain self-awareness as well as understanding the needs and thoughts of others. The third stage involves the development of a true conscience. People are able to comprehend their own emotions and the emotional needs of others. In the fourth stage, people begin to develop an internal set of standards and guidelines for the self. They move toward a point of respecting individuality. In the fifth stage, people become clearer about inner standards. Various personality attributes begin to emerge as the individual's cognitive abilities allow for the recognition of complex causes of the behaviors of self and others. In the last stage, individuals has a clearly sense of self, is able to recognize inner conflicts, and highly values individuality (Whitbourne, 2008).

The second category of trait theories looks at personality as an entity that reflects constitutional or innate predispositions (McCrae, 2002). The trait perspective of personality looks at personality as equivalent to a set of stable characteristic attributes. A trait is a stable, enduring attribute that characterizes one element of an individual's personality. The

main assumption of trait theory of personality is that the organization of these specific personal dispositions guides behaviors (Whitbourne, 2008). Based on the five factor model (or big five) proposed by Costa and McCrae (1978), all the essential characteristics of personality fall into a set of five broad dispositions, i.e., neuroticism, extroversion, openness to experiences, agreeableness, and conscientiousness. People are programmed by these five dispositions to be social, intellectually curious, warm, or concerned about others and living experiences rarely cause personality change (Costa, Herbst, McCrae, and Siegler, 2000). Reis and Gold (1993) suggested that life satisfaction after retirement may be related to personality traits of hardiness, neuroticism, attachment, introversion, and personal flexibility. Research evidence also indicated that life satisfaction is highly correlated with personality traits (Diener, et al., 1997; Zhang, 2000; Heller, Watson, Hies, 2004; Schimmack, Oishi, Furr, and Funder, 2004).

Humanistic theories

Humanistic theories in psychology emphasized the basic goodness of human beings. They began to grow in popularity during the 1950s. Carl Rogers, Abraham Maslow, Gordon Allport, Fritz Perls and Erich Fromm are some of famous humanist theorists (Lawson, Graham, and Baker, 2007). Humanistic psychology focuses on the potential of human beings and emphasizes the importance of growth and self-actualization. Humanistic theorists believe that people are innately good and that people's mental and social problems result from deviations from their natural tendency (Lawson, Graham, and Baker, 2007). Although not specific to aging, some humanistic theories provide useful approaches to study life satisfaction of older people. For example, Maslow's (1970) human needs theory,

a theory of motivation based on a consideration of human needs, has implications for successful aging or life satisfaction among older people. This theory has three assumptions. First, human needs are never completely satisfied. Second, human behavior is motivated by the need for satisfaction. And third, human needs can be classified or categorized based on a hierarchical structure of importance, from lowest to highest. The hierarchy of needs is often represented as a pyramid, with the larger, lower levels representing the lower needs, and the upper point representing the need for self-actualization. Maslow put physical needs which are necessary for maintaining basic human well-being, such as food and drink, into the lowest group of physiological needs. After these needs are satisfied, they are no longer motivators. The second lowest group of needs include the needs for basic security, stability, protection, and freedom from fear. An individual should have all these needs satisfied. Otherwise, these needs become primary motivators for him/her. Above the needs of basic security, stability, and so on, there is a group of needs for belonging and love. The individual attempts to establish meaningful relationships with significant others after the physical and safety needs are satisfied and are no longer motivators. Above the needs of belongings and love, there is a group of esteem needs for self-confidence, status, reputation, fame, glory, and so on. The highest group of needs is self-actualization needs. After an individual satisfied all the previous four groups of needs, he/she feels a need to find himself/herself. Maslow believes that the people would move well in direction of self-actualization, unless the hindrances placed in their way by society.

In short, Maslow's human needs theory highlights the hierarchy of human needs; it suggests that until lower-order basic biological needs are met, people are relatively

unconcerned with higher-order needs. Human need theory implies that individuals maintain or increase their wellbeing if they are able to satisfy their human needs (Diener and Lucas, 2000). According to this theory, it seems impossible for people to be satisfied with life when they experience chronic hunger, danger, or isolation. Some researchers, such as Veenhoven (1991a) also stated that subjective well-being is caused by the satisfaction of basic, universal human needs. Empirical study on life satisfaction also adopt need theory as their theoretical framework and the findings provide support for need theory (e.g., Rodriguez, Látková, and Sun, 2008).

Summary

In summary, the psychological perspective emphasizes individual psychological and social psychological characteristics in explaining life satisfaction of older people. There are different approaches to study aging and old age from psychological perspective. Research in psychology of aging can be guided by a diverse collection of theories. These theories deal with how behavior becomes organized over the course of an individual's life. Each theory provides a useful approach to examine older people's life satisfaction. However, Shrots (2007) indicated that a theory of aging which integrate changes in cognitive and personality functions await development. Perhaps more efforts are needed to develop theories of aging which are more integrated and inclusive, so that older people's life satisfaction may be more comprehensively examined.

Social perspective to study life satisfaction of older people

Marshall (1996) and Marshall and Clarke (2007) pointed out that social gerontologists rarely developed its own multidisciplinary theories, but drew on a broad array of social theories from other disciplines. Social theories of aging attempt to answer such questions as how does a society influence its older people? And how do older people influence a society? Due to the diversity of social theories on aging (Hendricks, 1992; Bengtson, Burgess, and Parrott, 1997; Hendricks and Achenbaum, 1999), role theory, disengagement theory, activity theory, continuity theory, social exchange theory, and political economy of aging theory are introduced to illustrate the studies on life satisfaction of older people from social perspective in this section.

Role theory

Role theory is one of the earliest attempts to explain older people's adjustment to aging. "The term *role theory* refers to an expansive and variegated body of analyses examining the linkages between social organization, culture, and the performances that humans give while engaged in interaction" (Martin and Wilson, 2005: 651). Role theory has been intensively applied to examine the impact of changes on the social system and the individual (Bailey and Yost, 2000). Bailey and Yost also stated that "[f]undamentally, roles are organized behavioral patterns and expectations that attend a given position (hierarchical, functional, or social) or that accompany a specific situation" (p. 2421). Role theory advocates that individuals play a variety of social roles in their lifetimes, such as student, son or daughter, mother or father, wife or husband, businessman or businesswoman,

grandmother or grandfather, and so on. Such roles identify and describe a person as a social being and are the basis of self-concept. The roles are typically organized sequentially, so that each role is associated with a certain age or stage of life (Hooyman and Kiyak, 2005). The core hypothesis of role theory is that our roles define who we are, determine our self concept and affect our behaviors. In the field of aging, it is argued that age alters not only the roles expected of people, but also the manner in which they are expected to play them (Rosow, 1985). Rosow also pointed out that roles become vaguer with aging and thus there is a decrease in self concept with aging process. Old age is the first stage of life with systematic status loss for an entire cohort. In addition, given that people are not socialized to ageing, aging results in role loss and uncertainty. The loss of roles also excludes the elderly from significant social participation and devalues them. Consequently, role loss accompanies the aging process. Aging can be associated with the loss of self-identity and self-esteem. Role may negatively affect older people's life satisfaction. Furthermore, how the role is defined may also affect older people's life satisfaction.

Disengagement theory

Disengagement theory is associated with Cumming and Henry (1961), who examined the cross-sectional data gathered for the Kansas City Study of Adult Life and proposed that gradual withdrawal of older people from work roles and social relationships is both an inevitable and natural process. The theory regards aging as an inevitable, mutual withdrawal or disengagement, because of the awareness of shortness of life, a perception of a decreasing life space, and lessening of adaptive energy (Tobin, 2001). The withdrawal or disengagement results in decreased interaction between the elderly and others in the social

system they belong to. According to the hypothesis of disengagement theory, people become decreasingly involved with the outer world and become more interior in anticipation of death because of the inevitable declines with age. Furthermore, Cumming and Henry suggested that older people's disengagement also sets up the transition of power from old to young. They advocated that certain social institutions may make the withdrawal easy for older people. According to disengagement theory, older people's life satisfaction is positively associated with their social disengagement.

The disengagement theory is the first widely known, comprehensive, explicit, and multidisciplinary theory advanced in social gerontology (Achenbaum and Bengtson, 1994; Hooyman and Kiyak, 2005). However, this theory does not explain the variation, creativity and types of activity that many elderly experience during aging. It gives only one-side view of the aged and does not recognize that many older people do not wish to disengage. It also does not address the severe distress experienced by those elderly forced to withdraw from social contact. Furthermore, it was indicated that empirical evidence did not support disengagement as a common adaptive process of aging (Meldrum, 1999; Boyd, McKiernan, and Waller, 2000).

Activity theory

Activity theory (Havighurst, 1963; Passuth and Bengtson, 1988; 李翊竣, 1988) was initially developed by Ernest W. Burgess in the 1940s and Robert J. Havighurst, Arnold Rose, Bernice L. Neugarten in the 1960s. It is primarily a model for adaptation to retirement (Shaw, Patterson, Semple, and Grant, 1998). Activity theory attempts to answer how individuals adjust to age-related changes, such as retirement, poor health,

role losses, and bereavement. It argues that one's self-concept is related to the roles one hold and with old age comes a loss of roles. It states that in order to maintain a positive sense of self, elderly persons must substitute new roles for those lost in old age. The theory assumes that activity produces successful aging through relationship between activity participation and life satisfaction or subjective well-being.

Activity theory sees old age as a time of potential individual growth and renewed social relationships. It believes that old people's life satisfaction can derive from social interaction and active participation so that the later life can be a positive, creative, and busy time (Schroots, 1996a). It claims successful aging can be achieved by maintaining roles and relationships of middle age and a high level of activity participation enhances personal satisfaction in old age. According to activity theory, in order to maintain a positive sense of self, elderly persons must substitute new roles for those lost in old age. At the same time, it is argued that the more active elderly persons are, the greater their satisfaction with life. Activity theory provides a conceptual justification for the assumption that social activity in and of itself is beneficial and results in greater life satisfaction. There are two hypotheses that are based on activity theory and are widely applied in empirical studies (李翊竣, 1988). One is that older people's life satisfaction has positive correlation with their level of activity. The other is that the role that older people lose directly influences their life satisfaction.

Activity theory is one of the most widely used theories in social gerontology. However, it has some limitations. First, activity theory neglects older people's personality, wealth, health, education, and other variables which may exert impact on both older persons' activity participation and their life satisfaction. Second, activity theory does not identify the

kind of activities most helpful for the elders to develop new roles or maintain roles of middle age. It is possible that being involved in any activity just to remain active may not always contribute to older people's happiness and satisfaction. Third, activity theory emphasizes the importance of maintaining activity participation for older people's life satisfaction, but does not mention and examine the outcome of not maintaining activity participation for older adults. It is possible that some older people may be happier when they can slow down and only do those things that bring them the greatest satisfaction (李翊竣, 1988). Therefore, caution should also be taken to apply the activity theory to examine older people's activity participation and their life satisfaction. Activity theory has been used in many studies on life satisfaction of older people and it was generally found that older people's frequency of activity participation is positively associated with their life satisfaction (e.g., Steinkamp and Kelly, 1987; Christensen, Korten, Jorm, Henderson, Scott, and Mackinnon, 1995; Searle, Mahon, Iso-Ahola, Sdrolas, and Dyck, 1995; Misra, Alexy, and Panigrahi, 1996; Chen, 2001; Silverstein and Parker, 2002; Sparks, Zehr, and Painter, 2004; Nimrod and Adoni, 2006).

Continuity theory

Continuity theory is based on the observation that although there are widespread changes in health, functioning, and social circumstances, many older adults show considerable consistency over time in their pattern of thinking, activity profiles, and social relationships (Atchley, 2001b). It has been advanced since the late 1960s. It intends to explain social aging by paying attention to the social life structure that

individuals develop in interaction with the social environment. According to Atchley (1993),

“Continuity theory, a theory of adult development, which proposes that in making adaptive choices middle-aged and older adults attempt to preserve and maintain existing psychological and social patterns by applying familiar knowledge, skills and strategies. Applied to activities, continuity theory maintains that adults gradually develop stable patterns of activity and that, in adapting to ageing, adults engage in thought and take action designed to preserve and maintain these patterns in their general form” (p. 5).

Continuity theory attempts to explain why most adults show considerable consistency in their patterns of thought, behavior, and relationship when they move through the later stages of life (Atchley, 2001b). Continuity can be both internal and external. Internal continuity refers to persistence of a personal structure of ideas based on memory. External continuity refers to living in familiar environments and interacting with familiar people (Atchley, 2000). The core hypothesis of continuity theory is that central personality traits become more pronounced with age or they are retained without many changes. Continuity theory also contends that most senior people can achieve positive results in their late life because they have developed stable framework of adaptive strategies for ideas, relationships and activities, as a result, most senior persons can adapt effectively to changes associated with ageing (Atchley, 1999). To answer why continuity of values, activities and relationships is a preferred adaptive strategy for most older people, Atchley (ibid) argued that “for most ageing adults the consistent self-schema that underlie internal and external continuity have stood the test of time and continuity of self and behaviour has consistently delivered a significant measure of psychological and social security” (p.118-119). Based on the arguments of continuity theory, most of older people are likely to be satisfied with their

live and those people who maintain a continuous life style may be more satisfied with lives than those who do not maintain a continuous life style. However, there is little empirical research which uses continuity theory to study life satisfaction of older people, probably because such studies require longitudinal investigation. Thorson (2000) also pointed out that it is very difficult to test continuity theory and few studies have been designed specifically to test continuity theory.

Social exchange theory

Social exchange theory postulates that people attempt to minimize their costs and maximize their rewards in interactions (Cook, 1992). Dowd (1975) introduced and extended social exchange theory to examine the experiences of older people. Social exchange theory primarily intends to explain why the elderly withdraw from society. Dowd (1975) argued that there is an unbalanced situation between the costs and rewards of engagement with society, which results in the withdrawal of the elderly from the social system. In this theory, the decision of withdraw from the society is based on an evaluation of the trade-offs between rewards, such as money and social position and costs, such as loss of social status. It was indicated that level of older people's life satisfaction can be maintained or enhanced through balancing this equation (Lynott and Lynott, 1996).

In recent years, many studies on ageing have applied social exchange theory as an explanatory framework, especially the studies on intergenerational social support and transfers (Bengtson, Burgess, and Parrott, 1997). For example, Silverman et al. (2008) integrated social exchange theory and social constructionism to examine the relationships between social networks and their well-being of older people in America and Taiwan.

Furthermore, according to exchange approach, individuals expect their provision of rewards to other people to be reciprocated. In nonfamily relationships, when reciprocity is no longer achieved, the relationships are likely to end. In family relationships, when reciprocity is no longer achieved, the relationships may not end; however, intergenerational conflicts are expected to occur in such a situation (Goode, 1971; Gelles, 1983). For instance, Steinmetz (1983) and Steinmetz and Amsden (1983) reported that physical and psychological abuse of elderly parents are related to unusually high levels of dependency upon adult children. It was also found that parents who feel emotionally close to their children are more satisfied with their lives than distant parents or childless couples (Connidis and McMullan, 1993).

Based on social exchange theory, Bengtson, Olander, and Haddad (1976) and Bengtson and Roberts (1991) also developed a conceptual framework for the study of inter-generational relations: inter-generational solidarity model. This conceptualization of family relations is useful for the studies on relationship between adult children and their elderly parents. It provides a useful perspective to study successful aging or subjective well-being of older people. It was argued that inter-generational relationships contribute to the psychological well-being of the individual throughout the life course (Rossi and Rossi 1990). Ingersoll-Dayton and Antonucci (1988) and Mehta (1999) also suggested that the reciprocity element of support, i.e., the balance between support provided and support received, can be a crucial aspect of subjective well-being. Furthermore, research on the effects of family solidarity on people's coping with widowhood also found that greater family solidarity contributes to better coping and a higher level of wellbeing among older people (Silverstein and Bengtson, 1994).

Political economy of aging theory

The political economy of aging theory, proposed in the late 1970s and early 1980s (Estes, 1979; Townsend, 1981; Walker, 1981; Phillipson, 1982; Estes, Gerard, Zones, and Swan, 1984), has become one of the key theories in social gerontology (Bengtson, Burgess and Parrott, 1997; Walker, 2005). Political economy of aging theory is a diverse field of study, embracing different theories and approaches (Estes and Associates, 2001). The theory argues that ageing and old age should be studied in the context of problems and issues of the larger social order and focuses on social, political, economic, and ideological structures which shape and construct ageing and old age (McMullin, 2000; Estes, 1999).

Political economy of aging theory goes beyond conceptualizing aging as an individual phenomenon and as a problem of individuals in society; it looks at aging in a concrete and dynamic context linking the past, present, and future (Zelkowitz, 1997). This theory mainly concerns with problems of dependency and loss of power in old age, inequalities associated with social class, gender, and race, the impact of demographic change and the relationship between generations, and the influence of globalization on the live of older people (Phillipson, 2005). As stated by Minkler and Estes (1984:11), “[t]he central problem of the political economy perspective is the manner in which the economy and polity interact in a relationship of reciprocal causation affecting the distribution of social goods”. The political economy of ageing has been used to analyze aging and older people in capitalist societies, such as the United States of American (Quadagno, 1989; Pampel, 1994), the United Kingdom (Townsend, 1981; Phillipson, 1982), Canada (Myles, 1984) and Hong Kong (Kam, 2003). It provides a useful approach to understanding and studying the social,

political, economic, ideological factors and structural arrangements that are integral to ageing and old age.

According to political economy of aging theory, people's adaptation to aging or how people age is contingent upon social, economic, ideological, and political structures and forces. In other words, growing old is socially constructed. Social, political, ideological, and economic structures shape people's social status, resources, and so on in the society and exert impacts on their aging and life satisfaction. Therefore, in order to understand older people's life satisfaction, it is necessary to examine the social, political, economic, and ideological structures that shape and construct aging and old age. Regarding the empirical studies on political and social structure and life satisfaction, Bjørnskov, Dreher, and Fischer's (2007) study revealed that discrimination in politics exerts impacts on individuals' well-being. They found that men and women are more satisfied with their lives when societies become more equal. A cross-national study also found that people's life satisfaction is associated with measures often defined as indicators of good governance (Helliwell, 2003). The study by Helliwell and Huang (2006) further confirmed that people's life satisfaction is closely linked with the quality of government. In addition, Cheung and Leung's (2004) study in Beijing revealed that there are significant variations in the effects of the factors in predicting the life satisfaction of people in different social groups.

Summary

In summary, many social theories have been developed to describe and explain ideal outcomes of the aging process since the 1960s. Some theories focus on the level of the

individual in social interaction such as activity and disengagement theory. Some focus on social institutions or large-scale aspects of social structure such as political economy and aging theory. These theories contribute to our understanding of the society's influence on aging and older people. Based on the arguments of these diverse theories, older people's life satisfaction is contingent upon social and political context.

Socio-cultural perspective to study life satisfaction of older people: A case of aging in Chinese culture

Culture is referred to shared beliefs, knowledge, feelings, and objects by anthropologists (Albert, 2007). According to Geertz (1973), culture is "an ordered system of meaning and symbols in terms of which social interaction takes place" (p.144). Culture defines the cosmology of a society and encompasses various knowledge and values that people learn to see as appropriate and desirable. Culture also impacts the status, social settings, living conditions, and personal experiences of older people and influences many of the psychosocial and physical processes of aging (Luborsky and McMullen, 1999). Luborsky and McMullen (1999) also indicated that old age is a cultural construct defined by factors beyond abstract numbers of chronological age.

Social-cultural perspective on aging suggests that changes associated with aging are socially and culturally determined (Teague and MacNeil, 1992). For example, Albert (2007) indicated that American culture stresses discrete stages of adulthood, i.e., education, employment, and retirement. The transition from employment to retirement may be punctuated by a long-awaited indulgence postponed during one's career. In Taiwan, human lives are likened to the growth cycle of rice. Life stages are described as fertility, decay,

and reintegration into the earth. Furthermore, there is a stage of ancestorhood, which is beyond old age and death and is valued. Another comparative study of meaning of a good old age also found that for the older people in Hong Kong, family and social qualities are the most important for a comfortable old age; however, for the older people in United States, being vital, active and involved with others are the signs of a good old age (Fry, Dickerson-Putman, Draper, Ikels, Keith, Glascock, and Harpending, 1997).

Social-cultural perspective on aging emphasizes the importance of culture in aging and old age. This is important for understanding variation in aging and addressing the needs of older people, especially in the assessment, treatment, and service delivery for the older people with different cultural backgrounds (Albert, 2007). Service providers, especially gerontological social workers, should be keen to cultural differences of older people to deliver care and service effectively and efficiently. In short, according to social-cultural perspective on aging, the meaning of a good old age or a satisfied life may be different in different cultural and social contexts. People's adjustment or adaptation to aging and old age is also likely to be different in different cultural and social contexts. Aging in Chinese culture will be introduced to illustrate socio-cultural perspective on aging. A brief description of how aging and old age is defined in Chinese culture, the role of older people in Chinese culture, and a good old age or a satisfied life in old age in Chinese culture is presented in the following paragraphs.

How aging and old age is defined in Chinese culture?

The terms of aging and old age, translated into Chinese, are *Lao* (老). According to Xu Shen's (許慎) *Etymological Dictionary* (《說文解字》), 老 is 耂 (the word root for 毛,

hair) over 匕 (root for 化, transformation) (p. 457). It means that hair is transformed into white color. *The Classic of Rites* (《禮記》), one of five Classics of Confucian canon, describes the aging process as follows:

At fifty, one was supposed to begin to decay; at sixty, not to feel satisfied unless he had flesh to eat. At seventy, he was thought to require silk in order to make him feel warm; at eighty, to need some one (to sleep) with him, to keep him warm; and at ninety, not to feel warm even with that " (Legge, 1967: 465).

Lao also refers to seventy years ("七十曰老") in Xu Shen's *Etymological Dictionary* (p.457). However, a review of literature indicated that there was not a standard for old age; it was generally around 50 years to 70 years in ancient China (高成鸞, 1999). In *The Classic of Rites*, it is also indicated that formal obligation to perform military service ends at the age of sixty (Legge, 1967: 466).

The role of the elderly in Chinese culture

The centrality of the family and the reverence for the elderly are two most basic and important characteristics of traditional China (Redding, 1990; Baker, 1979; Chai and Chai, 1969; Lin, 1939). The family is the most important form of social organization and provides the individuals with a social identity as well as material and emotion security (Sankar, 1981; Redding, 1990). As a social and economic unit, the family is important for the survival of the elderly, which depended on the family for social security system (Redding, 1990; Olson, 1990; Backer, 1979). The family system is also important for

'五十始衰,六十非肉不飽,七十非帛不暖,八十非人不暖,九十雖得人不暖矣。'

understanding traditional Chinese society. Lin (1939) pointed out that “the family system is the root of Chinese society, from which all Chinese characteristics drive” (p. 167).

The family in traditional China is patrilineal. The family descent is through the male side of the family. Male offspring carry on the family name, inherit family property, care for the elders in the family, and produce their own male offspring to carry on the family lineage. The birth of a son therefore is of the greatest importance to a family. Male offspring are necessary to ensure the chain of kin which can be stretched back into the past and is believed to continue into the future. Not having male offspring is regarded as a break of the chain of kin and a failure to fulfill family obligations (Baker, 1979; Chai and Chai, 1969; Lin, 1939). Lin (1939) also stated that the Chinese family system “was so well defined and organized as to make it impossible for a man to forget where his lineage belonged” (p.35).

Besides the patrilineal characteristic, the family in traditional China can also be described as a hierarchical structure, with lower levels representing younger family members. The oldest members of the family are at the top of hierarchy and have highest authority (Jernigan and Jernigan, 1992; Baker, 1979). Such a patrilineal and hierarchical structure of traditional Chinese family is vividly illustrated in one of most famous Chinese novels, *A Dream of Red Mansions* (《紅樓夢》). In this novel, we can see that Grandmother Jia (賈母), the oldest of Jia family in the Rongguo house (榮國府), is the highest living authority and the most respected of the entire Jia clan. Grandmother Jia’s two sons, with Jia She (賈赦) being elder and Jia Zheng (賈政) being younger, have the second highest authority. However, grandmother Jia’s daughter, Jia Min (賈敏), marries Lin Ruhai (林如海) and has little authority or influence in Jia clan.

The philosophical and ethical foundations of the importance of family and reverence for the elderly may be attributed to the teachings of Confucius (Redding, 1990) and Chinese folk religion (Sankar, 1981). Confucius philosophy provides a moral and intellectual foundation for revering older persons in traditional China. According to *The Analects of Confucius* (《論語》), Master Yu (有子), a student of Confucius, said:

Those who in private life behave well towards their parents and elder brothers, in public life seldom show a disposition to resist the authority of their superiors. And as for such men starting a revolution, no instance of it has ever occurred. It is upon the trunk that a gentleman works. When that is firmly set up, the Way grows. And surely proper behaviour towards parent and elder brothers is the trunk of Goodness?' (Waley, 1989: 89).

Based on Confucius philosophy, revering older persons is regarded as basic and appropriate behaviors upon which peace and harmony in social relationships are built. To strengthen the importance of revering older people, the value filial piety (孝) is also established and emphasized in traditional China. Filial piety can refer to a range of behavioral prescriptions, such as showing respect for and being obedient to parent and the ancestors, honoring or promoting their public prestige, producing a male heir to carry on the family line, taking care of the parents, avoiding injury to self because the body belongs to the parent, living with parents, and so on (Raiten, 1999; Chow, 2001; Hsu, Lew-Ting, and Wu, 2001; Ng, Phillips, and Lee, 2002; 李翊竣, 2005). According to *Hsian Ching* (《孝經》), written during the fifth century B. C. as a component of the teachings of Confucius, Confucius said: "in serving his parents a filial son renders utmost reverence to them while at home; he supports them with joy; he gives them tender care in sickness; he grieves at their death; he

有子曰：其為人也孝弟，而好犯上者，鮮矣；不好犯上，而好作亂者，未之有也。君子務本，本立而道生。孝弟也者，其為仁之本與？

sacrifices to them with solemnity¹” (Makra, 1961: 23). Filial piety is believed to be one of the core ethics in Chinese culture (葉光輝 and 楊國樞, 1991; Ho, 1996; Raiten, 1999; 楊國樞, 2006b). Furthermore, the reverence for the elderly is also advocated beyond family level, even the emperor is required to revere the elderly in certain proper way. For example, *The Classic of Rites* states:

At fifty, one keep his staff in his hand in the family; at sixty, in his district; at seventy, in the city; at eighty, (an officer) did so in the count. If the son of Heaven wished to put questions to (an officers of) ninety, he went to his house, and had rich food carried after him² (Legge, 1967: 465).

At the same time, Chinese folk religion also enforces the importance of family in traditional China. The religion advocates that one becomes a hungry ghost wondering alone in the underworld if he or she fails to leave descendents, whom are vital to worship the ancestors after their death (Sankar, 1981). To avoid becoming a hungry ghost, there are also many cultural solutions for people without descendants. For example, unmarried persons or childless couples may adopt children to ensure having descendents to care for them after death; unmarried women may become servants within a family and establish family-like relationships with family members they serve (Sankar, 1981).

In short, aging in traditional Chinese society should be understood within Chinese family system. The family is the basic social and economic unit of traditional Chinese society. Two most basic and important characteristics of traditional China, the centrality of the family and the reverence for the elderly, are interrelated. Older people are

¹ 子曰：孝子之事親也，居則致其敬，養則致其樂，病則致其憂，喪則致其哀，祭則致其嚴。

² 五十杖於家，六十杖於鄉，七十杖於國，八十杖於朝，九十者，天子欲有問焉，則就其室，以珍從。

respected, honored, and cared in the family in traditional China. Both Confucius teachings and Chinese folk religion also enforce the importance of family and reverence for the elderly. As a result, older people tend to enjoy a high social status in traditional Chinese society.

A good old age or a satisfied life in old age in Chinese culture

In Chinese culture, there are different perspectives towards a good life. In this section, the researcher will have a brief description of the perspectives of Confucianism, Taoism, Buddhism, and Chinese folk religion. Confucius's ideal of a good life emphasizes the importance of learning in young age and developing a harmonious inner life as the years went by. As Confucius said:

At fifteen, I set my heart upon learning. At thirty, I had planted my feet firm upon the ground. At forty, I no longer suffered from perplexities. At fifty, I knew what were the biddings of Heaven. At sixty, I heard them with docile ear. At seventy, I could follow the dictates of my own heart; for what I desired no longer overstepped the boundaries of right¹ (Waley, 1989: 88).

At the same time, personal well-being or happiness also consists in pursuing a virtuous life for Confucian. As Confucius said that though the living condition of his disciple Yen Hui (顏回) is very poor, his happiness remains unchanged. Confucius remarked:

¹ 子曰：吾十有五而志於學，三十而立，四十而不惑，五十而知天命，六十而耳順，七十而從心所欲，不逾矩。

Incomparable indeed was Hui! A handful of rice to eat, a gourdful of water to drink, living in a mean street – others would have found it unendurably depressing, but to Hui's cheerfulness it made no difference at all. Incomparable indeed was Hui!' (Waley, 1989: 117-118).

Based on this remark, it seems that what Confucian counts as happiness can be achieved through people's moral capabilities, no matter what kind of circumstance they are situated. Meanwhile, Lin (1939) indicated that Confucius' ideal of happiness also consists of the enjoyment of simple rural life and the harmony of social relationships. He quotes the following poem by Chen Chiju (陳繼儒) who was lived in the sixteenth century to illustrate Confucius' ideal of happiness.

Life is complete
With children at your feet;
Just a handful of hay hides your cot.
If land is sterile,
To make it fertile,
A young calf will surely help a lot.
Teach thy sons to read, too, in spare hours,
Not for fame nor for Mandarin collars.
Brew your wine, plant bamboos, water flowers,
Thus a house for generations of scholars.

¹¹子曰：賢哉，回也。一簞食，一瓢飲，在陋巷，人不堪其憂，回不改其樂。賢哉，回也！

¹²閒居書付兒輩 (清平樂)
(陳繼儒)

有兒事足，
一把茅遮屋。
若使薄田耕不熟，添個新生黃犢。
閑來也教兒孫，讀書不為功名。
種竹，澆花，釀酒；
世家閉戶先生。

To sum up, based on Confucius' ideals of a good life and happiness as well as Confucius' ideal of filial piety, it seems that a good old age consists of being a virtuous person with inner harmony, leading a simple life in a family, having at least one male grandchild, enjoying a place of honor and respect, and having some leisure activities, such as teaching children, planting bamboos or watering flowers.

On the other hand, Taoists criticize the doctrines which suggest any conception of a good life or happiness for people. According to Taoists, the conflicts arise when people develop the conception of a good life or happiness. As Lao Zi (老子) said:

When the people of the Earth all know beauty as beauty,

There arise (the recognition of) ugliness.

When the people of the Earth all know the good as good,

There arises (the recognition of) evil. ⁽¹⁾ (Lin, 1958: 56)

Based on the above statement, the ugliness comes when some standard of beauty is suggested. Therefore, the conflicts appear as people want to reach that standard. This rule is also applicable to the comparison between good and evil, as well as between happy or satisfied and unhappy or unsatisfied. Hence, based on Taoism' perspective, there should not be any conception of a good old age or a satisfied life in old age. As far as one develops certain conceptions of a good old age, a bad old age comes. At the same time, there would be conflicts as people want to obtain a good old age.

Buddhists' perspective of well-being is rooted in spirituality and emphasizes the maintenance of balance between extremes of satisfaction and denial and the adoption of a path of moderation or middle path (Mohan, 2003). Dalai Lama and Cutler (2003) proposed

⁽¹⁾ 天下皆知美之為美，斯惡已。
皆知善之為善，斯不善已。

that “happiness is determined more by the state of one’s mind than by one’s external conditions, circumstances, or events – at least once one’s basic survival needs are met” (p.1). According to Buddhists, frustrations, failure, successes and joys are all considered inevitable in one's life; the essence of well-being is not being overwhelmed by either failure, frustration, joy, or success (Mohan, 2003). Therefore, reducing afflictive desires, practicing meditation, and following a spiritual path are suggested to alleviate suffering and obtain happiness or life satisfaction (Mohan, 2003). Based on the above discussions, it seems that Buddhism’s idea of a satisfied life in old age or a good old age consists of detachment from the desire of worldly goods, and being peaceful in mind or following certain spiritual path.

With respect to Chinese folk religion, it almost brings together practically all aspects of various religions and philosophy in China, such as ancient sacrifices to heaven, earth, and ancestors, moral and ritual values in Confucian tradition, Taoist’s spontaneous oneness with nature, and Buddhist’s way of gaining merits in the present life (Bush, 1977; Harrell, 1977). There are two core characteristics of the Chinese folk religion: worshipping the Heaven and the ancestor and the idea of retribution (Chiu, 1991). Gunde (2002) also stated that “[t]he core of folk religion lies in ancestor worship and cults of local deities” (p.51). Within the worldview of Chinese folk religion, another world exists outside of our immediate experiences. There are spiritual beings of dead ancestors’ spirits and various gods in this other world, which is similar to the world we live in many ways such as the systems of rewards and punishment and the hierarchy of power and position (Jochim, 1986). In Chinese folk religion, different deities have different power. When crisis rises, Chinese people turn to certain deities and make offerings or pray for relief from crisis. However, continual devotion to the deities should be made to ensure the effectiveness of

prayer and offering (Bush, 1977). In Taiwan which shares a similar cultural background with mainland China, Chiu (1991) pointed out that “[t]he believers of the folk religion tend to have very ambiguous concepts regarding the gods they worship. The main reason for worshipping the gods is either to conform to the convention or to confirm the functions of the gods” (p.46). Chiu (1991) also suggested that although Chinese folk religion has been influenced by Buddhism and Confucianism, its believers stress the well-being of actual living and pay little attention to the ultimate concern. In summary, given the hybrid or integration nature of Chinese folk religion, its concept or idea of a good life seems ambiguous and may be a combination of different aspects of the ideas of a good life from Confucianism, Taoism, Buddhism, and others. However, Chinese folk religion has a strong utilitarian orientation. For the older people who believe in Chinese folk religion, it seems that their continual devotion to certain deities may contribute to their life satisfaction or a good life.

In short, there are different perspectives of a good life in Chinese culture. Thus, there are also different perspectives of a good old age. The Confucians’ idea a good old age tends to being a virtuous person with inner harmony, leading a simple life in a family, having at least one male grandchild, enjoying a place of honor and respect, and having some leisure activities such as, teaching children, planting bamboos or watering flowers. Buddhism’s idea of a good old age tends to detaching from the desire of worldly goods and following certain spiritual path. For people who believe in Chinese folk religion, continual devotion to deities seems necessary to maintain a good life. However, Taoists criticize the doctrines which suggest any conception of a good life for people. Chinese folk religion integrates different aspects of various religions and philosophy in China, its idea of a good life is

ambiguous and may be a combination of different aspects of the ideas of a good life from Confucianism, Taoism, Buddhism, and others.

With regards to the empirical studies on life satisfaction in socio-cultural perspective, it was found that culturally different nations have demonstrated variations in reported life satisfaction (Diener, Sandvik, Seidlitz, and Diener, 1993; Veehoven, 1991b). A comparative study of life satisfaction among American, Korean, and Chinese college students revealed that Chinese and Korean students scored much lower than Americans on life satisfaction (Diener, Suh, Smith, and Shao, 1995). Empirical studies on the relationship between Chinese cultural beliefs about adversity and psychological adjustment in Chinese family with economic disadvantages in Hong Kong indicated that adolescents with stronger endorsement of positive Chinese beliefs about adversity displayed better psychological well-being (Shek et al., 2003; Shek, 2005).

Ecological perspective to study life satisfaction of older people

Originally developed in the field of biological science, ecological theory studies the relationship of organism and environment and regards the organism and its environment as an interactive and interdependent system (Germain and Gitterman, 1995; Ekblad, 1996; Germain, 1979). Ecological perspective has gone beyond its biological basis to social basis and focuses more on social, institutional, and cultural contexts of human social interactions. The ecological perspective is directly related to a theoretical framework known as person-environment interaction (William, 1987; Satariano, 2006). William also identified that researchers (e.g., Kantor, 1924; Lewin, 1936; Murray, 1938) have explored the relationships between individuals and their environments and contributed to the theoretical

foundation of interactionism since 1920s. Lewin's (1935) classic equation: $B = f(P \& E)$ elaborates this perspective, which suggests that behaviour (B) evolves as a function of interaction between person (P) and environment (E).

Ecological perspective bases on an adaptive and evolutionary view of people in transaction with their environments (Germain, 1979; Germain and Gitterman, 1996, 1995; Browne and Mills, 2001; Satariano, 2006). It focuses on the multi-dimensional and multi-directional nature of the phenomena. The underlying philosophical position of ecological perspective is that person is connected to others and to the social institutions, cultural forces, and the physical space that make up his or her environment (Meyer, 1988). Ecological perspective calls attention to the development in context and emphasizes that human development results from interplay of biology and society (Garbarino, 1986). According to ecological perspective, "people orient to the environment; they operate within the environment; they are influenced by the environment; and they evaluate the environment in terms of future possibilities" (Fridgen, 1980: 364).

Ecological perspective suggests that people and environment is a unitary system within a particular social, historic, and cultural context, and only in the detailed context, can people, their environment, and their relationship be completely understood (Germain, 1991, 1994; Germain and Gitterman, 1996, 1995). The most important concepts of ecological perspective are person-environment fit and adaptation. Person-environment fit is related to the idea of person in environment and stresses a good fit or balance between individual's needs and the outside resources of the environment. Without a good fit or balance, personal development and/or the environment are subject to damage (Germain and Gitterman, 1996, 1995). Adaptation is actions that are purposed to make person change, and/or

environmental change, to obtain the person-environment fit (ibid). Germain (1994) also suggested that changes within people or environments can create an imbalance which influences people's ability to fulfill their needs. In such situations, people respond through passively adjusting to the change or acting to restore the balanced fit through biological, social, emotional, cognitive, behavioral, and cultural adaptations to either themselves, their environments, or both themselves and environments.

Ecological perspective provides a thinking style, which is less concerned with the prediction based on cause and effect but more concerned with indeterminacy in complex human phenomena (Germain and Gitterman, 1995). Ecological perspective also incorporates concepts from different theoretical perspectives. Besides general systems theory and ecological ideas, it draws concepts from social support, stress and coping perspectives, cognitive-behavioral theory, life course, and so on (Germain and Gitterman, 1995). With regard to older people adaptation to aging or life satisfaction, ecological perspective points to the complexity of people's aging process. It implies that older people and environments should be viewed as a unitary system within a particular cultural and historic context. It suggests that the theoretical or conceptual framework to examine older people's adaptation to aging or life satisfaction should embrace both older people and their biological, social, emotional, cognitive, behavioral, and cultural environments.

Ecological perspective has taken different forms, among which some highlight the connections among biological, behavioral, and social factors, while some emphasize the significance of social and physical environments (Satariano, 2006). The ecological model of aging proposed by Lawton and Nahemow (1973) and Lawton (1982) is one of the well known in the studies of aging. This model illustrates the interaction between personal

competence of older people and environment demands and suggests that the nature of an older person's response to the environment relies on his or her level of competence. The model also demonstrates the range of adaptation available within environmental components. Lawton (1983) also categorized environment into objective environment and subjective environment in his ecological model and he believed that the subjective environment is a domain of perceived quality of life. Later, Lawton (1998) indicated that an older person's perception of his or her life situation may be determined by how his or her preferred needs are fulfilled. Lawton's ecological model of aging was often adopted in the studies on the housing or related issues for the elderly (e.g., Lawton, Moss, and Moles, 1984; Lawton, 1998).

In summary, ecological perspective stresses people's biological, social, emotional, cognitive, behavioral, and cultural adaptations to either themselves, their environments, or both themselves and environments. Such a perspective recognizes that aging is a complex biopsychosocial process and can avoid oversimplification and reductionism in examining older people's adaptation to aging or their life satisfaction. Such a perspective on aging has also been advocated in recent years in gerontology (Atchley and Barusch, 2004; Hooyman and Kiyak, 2005; Whitbourne, 2008). Based on a longitudinal study that investigated the relationship between retirement transitions and subsequent psychological well-being, Kim and Moen (2002) also argued that it is important to examine various resources and contexts surrounding retirement transitions to understand the dynamics of the retirement transition and its relationship with psychological well-being. In addition, some researchers (e.g., Zandi and McCormick, 1991; Bubolz, Eicher, Evers, and Sontag, 1980) already adopted

ecological perspective to study life satisfaction and they suggested that ecological perspective provided a useful theoretical framework.

A brief discussion of different perspectives

Based on the above description and discussion of biological, psychological, social, socio-cultural, and ecological perspectives for the studies on life satisfaction, it is clear that the range of theories of aging is broad. This reflects the wide range of factors which is likely to exert impacts on life satisfaction among older people. Within the biological sciences, aging is being studied in the genetic and molecular level. The findings about the influence of genetics on life satisfaction will be useful for us to understand how the genetics influence aging and what other mechanisms account for life satisfaction of older people if genetics is eliminated.

Within psychological sciences, there is a great diversity of research on aging, including psychoanalytic, behavioral, cognitive-behavioral, personality, and humanistic approaches. Each approach provides its distinct insights to study life satisfaction of older people, although each is likely to have limitations. For example, behavioral theories do not account for free will and internal influences such as people's moods, thoughts, and feelings. They are not able to explain the learning that occurs without the use of reinforcements. Humanistic theories are also not able to objectively tell or measure whether someone is self-actualized or not. Despite the limitations, psychological research on aging has uncovered a wealth of information concerning aging and provides various ways to study life satisfaction of older people. However, it remains to be seen whether various approaches

in psychological research on aging can be integrated for a holistic view of life satisfaction of older people.

From social and socio-cultural perspectives on aging, it is clear that one's aging or life satisfaction is affected by his or her relationship with the larger society and culture. Therefore, in order to understand one's aging or life satisfaction, it is necessary to examine social and cultural factors which exert impacts on one's life. Many social theories have also been developed to explain one's aging or life satisfaction, such as activity theory, disengagement theory, social exchange theory, political economy and aging theory, and so on. Although it is unlikely that any one of these theory will emerge as dominant, each provides unique contribution to a better understanding of one's aging or life satisfaction. However, it should be noted that social and socio-cultural perspectives are not quite distinct from each other. First, there is not a clear definition about social gerontology. It was pointed out that social gerontologists rarely developed its own multidisciplinary theories, but drew on a broad array of social theories from other disciplines (Marshall, 1996; Marshall and Clarke, 2007). Second, it is argued that culture influences older people's status, social settings, living conditions, and personal experiences and also exerts impacts on many of the psychosocial and physical processes of aging (Luborsky and McMullen, 1999). Thus, it is hard to distinguish social and cultural dimensions or factors of aging and there are overlaps in these two perspectives.

Ecological perspective is a holistic perspective. It emphasizes the interaction between person and environment. Although ecological perspective is not specific for the study on aging or older people, it has the implications for the study on well-being of older people. According to ecological perspective, life satisfaction of older people is a result of

interactions among diverse biopsychosocial forces. It suggests that aging or life satisfaction of older people is subject to the influence by such forces in different levels of environment or ecosystem (Bronfenbrenner, 1979; Bubolz et al., 1980). Using the ecological perspective, one can attempt to analyze how factors in various environments may contribute to life satisfaction of older people. However, it should be noted that although the perspective can help us examine how factors in various ecosystems such as individual psychological characteristics, family characteristics, or social factors may contribute to life satisfaction of older people, ecological perspective has its limitations. It cannot demonstrate clear and particular causal relationships between factors (Carlson, 1984). Wakefield (1996) also argued that ecological perspective just provides a way of thinking or perceiving that individuals are connected with their environments. Therefore, there are a variety of causes of human behaviors and social phenomena. However, the claim of person in environment does not contribute to the causal connections among variables of human behavior and social phenomena. Wakefield suggested that domain-specific theories which can generate testable hypotheses are needed in accompany with the ecological perspective. Even though with limitation, ecological perspective enhances our understanding of life satisfaction among older people in at least the following two ways. First, it heightens our awareness about the multiple cause or contributing factors to life satisfaction of older people. The perspective takes full contexts of life satisfaction of older people into account, which highlights from different levels of systems provided that the proper domain-specific theories are applied. Second, ecological perspective enriches our understanding to life satisfaction among older people in different nations, cultures, and so on. It suggests that there are specific correlates of life satisfaction for different social and cultural groups of

older people. It also reminds us to notice and cater for the specific correlates of life satisfaction among older people with different cultural or social backgrounds. In short, although with some limitation, ecological perspective contributes to our understanding regarding life satisfaction of older people. Ecological perspective suggests that there various levels or systems of factors which may impact life satisfaction of older people. However, to adopt ecological perspective in the study of life satisfaction among older people, there is a need to define the nature of factors in different levels or systems; at the same time, specific theories are also need to justify the relationships between the factors in different levels or systems and life satisfaction of older people.

Based on the above description and discussion of different perspectives, it is clear that many factors including biological, psychological, social, and cultural factors are likely to exert impacts on life satisfaction among older people. In the study of correlates of life satisfaction among older people, it is obvious that there is not one perspective better than the others. Each perspective has its emphases and provides its distinct approaches to study aging or life satisfaction of older people. At the same time, each perspective is likely to have limitations and can only account for certain dimension of aging or life satisfaction among older people. It is impossible for any one perspective to fully account for all complexity and multidimensionality of aging or life satisfaction of older people. A comprehensive understanding of aging or life satisfaction of older people may need to conduct and integrate or combine empirical research from different perspectives. Ecological perspective suggests that older people and environments should be viewed as a unitary system within a particular cultural and historic context. It provides a way to look at the correlates of older people's life satisfaction from a few levels of environments or

ecosystems. It also suggests a useful way to identify and examine the factors in different levels of environments or ecosystems which may contribute to life satisfaction among older people. It is likely that ecological perspective can provide a potential way to develop a comprehensive understanding of correlates of life satisfaction among older people.

Summary

In sum, life satisfaction is generally regarded as a cognitive evaluation of subjective well-being and is also regarded as a relatively stable concept. There are many perspectives to study aging or life satisfaction among older people. Each perspective of theories of aging differs in its emphases. Biological perspective focuses on biological bases for aging or life satisfaction of older people. The theories or approaches within psychological perspective emphasize psychological factors such as coping strategies, early developmental experiences, and cognitive performance in shaping aging or older people's life satisfaction. Social and socio-cultural perspectives are primarily concerned about social and cultural factors such as activity participation, intergenerational relationship, and social, political, and cultural structures in shaping aging or older people's life satisfaction. Ecological perspective emphasizes the interaction between person and environments and implies that aging or life satisfaction of older people should be studied within biological, psychological, social, cultural, and other environments. A comprehensive understanding of aging or life satisfaction of older people may need to conduct and integrate research findings from different perspectives. However, it seems that ecological perspective can integrate various specific domain theories from different perspectives. It has the potential to provide a way to develop a comprehensive understanding of correlates of life satisfaction among older

people. In the next chapter, the researcher will have a review of some selected literature on the correlates of life satisfaction in social gerontology. At the same time, the researcher will suggest some variables which are rarely examined but may exert impact of life satisfaction of older people in mainland China.

Chapter three: Literature review of correlates of life satisfaction in social gerontology and introduction of new factors

As described in the previous chapter, there are many different perspectives to study life satisfaction of older people. Within perspectives such as psychological and social perspectives, various theories have also been developed to study life satisfaction. In social gerontology, many studies have been conducted to explore or examine the factors associated significantly with life satisfaction among older people. A literature review of correlates of life satisfaction among older Americans by Larson (1978) identified that the factors included better health, higher socioeconomic status, being single or married (as apposed to widowed, divorced, or separated), and participation in group activities. A recent literature review of life satisfaction in social gerontological studies identified ten types of most frequently found factors associated with older people's life satisfaction (Mannell and Dupuis, 2007). These ten types of factors are: 1) health status and functional ability; 2) financial satisfaction, security, and strain; 3) education and employment/occupational status; 4) age; 5) gender; 6) marital status; 7) leisure activity, social integration, and community involvement; 8) role loss; 9) personality and coping styles; and 10) race, ethnicity, and cultural differences. A review of literature by George (2006) also suggested six categories of factors associated with subjective well-being of older people. They include 1) demographic characteristics such as age, gender, race/ethnicity, and marital status; 2) socioeconomic status; 3) health; 4) activities; 5) social integration such as multiple roles, religious participation, and volunteering; and 6) social ties and social support.

It was pointed out that “[g]erontologists invariably embrace the truism that aging is multidimensional and multicausal, yet any one study can only deal with a limited array of this complexity” (Silverman et al., 2008: p4). In the present study, the literature review mainly focuses on the factors identified by Larson (1978), George (2006), and Mannell and Dupuis (2007). These factors are organized into four categories including activity participation, informal social support, intergenerational relations, and socio-demographic factors. After literature review, the researcher will introduce three new variables that are likely to exert impacts on life satisfaction of older people in mainland China. These three variables are *hukou*, having *mianzi* or face in social interactions, and Chinese cultural beliefs of adversity.

It should be pointed out that due to numerous materials on life satisfaction of older people, the researcher mainly focuses on the articles published in some international journals such as *Journal of Gerontology*, *The Gerontologist*, *Aging & Society*, *Journal of Aging and Human Development*, *Journal of Cross-Cultural Gerontology*, and *Journal of Gerontological Social Work*. Regarding the articles published in mainland China, the researcher mainly focuses on some journals in mainland China such as *Social Sciences in China* (《中國社會科學》), *Sociological Research* (《社會學研究》), *Chinese Journal of Population Science* (《中國人口科學》), *Acta Psychologica Sinica* (《心理學報》), and *Chinese Journal of Gerontology* (《中國老年學雜誌》).

Activity participation and life satisfaction

Reich, Zautra, and Hill (1987) indicated that the notion that activity is good for older people guides a wide range of welfare practitioners who work with or advise older people.

It was also argued that activity participation is one of the best predictors of older people's well-being (Rowe and Kahn, 1997). The relationships between activity participation and life satisfaction of older people have been examined since the 1960s and remain an important issue in social gerontological research (Havighurst, 1963; Cutler, 1976; Knapp, 1977; Kelly and Ross, 1989; Iwasaki and Smale, 1998; Menec, 2003; Joung and Miller, 2007; Nimrod and Adoni, 2006; Rodríguez, Látková, and Sun, 2008). Although there is research reporting participation in activities in general (physical activity level, satisfaction with leisure activity, and social contacts) has important effect on life satisfaction among older people (Fernández-Ballesteros et al., 2001), the predominance of research focused on older people's participation in leisure activity and indicated a positive relationship between participation in leisure activity and life satisfaction of older people (e.g., Rodríguez, Látková, and Sun, 2008; Joung and Miller, 2007; Nimrod and Adoni, 2006; Chou, Chow, and Chi, 2004; Boley, 2001; Iwasaki and Smale, 1998; Aquino, Altmaier, and Russell, 1996; Bevil, O'Connor, and Mattoon, 1993; Kelly and Ross, 1989; Ragheb and Griffith, 1982). Regarding the concept of leisure, it "is viewed as activity done primarily for its own sake, with an element of enjoyment, pursued during unobligated time" (Iso-Ahola, 1989: 118). Bevil, O'Connor, and Mattoon (1993) also stated that in retirement, people tend to return to a play-dominated lifestyle which is known as leisure and is considered to be the reward of many hard years of work. Furthermore, Shaw (1985) identified five characteristics of leisure: freedom of choice, intrinsic motivation, enjoyment, relaxation, and lack of being evaluated.

There are at least two theories which can be used to study older people's activity participation and their life satisfaction. The first theory is activity theory, which has been

developed since the 1960s and which was also introduced in the previous chapter. According to activity theory, activities may enable older people to confirm identities and participate in valued roles that may generate support for self-esteem and well-being (Reitzes, Mutran, and Verrill, 1995). Activity theory suggests that both the frequency of activity participation and the degree of activity intimacy influence life satisfaction of older people (Lemon, Bengtson, and Peterson, 1972). While the activity frequency component has been generally supported by researchers (e.g., Steinkamp and Kelly, 1987; Lawton, 1994; Christensen et al., 1995; Zimmer, Hickey, and Searle, 1995; Searle et al., 1995; Misra, Alexy, and Panigrahi, 1996; Chen, 2001; Silverstein and Parker, 2002; Sparks, Zehr, and Painter, 2004; Nimrod and Adoni, 2006), studies have shown inconsistencies regarding the importance of activity's intimacy (Menec, 2003; Chen, 2001; Hoyt, Kaiser, Peters, and Babchuk, 1980; Knapp, 1977; Cutler, 1976; Lemon et al., 1972). For instance, Lemon et al. (1972) found that informal activities with friends were related with life satisfaction, but other informal activities as well as formal and solidarity activities were not related to life satisfaction. Knapp (1977) found that both informal and formal activities have positive relationships with life satisfaction, but solidarity activities were not associated with life satisfaction of older people. Cutler (1976) and Hoyt, Kaiser, Peters, and Babchuk (1980) found that there was not any relationship between formal activities and well-being of older people.

Another theoretical framework, which is related to activity participation of older people, is Erikson's (1963) stages of self or ego development. According to the seventh developmental stage of Erikson's theory, i.e., generativity versus stagnation, people have an innate need to contribute to society in middle to later adulthood. Thus, it can be argued

that successful resolution of the generativity versus stagnation crisis benefits the individual and would contribute to his life satisfaction (Warburton, McLaughlin, and Pinsker, 2006). Based on Erikson's work, generativity includes, but is not limited to being productive at work, involvement in community activities and organizations, and raising children (de St. Aubin, McAdams, and Kim, 2004). Later, Erickson, Erikson, and Kivnick (1986) extended beyond Erikson's (1963) work on middle age's direct responsibility for maintaining the world and introduced the concept of grand-generativity. This concept captures various roles of older people as aging parent, grandparent, old friend, mentor, and so on. It was indicated that for older people, an expression of grand-generativity in caring for others is balanced by the challenges to accept care from other (Erickson et al., 1986). A qualitative study in Australia based on Erickson's development theory found that many older people performed a range of generative activities within the community such as helping out at a community center, passing on cultural mores and wisdom to young generations; and these activities contributed to a positive experience of aging (Warburton et al., 2006).

Menec (2003) also pointed out that a problem in the literature on the relationship between activity participation and life satisfaction among older people is the lack of consistency in activity measure. Although this problem seems not to be a theoretical problem, it deserves our attention. For example, Lemon et al. (1972), Knapp (1977), and Longino and Kart (1982) differentiated activity into three categories: informal, formal, and solidarity activities, while Nimrod and Adoni (2006) differentiated four groups of older people with different leisure styles: company seekers, media consumers, culture enthusiasts, and sophisticated choosers. Furthermore, Lennartsson and Silverstein (2001) classified participation in hobbies and gardening as solidarity activity, while Glass, Seeman, Herzog,

Kahn, and Berkman (1995) and Glass, De Leon, Marottoli, and Berkman (1999) classified gardening and housework as productive activities. In addition, Ragheb and Griffith (1982) and Boley (2001) measured leisure participation by adopting, modifying, and reducing the Leisure Activities Blank (LAB, 120 items) developed by McKechnie (1975) to eight leisure categories including mass media, reading, social activities, outdoor activities, sports activities, spectator sports, cultural activities, and hobbies). Mannell and Dupuis (2007) indicated that social, outdoor, and sport activities have the strongest associations with life satisfaction, and hobbies the lowest. However, due to the inconsistencies in defining activity in literature, it is difficult to compare results across studies.

In mainland China, there are a few studies on leisure activity of urban older people. A survey on urban older people in Shanghai in 1998 indicated that most people reported participating in activities such as watching television, reading books and magazines, listening music, chatting with others, physical activities and sports, and so on (孫常敏, 2000). A survey on urban older people in Guangzhou in 1998 indicated that the average time for leisure activity was 4.75 hours per person; older people spent an average of 3.17 hours on recreation and social activities and an average of 1.58 on sports and physical activities (鐘英蓮 and 閻志強, 2000). A few empirical studies also examine activity participation and life satisfaction of older people. For example, 林豔 and 陳章明 (2007) examined a group of older people who participated in a learning course and found that social interaction among the group of older people contribute to their life satisfaction. 項曼君, 吳曉光, and 劉向紅 (1994) also found that participation in social activity was associated with life satisfaction of older people in Beijing, but their study did not specify the items or components of social activity in their study. The relatively little research on

activity participation and life satisfaction of older people in mainland China may be partly due to the culture and societal influences. For instance, Thang (2005) argued that activity after retirement has seldom been a concern to most people in Singapore, probably because the ideal retiree lifestyle is traditionally conceived in the concept *xian qin fu* (享清福), i.e., “enjoying the fortune of doing nothing” in Chinese culture. Even though Thang’s explanation of *xian qin fu* as enjoying the fortune of doing nothing may be questionable, the concept of *xian qin fu* at least implies people’s expectation to take relaxing. It is possible that in agricultural societies, most people have to work hard for a living. Relaxing or enjoying doing nothing may be perceived as a fortune by many people. Given that China is still in the process of industrialization, it appears to be understandable that the ideal retiree lifestyle may be just relaxing or doing nothing for many people, especially for those who take agricultural work. Thang’s (2005) study also found that opportunities for new experiences in learning and leisure contribute to positive and active living for older adults in Singapore.

Based on the above literature review, participation in leisure activities is often considered to be positively related to life satisfaction among older people in Western societies. While the activity frequency component has been generally supported by researchers, studies have shown inconsistencies regarding the importance of activity’s intimacy or type. Furthermore, literature also indicates the inconsistencies in activity measure, which makes it difficult to compare results across studies. Literature review also indicates that more research on activity participation in late life is imperative in mainland China. Such studies are important for gerontological social workers in mainland China, because if activity participation can be proved to enhance life satisfaction of older people in

mainland China, social workers in mainland China may intervene to promote activity participation among older people to enhance their life satisfaction.

Informal social support and life satisfaction

Informal social support, i.e., support from family, relatives, friends, and neighbors, has been extensively examined in the studies of associates of subjective well-being of older people and was generally used interchangeably with the term of informal support or social support⁽¹⁾ (Phillips et al., 2008; Wong, Yoo, and Stewart, 2007; Mannell and Dupuis, 2007; Antonucci and Akiyama, 2007; Antonucci, Sherman, and Akiyama, 1996; Ng, Phillips, and Lee, 2002). According to the support/efficacy theory, social relations such as social support affect health and well-being by instilling in the individuals a sense of self-worth and self-efficacy (Antonucci and Akiyama, 2007). Another theoretical perspective indicates that social relations such as social support help the individuals learn how to regulate their emotions. This allows people to more competently navigate the challenges and the choices confronted in daily life, and thus optimizes their overall well-being (Antonucci and Akiyama, 2007). A psychological theory of aging, namely, socioemotional selectivity theory proposed by Carstensen (1991, 1992) asserts that through mechanisms of socioemotional selectivity, individuals reduce interaction with some people as they age while increasing emotional closeness with significant others, such as an aging sibling, an adult child, or friends. This theory reinforces older people's change in social contact by the self-interested need for emotional closeness with significant others. It implies that people may concern developing and remaining harmonious with significant others such as family

⁽¹⁾ Unless specified, social support, informal support, and informal social support in this thesis are also used interchangeably.

members or friends, rather than increasing interaction with others in old age. In addition, it was argued that social support is not only a direct determinant of well-being, but also plays an important role in buffering the deleterious effects of all kinds of losses which face older people (McInnis-Dittrich, 2005; Kahn, 1979).

While social support is a multidisciplinary construct and there is not a general consensus about how social support should be defined (McCamish-Svensson, Samuelsson, Hagaerg, Svensson, and Dehlin, 1999; Schroevers, Ranchor, and Sanderman, 2003), social support is often regarded as support accessible to people through their social networks (Cavanaugh, 1998; Antonucci, 2001). Social networks are structural characteristics of people's social relationships, including objective aspects such as characteristics of the network and frequency of contact as well as subjective aspect such as people's satisfaction with social contacts (Antonucci, Sherman, and Akiyama, 1996; Fiori, Antonucci, and Cortina, 2006; Antonucci and Akiyama, 2007). Vaux (1990) also pointed out that many conceptual difficulties about social support can be diminished if social support is viewed as "a metaconstruct with three distinct conceptual components: Support network resources, supportive behavior, and subjective appraisal of support" (p. 508). Research indicated that both quantitative and qualitative aspects of social support tend to exert impact on life satisfaction of older people.

In terms of objective measures or quantity of social support, many studies (e.g., Bowling, 1990; Litwin and Shiovitz-Ezra, 2006; Silverman et al., 2000) found that social network of older people was correlated significantly and positively with their life satisfaction. A meta-analysis examining the influences of socioeconomic status, social network, and competence on subjective well-being in later life demonstrated that older

people's life satisfaction is related to their social network (Pinquart and Sorensen, 2000). A few studies in France (Iwatsubo, Derriennic, Cassou, and Poitrenaud, 1996) and Japan (Kudo, Izumo, Kodama, Watanabe, Hatakeyama, Fukuoka et al., 2007) also identified social network as a correlates of life satisfaction among the elderly. Regarding the life satisfaction of older people with diseases and disability, it was suggested that older people may compensate their poor physical function by placing more emphasis on social networks and social activities (Jang, Mortimer, Haley, and Borenstein Graves, 2004). A cross-national study which compared the levels of satisfaction among Chinese elders living in Vancouver, Canada, Hong Kong, and Shanghai, China also showed that social support measured by living arrangement and the number of close friends is an important predictor of life satisfaction among urban older people in all three places (Chappell, Lai, Lin, Chi, and Gui, 2000).

There is little research which specifically focuses on the relationship between subjective measure or quality of social support and life satisfaction of older people. However, research evidence indicated older people's perceptions concerning social support are much more important than objective assessments of social support in predicting their subjective well-being (Newsom and Schulz, 1996; Chi and Chou, 2001; Siu and Phillips, 2002; Antonucci and Akiyama, 2007, 1991). A meta-analysis also concluded that the quality of social support is more strongly related to subjective well-being than the frequency of such support (Pinquart and Sorensen, 2000). Given that life satisfaction is generally regarded as a cognitive component of subjective well-being (Diener and Lucas, 1999; Diener et al., 1997), it seems reasonable to infer that quality of social support tends to correlate with life satisfaction of older people.

Although it is generally reported that social support contributes to life satisfaction of older people, it was also pointed out that social support can be both positive and negative to older people's life satisfaction (Antonucci and Akiyama, 2007, 1991; Rook, 1984). For instance, social support for nonadaptive behaviors may be negative associated with one's life satisfaction. Families and friends can also have a negative impact through the communication of a lack of support.

In the studies on the relationship between social support and life satisfaction among older people in mainland China, empirical research has found that social support is associated significantly and positively with life satisfaction of older people (郭晉武, 1992; 崔麗娟 and 李虹, 1997; 賀寨平, 2002; 張友琴, 2002; 李建新, 2004; 鄭宏志 and 陳功香, 2005). Research also indicated that having a spouse or having more family members contributes to life satisfaction of older people in mainland China (Pei and Pillai, 1999; 賀寨平, 2002); however, the number of friends is not associated with life satisfaction of older people (賀寨平, 2002). In addition, it was suggested among various kinds of social support for older people, family support is the most important support for both urban and rural older people (張友琴, 2002).

In short, informal social support is an important factor which has been generally found to exert positive impacts on life satisfaction of older people. It seems that both objective and subjective assessments of social support are likely to be correlated with life satisfaction of older people. Although it is generally indicated that social support is positively associated with life satisfaction of older people, caution should also be taken to note that social support may also be negative association between social relations and life satisfaction of

older people. In mainland China, it seems that family support is the most important support for older people's life satisfaction.

It should be pointed out that family support is obviously one aspect or component of informal social support. In the studies on life satisfaction of older people, some scholars (e.g., Lowenstein, Katz, and Gur-Yaish, 2007; Pei and Pillai, 1999) only focused on the relationships between family support and life satisfaction of older people. However, many scholars (e.g., Newsom and Schulz, 1996; Rogers, 1999; Chou and Chi, 1999; Abu-Bader, Rogers, and Barusch, 2002) integrate family support together with friends, relatives, and neighbors supports. In this section, the researcher mainly reviews the research which integrates family support together with supports from friends, relatives, and neighbors. Given the importance of family support in life satisfaction, especially among older Chinese, the researcher will have a review of some literature on the relationships between family relation and life satisfaction of older people in the next section.

Intergenerational relations and life satisfaction

Family has been a safety net for older people through human history and the supportive function of family remains theoretically unchallenged (Pei and Pillai, 1999). Research indicated that older people and their children maintain relationship throughout life and that family provides extraordinary care for older family members (Rossi and Rossi, 1990; Brubaker, 1990). Many factors related to family such as large number of children, receiving and giving help, intergenerational solidity or family harmony, balance between intergenerational support, and so on have been found to be associated with subjective well-being of older people (Mutran and Reitze, 1984; Ingersoll-Dayton and Antonucci,

1988; Silverstein and Bengtson, 1994; Zhang and Yu, 1998; Pei and Pillai, 1999; Katz and Lowenstein, 1999; Mehta, 1999; 熊躍根, 1999; Chi and Chou, 2001; Lowenstein, Katz, and Gur-Yaish, 2007). For instance, research indicated that the reciprocity element of intergenerational support, i.e., the balance between support provided and support received, is a crucial aspect of subjective well-being of older people (Ingersoll-Dayton and Antonucci, 1988; Mehta, 1999). Stoller (1985) found that parents who provided aid to children were less depressed than those who did not. She argued that it is “the inability to reciprocate, rather than the need for assistance, undermines the morale of older person” (p. 34).

In Western societies, a conceptual framework or model for the study of intergenerational relations: intergenerational solidarity model was developed by Bengtson, Olander, and Haddad (1976) and Bengtson and Roberts (1991) to examine the relationship between older people and their adult children. The framework perceives the relationships between parents and adult children as a primary source of mutual emotional and instrumental support. The framework conceptualizes intergenerational solidarity as a multi-dimensional factor with six components: association (or contact), affection (or emotional attachment), consensus (or agreement), function (or patterns of instrumental support or resource sharing), familism (norms or expectations of individual obligations to the family), and structure (opportunities that the generations have for interactions based on the number, gender, and geographic proximity of intergenerational family members) (Bengtson and Roberts, 1991: 857). Research indicated that affectual solidarity or emotional component of solidarity was positively associated with life satisfaction of older people (Lowenstein, Katz, and Gur-Yaish, 2007; Lowenstein and Katz, 2005; Coonidis and McMullin, 1993).

It was argued that the model of Bengtson and associates was useful in explaining objective solidarity (association), but not subjective solidarity (consensus and affection) and that association, consensus, and affection were not dimensions of one construct (Atkinson, Kivett, and Campbell, 1986). This conceptual framework was also rarely applied in the studies on life satisfaction among older Chinese people. It is possible that the attributes for intergenerational solidarity may be different between Chinese culture and Western cultures. For example, Shek (2001b) pointed out that Chinese people tends to be relatively inhibited in their emotional expression. Research also indicated that emotional expression was regarded to be less significant and relevant in Chinese culture than in the West (Potter, 1988). Furthermore, the research on the attributes of a happy family perceived by Chinese adolescents and their parents in Hong Kong revealed that few respondents regarded emotional expression within the family and sensitivity to the emotions of family members as important attributes (Shek and Chan, 1998; Shek, 2001a).

Another factor related to intergenerational relations is filial expectations or norms of older people which was found to be positively related to their depression (Lee, Netzer, and Coward, 1995; Quinn, 1983). Lowenstein, Katz and Gur-Yaish, (2007) also found that life satisfaction of older people was negatively and significantly correlated with their filial norms. Given that filial norms of older people are not related to the actual receipt of support from their adult children (Lee, Netzer, and Coward, 1994, 1995), it is likely that that some people may expect more assistance from children than they receive, potentially leading to disappointment and strained family relations (Peek, Coward, Peek, and Lee, 1998). Research in Hong Kong did found that filial discrepancy, i.e., the gap between what the children do and what the parents expect from them, affects life satisfaction of older

people (Cheng and Chan, 2006b). In addition, some studies in Western societies found that support from adult children is psychologically beneficial at moderate levels, but may be harmful at too frequent or too infrequent level (Lee, Crittenden, and Yu, 1996; Silverstein, Chen, and Heller, 1996).

Family has been strongly emphasized in Chinese culture (Lam, 1997; Shek, 2006a; Sim, 2008). This emphasis is reflected in a popular Chinese saying of “*xiu shen, qi jia, zhi guo, ping tian xia*” (if there is light in the soul, there will be beauty in the person; if there is beauty in the person, there will be harmony in the house; if there is harmony in the house, there will be order in the nation; if there is order in the nation, there will be peace in the world) (Shek, 2006a: 276). Similar to intergenerational solidarity emphasized by Bengtson, Olander, and Haddad (1976) and Bengtson and Roberts (1991), 石丹理 and 賴明輝 (2000) and Shek (2001, 2006a) indicated that there are strong emphasis on family harmony and harmonious relationships among family members in the traditional Chinese culture. The Chinese proverb that ‘everything will prosper if a family is harmonious’ (家和萬事興) also attests to the importance of family harmony in Chinese people’s life. Zhang and Yu (1998) also argued that Chinese culture emphasizes harmonious family relations and interdependence among family members. Therefore, Chinese elderly generally expect family cohesiveness and availability of family care. Conflict with family members or lack of family care will make the elderly disappointed psychologically and endanger their security in old age, leading to reduction of satisfaction with lives. Empirical research also found that stressful family relations and lack of family care resulted in Chinese older people’s vulnerability to depression (Zhang, Yu, Yuan, Tong, Yang, and Forman, 1997). In

’ 修身，齊家，治國，平天下。

addition, Zhang and Yu (1998) found that family harmony was a significant predictor for life satisfaction of older people living in clinical settings in Beijing. 項曼君, 吳曉光, and 劉向紅 (1994) also found that family harmony to be associated significantly and positively with life satisfaction of older people in Beijing.

Regarding family support or filial piety to older people, as discussed in the previous chapter, filial piety is believed to be one of the core ethics in Chinese culture (葉光輝 and 楊國樞, 1991; Ho, 1996; Raiten, 1999; 楊國樞, 2006b). It refers to a range of behavioral prescriptions, such as showing respect for and being obedient to parent and the ancestors, honoring or promoting their public prestige, living with parents, and so on (Raiten, 1999; Chow, 2001; Hsu, Lew-Ting, and Wu, 2001; Ng, Phillips, and Lee, 2002; 李翊竣, 2005). Chow (2000) also discussed three levels of filial piety. He indicated that the first level is to look after the material needs including caring for parents when they are ill. The second level constitutes of paying attention to parents' wishes and obeying their preferences. The third level is to please parents and bring their honor by other behaviors. Chow's empirical study in Hong Kong revealed that most of the respondents practiced the first level, but the majority did not practice the second and the third levels. A research conducted in Beijing, Shanghai, Guangzhou, Xiamen, Xian, and Hong Kong showed that Chinese people have high expectation of children's filial piety towards their parents and the practice of filial piety tends to be high in Beijing (Kwan, Cheung, and Ng, 2003). A study in Hong Kong by Cheng and Chan (2006b) also found that older Chinese people hoped that their children could do more to support them; however, they appeared to be reasonably satisfied with the support that their children provided. Cheng and Chan's study also indicated that there was

not evidence that a child's overdoing his or her filial role was detrimental to the parents' well-being.

It should be pointed out that unlike various welfare services available for the elderly in United States of America (Nathanson and Tirrito, 1998; Frank, 2006) and in Hong Kong (李翊竣, 2001, 1998), welfare services for the elderly in mainland China are remedial and are mainly available to older people without work units and family support (Ikels, 1992; Knight, 1999; Leung, 2001, 2006b; Hebel, 2004; 易松國, 2006; Aspalter, 2007). Both pension system and formal social services for older people are inadequate in mainland China. For example, about 71.4 percent of older people have to depend on their children as their principal source of financial support (Leung, 2006a). The government in mainland China has constantly stated and emphasized that family should be responsible for the support and care of the elderly (Leung, 2001; Xu, 2001; 高和榮 and 蒲新微, 2003; Xiang, 2005). However, it was argued that filial piety was not a panacea for the challenges and problems of caring and supporting rural elderly and the government's insistence on family care actually put rural elderly and families at greater disadvantages and risks (Xu, 2001, 黃幹, 2005; Xiang, 2005). Since China took reform and open door policy in the later 1970s, rural-to-urban migration of labor has increased and many older people has been left behind in rural areas due to their physical and intellectual disadvantages (Xu, 2001; Xiang, 2005). Xu (2005) also pointed out that the authority of older people in the family in traditional China relied heavily on control over distribution of family resources and inheritance of family property. The private ownership of family property in traditional China was one cornerstone in the status of older people in the family and a mean of old-age security. However, the economic and social system changes in mainland China since the

foundation of People's Republic of China have removed the economic foundation (private ownership of property such as land) supporting the status of the aged in the family. In rural areas, old age has become linked with poverty, subordination within the family and with many social and economic disadvantages; family support to them is often fraught with uncertainties and largely depends on children's willingness and capacities. It seems necessary to examine the extent of family or filial support to older people, especially to rural older people in mainland China.

In short, intergenerational relations are likely to exert impacts on life satisfaction among older people, especially among rural elderly in mainland China who are expected to depend on their family in old age (Jackson and Howe, 2004). Among the factors related to intergenerational relations, research indicated that family harmony or intergenerational solidarity and filial discrepancy affect life satisfaction of older people. In mainland China, the government has emphasized family or filial support for older people; however, it remains a problem whether family is willing and capable to provide support to older people. It seems important to investigate the extent of family or filial support to older people, especially to rural older people in mainland China and examine its relationship with life satisfaction of older people. Such research will provide useful information to address social welfare policies for the elderly in mainland China.

Some socio-demographic factors and life satisfaction

Some socio-demographic factors of older people such as sex, age, marital status, income, education, and health have been frequently found to play important roles in the life satisfaction among older people (Mannell and Dupuis, 2007; Larson, 1978). For instance, it

was argued that age may be regarded as a variable associated with life stages, transitions, and the life course in ways that implicate both stressor and social support (Cobb, 1979; Kahn, 1979). Mancini and Sandifer (1995) also argued that “[i]n studies of aging, factors such as health, economic resources, and mobility must always be taken into account because they are *access variables* that often explain the behavior and life style of older people” (pp.135-136, italics in the original text). Therefore, these variables of sex, age, marital status, income, education, and health will be included in the present study. A brief review of the relationships between each of these variables and life satisfaction among older people is presented below.

Sex

The research findings of the relation between sex and life satisfaction among older people are conflicting. For example, 李翊竣 and 齊鈺 (1990) and Coke (1992) found higher life satisfaction in older women than older men. Berg, Hassing, McClearn, and Johansson (2006) found no gender difference in overall life satisfaction of older people. Smith and Baltes (1998) and Borg, Hallberg, and Blomqvist (2006) reported higher life satisfaction in elderly men than women. A meta-analysis on gender differences in psychological well-being showed that gender differences were small (Pinquart and Sorensen, 2001). Mannel and Dupuis (2007) also described a weak relation between older people's gender and life satisfaction. However, they argued that gender differences in life satisfaction of older people might interact with other factors such as age, race, and socioeconomic status. In addition, it was argued that most women live longer than their

spouses, thus they may experience more difficulties in aging and have different perceptions of life satisfaction from those of men (Fry, 2001).

Age

There are also paradoxical findings about the relationships between age and older people's life satisfaction. Some research revealed that age has negative relationships with life satisfaction of older people (e.g., Wilson, 1967; Klemmack and Roff, 1984; Chou and Chi, 1999). On the other hand, it was found life satisfaction of older people remained stable or increased with age (Mercier, Peladeau, and Tempier, 1998; Hollis, 1998; Hamarat, Thompson, Aysan, Steele, Matheny, and Simons, 2002). A longitudinal study with a sample of more than 1,900 men over a period of more than 22 years found that life satisfaction increased to about age 65 and then declined; but there were significant individual differences in rate of change and in amount of curvature (Mroczek and Spiro III, 2005). However, like sex, the age of older people may interact with other factors such as health, marital status, financial resources, and activity participation. The relationship between age and older people's life satisfaction and the mutual relationships between age and other predictors of life satisfaction of older people need further examination. Studies on aging and older people also frequently argue that chronological age is an inaccurate determinant defining the onset of old age and is sometimes less significant than other aspects of age (Bytheway, 1997).

Martial status

Marital status was found to be strongly associated with life satisfaction among older people. Married people generally reported higher life satisfaction than those who were divorced, widowed, separated, or single (Neugarten, Havighurst, and Tobin, 1961; Morgan, 1976; Golant, 1986; 李翊竣 and 齊鈺, 1990; Comidis and McMullin, 1993; Kehn, 1995; Hong and Duff, 1997; Chipperfield and Havens, 2001; Li, Aranda, and Chi, 2007). Reinhardt and Fisher (1989) compared reports of life satisfaction among married women and widowed women and also found significantly higher life satisfaction among those who were married. It is possible that being married is likely to be associated with more social network which is frequently found to be positively related to old people's life satisfaction. It was also suggested that married older people typically have higher financial satisfaction and health, which are also related to higher life satisfaction (Mannell and Dupuis, 2007). Furthermore, it is possible that married older people tend to be younger than those widowed.

Income or finance

Income or finance is commonly found to be a significant factor which exerts impact on life satisfaction of older people. Much empirical evidence demonstrated that income or financial strain is associated with life satisfaction of older people (Golant, 1984; Mckenzie and Campbell, 1987; George, Okun, and Landerman, 1985; Osberg, McGinnis, Dejong, and Weward, 1987; Kehn, 1995; Zhang and Yu, 1998; Lohr, Essex, and Klein, 1988; 李翊竣 and 齊鈺, 1990; Krause, 1993; Ho et al., 1995; Chou and Chi, 1999; 熊躍根, 1999; Bowling and Windsor, 2001; Borg et al., 2006; Li et al., 2007). Older people with more

income or without financial strain are typically found to be more satisfied with life. However, it seems that the importance of income to life satisfaction of older people is different between males and females. A meta-analysis of the predictors of life satisfaction in the elderly by Pinquart and Sorensen (2000) found that men and women derive satisfaction from different sources. They found that life satisfaction is more highly related to income for men than for women. They suggested that men may be more socialized to draw their sense of identity from work and income, thus they tend to regard income as a barometer of satisfaction with life. They also suggested that men may be financially better than women and thus it is easier for men to obtain satisfaction from their financial situation. A qualitative study involving five 5 White and 3 African American women found that income was not mentioned by the older women as important factors relating to their life satisfaction (Glass and Jolly, 1997). In short, income or finance is an important factor which is frequently found to be associated with life satisfaction of older people; however, it was suggested that the importance of income or finance to life satisfaction seems to be different between male elderly and female elderly.

Education

Like income or finance, education has also been frequently found to be positively associated with life satisfaction among older people (George et al., 1985; Osberg et al., 1987; Krause, 1993; Glass and Jolly, 1997; Lohr, et al., 1988; Chou and Chi, 1999; Pinquart and Sorensen, 2000; Subasi and Hayran, 2004). However, it was indicated that the influence of education on life satisfaction is inconsistent and relationships tend to be weak, often disappearing when other factors are controlled (Mannell and Dupuis, 2007). A few

studies also found that education was not associated with older people's life satisfaction. For example, Kehn (1995) examined the influence of social variables on life satisfaction of 98 individuals aged 65 and over who primarily resided in the Monmouth County, New Jersey area. The results indicated that there was not statistically significant correlation between older people's life satisfaction and their education. Kudo et al. (2007) examined life satisfaction among older people in a rural town, Tashiro, Akita prefecture. Their study involved 1,710 older respondents and they found education was not associated with older people's life satisfaction. The inconsistent findings about the relationship between life satisfaction of older people and their education may be due to the employment of samples with different characteristics. In short, education is generally found to be an important factor associated with life satisfaction of older people, but there are also a few exceptions. It is also suggested that the relationships between education and life satisfaction of older people tend to be weak. More studies seem necessary to examine older people's education and their life satisfaction.

Health status

It was suggested that that health is one of the best predictors of life satisfaction of older people (Lher, 1982; Kennedy, King, and Muraco, 1983; Chappell and Marshall, 1992). A meta-analysis by Okun, Stock, Haring, and Witter (1984) proved that healthier people in the age group of young-old and old-old are more satisfied with life. Many studies demonstrated that health is positively associated with life satisfaction of older people (Golant, 1986; Chi and Lee, 1989; Bowling, 1990; 李翊竣 and 齊鈺, 1990; Roos and Havens, 1991; Stolar, MacEntee, and Hill, 1992; Bowling, Farquhar, Grundy, and Formby,

1993; 項曼君, 吳曉光, and 劉向紅, 1994; Iwatsubo et al., 1996; Zhang and Yu, 1998; 熊躍根, 1999; McCamish-Svensson et al., 1999; Rogers, 1999; Silverman, Hecht, and McMillin, 2000; Chappell et al., 2000; Fernández-Ballesteros et al., 2001; Abu-Bader, Rogers, and Barusch, 2002; Sparks, Zehr, and Painter, 2004; Lowenstein and Katz, 2005; Borg et al., 2006; Berg et al., 2006; Li et al., 2007). It is evident that older people, who have better health or perceive their health more favorably, are more satisfied with their life. Among health problems, functional ability has been frequently examined. It was generally revealed that older people with better functional abilities have higher level of satisfaction (Kruzich, Clinton, and Kelber, 1992; Blazer, Hughes, and George, 1992; Ho et al., 1995; Newsom and Schulz, 1996; Chou and Chi, 1999; Borg et al., 2006). In addition, it was indicated that perceived health is the best single predictor of life satisfaction for the elderly (Mannel and Dupuis, 2007). In short, health is generally found to be an important factor associated with life satisfaction of older people.

In summary, socio-demographic factors such as sex, age, marital status, income, education, and health have been frequently found to play important roles in the life satisfaction among older people. The research findings about the relationships between the variables of sex and age and the variable of life satisfaction are not consistent. However, research indicates that older people who are married, have higher income, more formal education, and better health have higher life satisfaction.

Factors which may affect life satisfaction of older people in mainland China

The literature review indicates that there have been many studies on life satisfaction among older people. The studies provided with a great deal of information. For example, there is

considerable agreement that older people with higher levels of education, higher incomes, better health status, more or better social support, and higher level of activity participation tend to be more satisfied with life. However, in the mainland China, there are three important factors which may exert impacts on life satisfaction of older people but were rarely examined in empirical studies. These three factors are *hukou*, having face or *mianzi* in social interactions, and Chinese cultural beliefs of adversity. The rationale of their potential impacts on life satisfaction of older people is discussed below.

Hukou

China implements a distinct *hukou* (household registration) system (Au, Nan, and Zhang, 2007; Luard, 2005; Wang, 2005; Solinger, 1999; Chan and Senser, 1997). *Hukou* system was established in the 1950s and took full effect in 1960 (Cheng and Selden, 1994). The *hukou* system is an administrative system, highly-nontransparent and not mentioned in the Constitution of People's Republic of China; however, every Chinese citizen knows it and is affected by it (Wang, 2005). In practice, the *hukou* system has performing the following three leading functions (Johnson, 1994; 林毅夫, 蔡昉, and 李周, 1994; Wang, 2005, 2004). First, it is the basis for resource allocation and subsidization for selected groups of the population, mainly the residents of major urban centers. Second, it restricts population migration, especially migration from rural areas to urban areas. Third, it performs the role of social control, especially the control of targeted people¹¹ (重點人口). It is indicated that

¹¹ According to Wang (2004: 127-128), the police maintain a confidential list of *zhongdian renkou* (targeted people) in each community to be specially monitored and controlled based on *hukou* files. The list of targeted people in 1953 includes non-repentant family members of the counter-revolutionaries, landlords in exile, various types of "class enemies", and "suspicious" people from outside China. In 1980, the list was revised and included only four better-clarified

from the government's perspective, running a centrally-planned economy requires the ability to allocate human resources at enterprise and sectoral levels as well as across geographic locations; *hukou* system is considered to be a necessary component of the centrally-planned economy (Liu, 2005). Wang (2005, 2004) also argued that a focused control of targeted people has contributed to the political stability of China's one-party authoritarian regime.

Hukou is the legal basis for people's personal identification in mainland China. According to *hukou* system, every Chinese citizen should be officially and constantly registered with the *hukou* authority, i.e., the *hukou* police, since birth. The category of non-agricultural *hukou* or agricultural *hukou*, the legal address and location, the unit affiliation (employment), and a host of other personal and family information, including religious belief and physical features, are documented and verified to become the person's permanent *hukou* record. *Hukou* status was defined at a person's birth on the basis of her/his mother's status, but it became inheritable through either the father's or the mother's line since 1998. There are only two types of *hukou*: agricultural and non-agricultural *hukou*. Generally speaking, rural people are registered with agricultural *hukou* and urban people with non-agricultural *hukou*. There also exists agricultural *hukou* in urban areas and non-agricultural *hukou* in rural areas; however, these cover only a negligible share of the population in these areas. Therefore, non-agricultural *hukou* and urban *hukou* are often

types of residents: those suspected of counter-revolutionary activities, suspected of other criminal activities, posing a threat to public order, and suspicious ex-convicts. In 1991, the list was further revised and extended to include six categories and 23 types of residents. The current list of targeted people consists of five categories and 20 types of residents. The five categories are 1) residents suspected of threatening national security, 2) residents suspected of serious criminal activities, 3) residents who, due to the intensification of various conflicts, have shown early signs of violent revenge, making trouble and other violent acts, 4) residents who were ex-convicts as a result of "purposeful crimes" and released within the last five years, and 5) narcotics users.

used interchangeably, so are agricultural *hukou* and rural *hukou* (Wang, 2005; Chan and Senser, 1997; Cheng and Selden, 1994).

Once a person is registered as agricultural *hukou*, there are few opportunities for him or her to change to non-agricultural *hukou*, except through recruitment by stated-owned enterprises, acquiring a college or university degree, achieving stardom in sports or other disciplines, and demobilization from military services (Chan and Zhang, 1999; Walder, Li, and Treiman, 2000; Wu and Treiman, 2003; Liu, 2005). Wong (2005) also indicated that the basic principles of migration control in China have been to restrict rural-to-urban and small-city-to-large-city migration but encourage the migration in the reversed direction. However, rarely there are persons who would like to change their non-agricultural *hukou* to an agricultural *hukou*. In a study on the impact of the *hukou* system on social and economic outcomes at the individual level in Beijing, it was suggested that the estimated value of an urban *hukou* for rural individual ranges from 2,741 Chinese Yuan to 45,654 Chinese Yuan; the value is even higher for younger individuals and for school-age children (Liu, 2005).

With *hukou* system, people are also strictly bound to the places where they are registered. It was observed that rural migrants were required to pay as many as 12 different fees to local government and obtain up to six governmental registrations or permits for employment in urban areas (Li, Stanton, Fang, and Lin, 2006). It generally took migrants at least three months and cost them from 500 to 1,000 Chinese Yuan to obtain all required documents. The documents include temporary residency permit, permit for employment, certificate of migration, health certificate, certificate of marital status, and certificate of compliance with family planning policy. Furthermore, most of these documents have to be renewed annually. Until 2003, there were serious penalties for people who violated *hukou*

system. In other word, people have to obtain proper documents if they reside or work outside the places where they are registered. Failing to produce the documents could lead people to being fined, being jailed, physical assault, and even death (Au et al., 2007).

The *hukou* system affects people's life in many aspects. It was argued that there are three main disparities in contemporary mainland China, i.e., the disparities between the peasants and the industrial workers, between the urban and rural areas, and among the regions; the *hukou* system is fundamentally responsible for all three disparities (胡鞍鋼, 王紹光, and 康曉光, 1995). In the field of social welfare, the Chinese government mainly concerns the social welfare of urban dwellers and workers in public sector. It has intervened in rural residual relief work but never been directly involved in rural social welfare (Hebel, 2004). Social welfare benefits like government subsidized housing, medical care, retirement benefits, community cultural activities, and public employment opportunities in all but menial jobs were mainly available to those with local urban *hukou* (Zhang, 2002; Wu and Treiman, 2003; Liu, 2005). Wong (1998) also argued that China's social welfare system was a mix mode with an upper tier for the urban population and a lower deck for the rural masses. Furthermore, Liu (2005) pointed out that rural-urban income differential in Beijing can be attributed mainly to the *hukou* system that denies rural residents the rights to urban life, education, and employment. Zhang (2002) made a summary of the differences of treatment by the state between agricultural and non-agricultural *hukou* before China took the reform and open-door policy in late 1970s. His summary is shown in Table 3-1 (in the next page).

Table 3-1: Treatment comparison: Agricultural hukou vs. non-agricultural hukou before the economic reform in the late 1970s

	<i>Agricultural Hukou</i>	<i>Non-agricultural Hukou</i>
<i>Basic Foods (grain, cooking oil, meat, etc.)</i>	<ul style="list-style-type: none"> • Foods were mainly self-produced and food consumption was depended on productivity. • The state assumed responsibility to assure subsistence only in the event of unusual natural disasters 	<ul style="list-style-type: none"> • Basic foods were provided by the state through official retail outlets at subsidized prices. • Food supply was rationed with low quality. Consumption level was depending on occupation as well as the administrative status of the city
<i>Employment</i>	<ul style="list-style-type: none"> • A major form of employment was collective farming. • Obtainment of urban-based jobs was subject to official permission, with limited chances. • Temporary urban jobs were available through contracts between urban enterprises and agricultural collectives. 	<ul style="list-style-type: none"> • Jobs were assigned by the state. • The position was lifetime secured. • Job changes were subject to official permission.
<i>Income</i>	<ul style="list-style-type: none"> • Income was paid by the rhythm of the agricultural cycle and distributed in kind and cash. • Income level was depended on productivity and state purchasing prices. 	<ul style="list-style-type: none"> • Income was paid in cash by month. • Income level was low but guaranteed.
<i>Housing</i>	<ul style="list-style-type: none"> • Rural housing was private owned and private-responsible. • Housing land was collective owned and assigned to private use. 	<ul style="list-style-type: none"> • Urban housing was mainly state or collective owned. • The state or collective rent housing at nominal rents. • Housing was short of supply and living conditions were poor.
<i>Right for Urban Residence</i>	<ul style="list-style-type: none"> • It was denied without authorized permission. 	<ul style="list-style-type: none"> • It was entitled only in the designated town or city.
<i>Social Security</i>	<ul style="list-style-type: none"> • Medical insurance was very limited, depending on local collective. • There was no pension scheme and care for the old aged was the responsibility of family members. 	<ul style="list-style-type: none"> • Health insurance and pension were provided by the government or enterprises. • It was enterprise-based. • Degree of security was based on types of ownership.
<i>Level of State Guarantee</i>	<ul style="list-style-type: none"> • State obligation was lower. Level of living guarantee was based on the collective/community responsibility system. 	<ul style="list-style-type: none"> • State obligation was higher. Level of living guarantee was based on the state or collective responsibility system.

Source: Zhang, L. (2002). Reform of the household registration (*hukou*) system and rural-urban migration in China: the challenges ahead. *Current Politics and Economics of China*, 3(3), 481-509.

It should be pointed out that the *hukou* system has been gradually relaxed since the 1980s. For instance, its function of resource allocation and subsidization to the urbanites has now been reduced and even replaced by the advancing market forces, because the urban rations of food and many other supplies have now either disappeared or become insignificant (Wang, 2005). However, the *hukou* system still enjoys a strong institutional legitimacy in China in the 2000s. The essential features of *hukou* system remain basically unchanged; people's socio-economic eligibility is still linked with *hukou* status despite the declining urban benefits in recent year (Chan and Zhang, 1999; Wang, 2005). For example, urban people still enjoy significant state subsidies in housing, healthcare, employment, and especially education. Chan (1996) argued that although *hukou* system has been weakened as a migration control tool since the 1970s, its discriminatory features against the rural population remain. A study, which compared the labor market returns received by people of different *hukou* status in the city of Guangzhou, Guangdong province (廣東省廣州市), found that the returns are not only a function of human capital but are also influenced by *hukou* status (Fan, 2001). It was also indicated that rural *hukou* holders can now attend schools in urban areas, but they must pay fees and tuitions that are substantially higher than those paid by urban residents (Liu, 2005). Furthermore, *hukou* system still acts a powerful force for pressing down the wages of rural migrants and preventing them from getting better jobs in the cities (Solinger, 1999; Xiang, 2005; Au et al., 2007; Whalley and Zhang, 2007).

In the analysis of life satisfaction among older people in mainland China, *hukou* is likely to be an important factor. Older people with rural *kuhou* are often denied from many of the basic privileges enjoyed by urban residents such as subsidized pension, housing,

health insurance, community cultural activities (Zhang, 2002; Wu and Treiman, 2003; Liu, 2005; Wang, 2005; Au et al., 2007). This means that compared to older people with rural *hukou*, older people with urban *hukou* tend to have more opportunities to participate in community cultural activities, receive better health care, and have less economic strain. To take economic situation of older people in 2006 as an example, as shown in the following Table 3-2, 78.0% of urban elderly have pension, but only 4.8% rural elderly have pension. The average annual income is 11,963 Chinese Yuan for rural elderly, but only 2,722 Chinese Yuan for rural elderly. Furthermore, 3.5% of urban elderly have an income below local subsistence allowance, but 23.9% of rural elderly have an income below local subsistence allowance. In addition, two national surveys on older people conducted in 2000 and 2006 in mainland China also found that 60.7 percent and 51.4 percent of rural older people did not have any formal education respectively; however, only 26.7 percent and 16.4 percent of urban elderly did not have any formal education respectively (中國老齡科學研究中心, 2003, 2008).

Table 3-2: Economic situations of the elderly in urban and rural China (2006)

Item	Urban	Rural
Percentage of older people having pension	78.0	4.8
Average monthly pension (Chinese Yuan)	990	684
Average annual income of older people (Chinese Yuan)	11963	2722
Percentages of older people with an income below local subsistence allowance	3.5	23.9

Sources: 中華人民共和國民政部 編 (2007). 《中國民政統計年鑒》
中國老齡科學研究中心 (2008). 《〈中國城鄉老年人口狀況追蹤調查〉研究報告(全文)》.

In summary, the *hukou* system has institutionalized inequality and discrimination against rural people in mainland China. It has also created a rigid social hierarchy that was transmitted across generations, involving discrimination between urban and rural areas in economic, social, civil and cultural rights (Wang, 2005; Solinger, 1999). *Hukou* is likely to influence various aspects of older people's life in mainland China. For instance, it is likely that *hukou* would affect older people's life through its influences on their activity participation, health, and income, and so on. However, little research has been conducted to examine the impact of *hukou* on life satisfaction of older people in mainland China. Furthermore, little research is conducted to look at the impact of *hukou* on the factors such as activity participation, social support, and family circumstance which frequently found to be associated with life satisfaction of older people. To develop a better understanding of life satisfaction of older people in mainland China, empirical studies are necessary to examine the relationship between *hukou* and life satisfaction of older people in mainland China. Research is also needed to look at the factors such as activity participation, social support, and family circumstance of older people between two groups of older people with different *hukous*.

Having face or *mianzi*¹⁾ (面子) in social interactions

Another concept, which may exert impact on older people's life in China but is rarely examined in previous studies, is 'face' or *mianzi*. There is a Chinese saying that "man needs to have *mianzi* and trees need to have bark" (人要面子, 樹要皮). Ho (1976) pointed out

¹⁾ There are different Chinese phonetic symbols, such as *mian-tzũ* used by Hu (1944) and *mien-tzu* used by Ho (1976) to refer to *mianzi* (面子). In this article, the researcher uses the Chinese phonetic symbol of *mianzi*, because it is the standard Chinese phonetic symbol adopted in mainland China at present and it is also adopted by researchers outside mainland China such as Earley (1997).

that “[i]t is virtually impossible to think of a facet of social life to which the question of face is irrelevant” (p.883). The concept of face is different from such constructs as authority, standards of behavior, personality, status, dignity, honor, and prestige (Ho, 1976). Face has both cultural-universal and cultural-specific aspects (Ho, 1976; Ting-Toomey, 1994). Regarding its cultural-universal aspect, Goffman (1967) emphasized face for one’s interaction with others. He stated that:

Every person lives in a world of social encounters, involving him either in face-to-face or mediated contact with other participants. In each of these contacts, he tends to act out what is sometimes called a line that is, a pattern of verbal or nonverbal acts by which he express his view of the situation and through this his evaluation of the participants, especially himself. Regardless of whether a person intends to take a line, he will find that he has done so in effect ... Face is an image of self delineated in terms of approved social attributes-albeit an image that others may share, as when a person makes a good showing for his profession or religion by making a good showing for himself. (p.5)

Ho (1976) also pointed out the importance of face in social interaction in any social system.

He wrote that:

Face is the respectability and/or deference which a person can claim for himself from others, by virtue of the relative position he occupies in his social network and the degree to which he is judged to have functioned adequately in that position as well as acceptably in his general conduct; the face extended to a person by others is a function of the degree of congruence between judgments of his total condition in life, including his actions as well as those of people closely associated with him, and the social expectations that others have placed upon him. In terms of two interacting parties, face is the reciprocated compliance, respect, and/or deference that each party expects from, and extends to, the other party. (p. 883)

Based on the above statements by both Goffman (1967) and Ho (1976), it is obvious that face is an important factor in human interaction and the desire for face is a universal phenomenon.

Although face is a universal construct, the meaning and its components elements of face vary in different cultural and social contexts (Earley, 1997; Hsu, 1996; Chang and Holt, 1994; 陳之昭, 1990; King and Myers, 1977; Ho, 1976). In Chinese cultural context, Lin (1939) referred to face, fate, and favor as three sisters who control Chinese life. He commended negatively on the influences of these three factors on Chinese people and argued that their influences have a subtle but penetrating power which it is difficult for Chinese to resist. He also indicated that face is abstract; however it is “the most delicate standard by which Chinese social intercourse is regulated” (p.200).

Hu (1944) identified that the concept of face is Chinese in origin and the term is literal translation of Chinese *lian*' (臉) and *mianzi*. *Lian* is related to one's moral reputation, i.e., the confidence of society in the integrity of ego's moral character; the loss of *lian* would make it impossible for one to function properly within a group or community (Hu, 1944). To avoid losing *lian*, one may adhere to generally accepted norms of behaviors within a group or community. *Mianzi*, according to Hu (1944) and Yang (1945), is a kind of prestige that is accumulated through getting on in one's life by means of personal effort or clever maneuvering. Bond and Kwang (1986) also maintained that *mianzi* represents prestige and honor that one accrues as a result of successes and possibly ostentations

¹ Ho (1944) and Ho (1976) used *lien* to refer to *lian* (臉). In this article, the researcher uses *lian* because this is the standard Chinese phonetic symbol adopted in mainland China at present and it is also adopted by researchers outside mainland China such as Earley (1997).

behaviors before others. However, *lian* and *mianzi* are not completely differentiated from each other; they are interchangeable in some contexts (Ho, 1976).

Bond, Wan, Leung, and Giacalone (1985) argued that the Chinese are a face-loving people and care much about the status that they occupy in society. They suggested that the love of face and concern about status is a result of the strong tendency of the Chinese to use considerations of rank and hierarchy in making socially evaluative judgments about a person. King and Bond (1985) also asserted that *mianzi* occupies a central role in the life of the typical Chinese because he or she lives in a relation-based society, where the focus is not on the individual, but on the relationship between individuals. Thus, the typical Chinese are sensitive to the relationships with other people. The failure to grant *mianzi* is likely to constitute a denial of the emotional bond between two relational partners and a refusal to acknowledge the relationship between them (Chang and Holt, 1994). However, the importance face or *mianzi* as a regulating force in social interactions depends heavily on the persons involved in the relationships (Ho, 1976; Kwang, 1987). Interactions with strangers as well as intimate persons such as family members involve just a minimum of concerns about face or *mianzi*, because the relationships with family members can be described as almost exclusively affective and the relationships with strangers can be described as almost exclusively instrumental (Kwang, 1987). Kwang indicated that only when relationships involve both affective and instrumental aspects, it has to consider face or *mianzi* of all parties involved. He also pointed out that such relationships occurs chiefly among relatives, neighbors, classmates, colleagues, teachers and students, people sharing a natal area, and so forth.

Aging is not only biological and psychological, it is also social (Atchley and Barusch, 2004). Older people's social aging is affected by the interactions they experience and by their ability to influence others through their social interactions (Antonucci and Akiyama, 1991). Based on the above discussions on face or *mianzi*, it seems that the more Chinese older people perceive themselves having face or *mianzi* in relationships among relatives, neighbors, friends, and other acquaintances, the more they feel being respected or honored, being valued, or having prestige, and hence satisfied with the relationships. As a result, they may be more satisfied with life. It was suggested that being respected by other people and receiving positive social feedback are regarded as important sources of self-concept and subjective well-being for older people (Atchley, 1991). Research has also documented that one's satisfaction with interpersonal relationships is positively associated with his or her life satisfaction (Froh, Fives, Fuller, Jacofsky, Terjesen, and Yurkewicz, 2007; Kang, Shaver, Sue, Min, and Jing, 2003). Furthermore, according to Maslow's (1970) human needs theory, people have a group of esteem needs for self-confidence, status, reputation, fame, glory, and so on above the needs of belongings and love. People's esteem needs would be satisfied if they are respected or honored by others. Therefore, for older people in mainland China, having face or *mianzi* in relationships among relatives, neighbors, friends, and other acquaintances would contribute to the satisfaction of their esteem needs. Given that the satisfaction of esteem needs would contribute to people's life satisfaction, it can be inferred that having face or *mianzi* in relationships among relatives, neighbors, friends, and other acquaintances would contribute to life satisfaction of older people.

In summary, face or *mianzi* is an important factor in human interaction. It was suggested that Chinese are a face-loving people. It was also argued that face occupies a

central role in the life of the typical Chinese because he or she lives in a relation-based society. It seems that having *mianzi* or face in relationships among relatives, neighbors, friends, and other acquaintances would contribute to life satisfaction of older people in mainland China. However, little empirical research was ever conducted to examine it. To develop a better understanding of life satisfaction among older people in mainland China, empirical research is vital to examine it.

Chinese cultural beliefs about adversity

It was argued that people with adversity or socioeconomic disadvantages do not necessarily have lower psychological well-being, because there are a wide range of psychosocial protective factors which serve to help individuals adjust despite the presence of disadvantages (Baltes and Baltes, 1990; Garmezy, 1991; Smith and Carlson, 1997; Freund and Baltes, 1998; Baltes, Freund, and Li, 2005). Among the psychosocial protective factors, cultural beliefs about adversity may influence the impact of adversity on people experiencing adversity in at least two ways (Shek, Tang, Lam, Lam, and Tsang, 2003; Shek, 2005). First, how adversity is defined and conceptualized may be influenced by cultural beliefs. Second, the coping resources and behaviors of the peoples concerned may be shaped by cultural beliefs. It was argued that culture plays an important role in defining the problem and behavioral option in the stress and coping processes (Slavin, Rainer, McCreary, and Gowda, 1991). There are also theoretical propositions in the literature on optimism and fatalism which suggest that stronger endorsement of beliefs that one control one's life is positively associate to psychological adjustment (Maddux, 1995; Bandura, 1997). "In short, cultural beliefs provide the basis upon which people experiencing

adversity makes sense of their experience and develop his or her coping” (Shek, 2005: 429). Empirical studies on the relationship between Chinese cultural beliefs about adversity and psychological adjustment in Chinese family with economic disadvantages in Hong Kong indicated that adolescents with stronger endorsement of positive Chinese beliefs about adversity displayed better psychological well-being (Shek et al., 2003; Shek, 2005); and parental endorsement of cultural beliefs about adversity was also related to parent’s psychological adjustment (Shek et al., 2003). However, no known empirical study has to date been conducted to examine the relationships between Chinese older people’s endorsement of Chinese cultural beliefs about adversity and their adjustment.

Older people in mainland China are likely to suffer physical, social, and economic disadvantages or adversity in at least two ways. First, the process of individual aging occurs with physiological, psychological, and social changes (Neuhaus and Neuhaus, 1982; Atchley and Barusch, 2004; Niccum, 2004; Ambrosino, Heffernan, Shuttlesworth, and Ambrosino, 2005). The physiological changes include the decreasing effectiveness and efficiency of the body’s immune system, endocrine glands, and nervous system. These physiological changes result in reduced capacity to mobilize physical energy, shorter stature, and lessened mobility and coordination. The chronic illness also becomes more prevalent when a cohort grows older. Social changes include the decreasing opportunities for formal socialization. In addition, retirement generally result in the decreased income for the elderly. Furthermore, even though the dramatic changes in psychology of individuals are seldom caused by the aging process, mental health problems such as depression and Alzheimer’s disease are not uncommon among the elderly.

Second, China is a developing country where urbanization and modernization is a recent process and has taken place since the adoption of the reform and open-door policy in the late 1970s. China has experienced drastic socioeconomic changes. The average annual growth rate of China's GDP was 9.4 percent from 1978 to 2001 (Han, 2004). Urbanization and social mobility tend to disperse families and technological changes tend to devalue the wisdom or life experiences of older people, leading to a loss of status and power of older people (Cowgill and Holmes, 1972; Fischer, 1977; Palmore, 1983; Cowgill, 1986). It was also found that key elements of modernization were broadly related to the declining status of older people in different societies (Clark, 1992-1993). In mainland China, some studies (e.g., Davis-Friedmann, 1991; Whyte, 1995; Yan, 1997; Benjamin, Brandt, and Rozelle, 2000; Xiang, 2005) indicate that the elderly have lost control over resources as the balance of power has shifted away from them and that there has been worsening economic standing of the elderly both inside and outside extended household. It was also suggested that the changes due to modernization and urbanization can be stressful and eroding people's life satisfaction in China (Blau and Ruan, 1990; Nee, 1991; Logan and Bian, 1993; Guan, 2001; Cheung and Leung, 2004).

Based on the above discussions, it is likely that older people in mainland China with stronger endorsement of positive Chinese beliefs about adversity may have better adjustment or psychological well-being. Thus, the present research attempts to make efforts to examine the relationship between older people's endorsement of Chinese cultural beliefs about adversity and their life satisfaction.

Summary

This chapter has a review of some factors which have been frequently found to be associated with life satisfaction among older people. The researcher focuses on activity participation, informal social support, and intergenerational relations. Some socio-demographic factors which are also frequently found to be associated with life satisfaction of older people are also briefly reviewed. These factors include sex, age, marital status, finance, education, and health. After literature review, the researcher also introduces three new factors, i.e., *hukou*, having *mianzi* in social interactions, and Chinese cultural beliefs of adversity which are likely to exert impacts on life satisfaction of older people in mainland China. More empirical research on the relationships between the above factors and life satisfaction of older people in mainland China are necessary and important due to the following reasons. First, it will be helpful to develop a better understanding about the correlates of life satisfaction of older people in mainland China. Second, it will be useful to test research findings in western society. Third, it will provide useful information for social workers to improve life satisfaction of older people in mainland China. A conceptual framework of the present study and research questions and hypotheses are present in the next chapter.

Chapter four: Conceptual framework and research questions and hypotheses

This chapter elaborates on the conceptual framework of the present study. The research questions and hypotheses are then addressed. The chapter ends with a brief summary.

Conceptual framework of the present study

The researcher adopts the ecological perspective to guide the present investigation. In this section, the researcher first states the reasons in adopting the ecological perspective. The ecological model for the present study is then presented.

Why adopt ecological perspective in the present study?

As described in chapter two, ecological perspective focuses on the interactions between individuals and their environments. The ecological model posits that a person is a part of a large environment. The person interacts with environment and there are reciprocal processes that occur. The ecological model moves away from an intrapsychic understanding of people and places people within the context of larger and competing forces (Cash and Wilke, 2003; Berry, 1994; Bubolz et al., 1980). It stresses people's biological, social, emotional, cognitive, behavioral, and cultural adaptations to either themselves, their environments, or both themselves and environments (Germain and Gitterman, 1996, 1995). Such a perspective recognizes that aging is a complex biopsychosocial process and can avoid oversimplification and reductionism in examining

older people's adaptation to aging or their life satisfaction. It can provide a potentially systematic way of organizing and looking at correlates of life satisfaction among older people. Regarding the application of ecological theory for the study of older people, Keyon (1988) also argued that research on older people must be grounded in a view of nature as personal existence, which indicates that "[h]uman beings, as persons, are not conceptualized exclusively as either individual entities or socially constructed entities. Rather, they are self-creating, but within contexts that involve various kinds of biological and social constraints" (p. 7).

Using the ecological perspective, one can analyze how various levels of environment or ecosystem contribute to life satisfaction among older people. For example, Bubolz et al. (1980) structured three conceptually distinct but interrelated environments: the natural, human constructed, and human behavioral environments¹. They argued that these environments furnish the resources and conditions necessary for life and constitute a life support system. Besides the three environment suggested by Bubolz et al. (1980), one may also views the person as developing within a complex system of relations affected by multiple levels of the environment or ecosystem and analyze how various levels of ecosystem contribute to life satisfaction of older people including the ontogenic or

¹ The natural environment is defined as "the environment formed by nature with space-time, physical and biological components" (Bubolz et al., 1980: 105). It was regarded as the basis for the human life support system. The human constructed environment is defined as "the environment altered or made by human beings" (Bubolz et al., 1980: 105). It is the product of human's intellectual and social capacities and adaptation of the natural environment to meet biopsychosocial needs and desires. It includes such constructions as educational, political, and religious systems. The human behavioral environment is defined as "the environment of socialized human beings and their inter-related behaviors: biophysical, psychological and social" (Bubolz et al., 1980: 106). It includes such constructions as family, friends, and so on.

individual system, the microsystem, the exosystem, the mesosystem, and the macrosystem⁴¹ suggested by Bronfenbrenner (1979). Following the ecological perspective, one can recognize that the correlates of life satisfaction among older people found in the previous studies were from which environment or system, such as family support from human behavioral environment suggested by Bubolz et al. (1980) or microsystem suggested by Bronfenbrenner (1979).

A scrutiny of literature review on correlates of life satisfaction or subjective well-being of older people (e.g., Larson, 1978; George, 2006; Mannell and Dupuis, 2007) revealed that previous studies on correlates of life satisfaction among older people were rather scattered and relatively few efforts were made to organize or categorize various correlates in a systematic way. Based on the previous discussion, the ecological perspective is helpful in organizing and making sense of vast amounts of information about possible correlates of life satisfaction among older people. First, it provides a broad and coherent view of the complex influences on life satisfaction among older people. Second, it can be used to organize a current summary of our knowledge about correlates of life satisfaction among older people.

⁴¹ According to Bronfenbrenner (1979), the microsystem reflects the relationships between individuals and their immediate environment. The mesosystem reflects the interrelationships among settings (i.e. the home, a day-care centre, and the schools). The exosystem refers to settings in which the person does not actively participate but in which significant decisions are made affecting the individuals who do interact directly with the person, such as neighborhood or community structure. The macrosystem reflects the attitudes and ideologies of the culture and is related to the historical and cultural context that translates into societal values and norms. Bronfenbrenner proposed that these systems are nested systems interacting and shaping individuals' development. Many researchers have expanded Bronfenbrenner's ecological model and added the dimension of the ontological (or individual) system (e.g., Belsky, 1980; Kulik, 2007; Kulik and Haine-Cohen, 2008), which includes socio-demographic characteristics of individuals and their psychological and emotional characteristics.

Based on a search of electronic databases including EBSCOhost, JSTOR, Sociological Abstract, PsycINFO, and ProQuest (Social Sciences) on the 9th November 2008, the researcher also found two empirical studies which apply ecological perspective to study correlates of life satisfaction (Zandi and McCormick, 1991; Bubolz et al., 1980). Zandi and McCormick's study was based on the ecological model developed by Bronfenbrenner (1979). They argued that Bronfenbrenner's (1979) ecological model of the social environment is applicable to difficulties faced by older people living in community and nursing home as well. They held the view that environments have the capacity or resources to support older people and suggested three ecological support systems: microsystem, exosystem, and macrosystem for older women living in community and nursing home. Consistent with their adaptation of Bronfenbrenner's (1979) ecological model, Zandi and McCormick's empirical research revealed that for older women living in community, those who have higher life satisfaction are likely to have stronger microsystem (receiving substantial support from close friend, nuclear family, and their immediate environment), stronger exosystem (felt connected to their extended family and have numerous causal, friendly relationships in their neighbors), and more connected to macrosystem (maintaining close ties with the world as a whole, e.g., corporations, government, organized religious, and so on). Their findings also indicated that older women's entry into nursing home life was associated with the break down of all three ecological systems. They found that compared to older women living in the community, older women who had recently moved to a nursing home were more likely to report an impoverished microsystem, dysfunctional exosystem, and impaired macrosystem. The findings of Zandi and McCormick's study are

consistent with the statement of Vaux (1990: 509) that “[f]rom an ecological viewpoint, ‘more is better when it comes to resources’”.

Bubolz et al. (1980) examined the perceived satisfaction with life as a whole in their empirical study to refer to the well-being or ill-being of people and /or the environment they live. However, it should be pointed out that in Bubolz et al.’s study, they regarded quality of life (QOL) equal to life satisfaction. Based on the ecological perspective, they argued that:

From the standpoint of people, QOL consists in degree of fulfillment or satisfaction of their basic physical, biological, psychological, economic, and social needs. These needs are met by resources from the environment which people exchange to meet needs. QOL from the standpoint of the environment is the degree to which the environment has the capacity to provide the resources necessary to meet needs. *Level* of QOL is assessed in relations to a *standard* at which needs should be met or relative to a standard for the resources required (italics in original text, p. 107).

Bubolz et al. pointed out that standard for some needs could be objectively determined (such as quality and quantity of food needed to meet nutritional requirement) and subjectively determined (such as the need for love and self-esteem). According to their argument, the study on correlates or indicators of life satisfaction can assess the degree or level at which basic human needs are met; at the same time, it can assess the level of resources or conditions of the environment. Based on a sample of 65 rural persons living in Ontonagon county, Michigan, USA, Bubolz et al. (1980) discovered how life concerns, representing elements of a human ecosystem, contributed to perceived overall quality of life. They identified 21 life concerns including safety, accomplishment, family life, religion, and so on and found that satisfaction with four life concerns (accomplishing something,

family life, work, and financial security) accounted for about half of the overall variance in satisfaction with life as a whole. They concluded that a human ecological model is useful to serve as a unifying framework for conceptualizing and measurement of quality of life.

Based on the above review of two studies, we can see that there are two ways to examine correlates of life satisfaction based on ecological perspective. Zandi and McCormick's (1991) study assumed that older people face various difficulties and that different levels of environment have their capacities or resources to provide support for older people; the more support capacities or resources in different levels of environment would contribute to higher life satisfaction of older people. Thus, Zandi and McCormick's study examined the capacity or resources in different levels of environment. Bubolz et al.'s (1980) study assumed that people have different needs and different levels of environment have resources or conditions to meet people's needs; the degree of satisfaction of different needs contribute to people's overall life satisfaction. Thus, Bubolz et al.'s study focused on subjective correlates (the degree of satisfaction with life needs or concerns) of life satisfaction among people. Both ways examining the correlates of life satisfaction based on ecological perspective would contribute to our understanding of life satisfaction and provide solid foundation upon which new studies on correlates of life satisfaction based on ecological perspective can be conducted.

Furthermore, besides the studies using ecological perspective by Bubolz et al. (1980) and Zandi and McCormick (1991), ecological perspective has been applied as theoretical framework in empirical studies in social work, psychology, and other fields and was found to be a useful perspective (e.g., Tam, 2008; Lai-Kwok and Shek, 2008; Kulik and Haine-Cohen, 2008; Adamsons, O'Brien, and Pasley, 2007; Kulik, 2007; Morgan and

Brosi, 2007; Cash and Wilke, 2003; Jones, Forehand, Brody, and Armistead, 2003; Huebner and Mancini, 2003; Ayyash-Abdo, 2002; Kim and Moen, 2002; Andrew, 2002; Tebb and Jivanjee, 2000; Jacobson and Wilhite, 1999; Carlson, 1984). The application of ecological perspective in these empirical studies also implies that ecological perspective tends to be a promising comprehensive theoretical framework to guide empirical research in social work and other fields. In addition, academics also argued for an ecological and holistic understanding of social phenomena, such as the adolescent substance abuse in Hong Kong (Shek, 2007) and the drop in family harmony in Hong Kong (Shek, 2006b).

In summary, there are three reasons for the researcher to adopt ecological perspective in the present study. First, the ecological perspective has the potential to bring about a systematic perspective on the study of correlates of life satisfaction among older people and is likely to fill in some of the gaps in existing theories on life satisfaction of older people. Second, ecological perspective has been already applied in the empirical studies on correlates of life satisfaction and has been suggested to be a useful framework in Western societies. Third, ecological perspective has also been applied in many empirical studies in social work and other fields and was suggested to be a useful theoretical framework.

Conceptual framework for the present study

According to the discussions and the review of two articles using ecological perspective to study the correlates of life satisfaction in the previous part in this section, we can see that there are at least two ways to adopt ecological perspective to study the correlates of life satisfaction among older people. One way is to examine the resources or conditions in different levels of environment, which provide support to older people and contribute to

life satisfaction of older people. With respect to this way, older people who enjoy good wealth and good health, are in good marriage and with good interpersonal relationships, actively participate in activities, and have *mianzi* in social interactions have higher life satisfaction. The other way is to examine older people's satisfaction with various needs in different levels of environments; the satisfaction with these needs contributes to life satisfaction of older people. With respect to this way, older people who are more satisfied with their wealth, health, marriage, interpersonal relationships, activity participation, social support, and so on are more satisfied with their life.

Based on the literature review in the previous chapter, the researcher identifies some factors which are likely to be associated with life satisfaction among older people in mainland China. The factors include activity participation, informal social support, and intergenerational relations, and social demographic variables such as sex, age, marital status, finance, education, and health. Furthermore, the researcher also suggested three new factors i.e., *hukou*, having *mianzi* in social interactions, and the positive endorsement of Chinese cultural beliefs about adversity. These three variables are also likely to exert impacts on life satisfaction among older people in mainland China. The present study is to examine whether these factors are the correlates of life satisfaction among older people in mainland China. To integrate the factors in a systematic way, the researcher follows the human ecological model proposed by Bronfenbrenner (1979, 2000).

With respect to Bronfenbrenner's (1979) human ecology, it looks at a child's development within the context of the system of relationships that form his or her environment. He specified four types of nested environmental systems, with bi-directional influences within and between the systems. The microsystem is the level closest to the

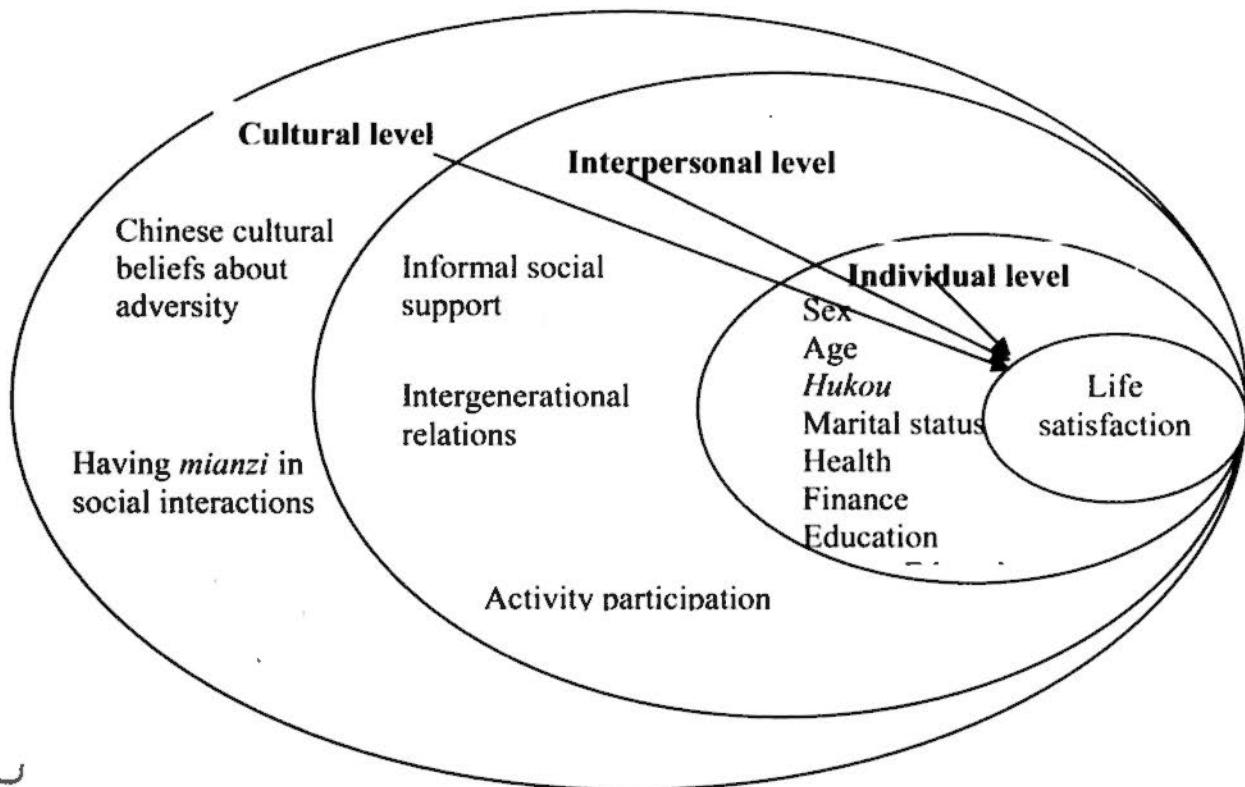
child and includes the structures with which the child has direct contact, such as family. The mesosystem is the second level and comprises connections between immediate environments, such as the connection between the child's teacher and his or her parent (Berk, 2000). The exosystem is the third level and only indirectly affects the child's development such as parent's workplace. The macrosystem is the outermost level of the child's environment and is comprised of cultural values, customs, and laws (Berk, 2000). Another system which is not specified by Bronfenbrenner but is indicated and added by other scholars such as Belsky (1980), Kulik (2007), and Kulik and Haine-Cohen (2008) is ontological or individual system. This system reflects individual's personal characteristics such as sex, age, personality traits, and so on. One of the underlying assumptions of Bronfenbrenner's human ecology is that the child's development occurs in a continuing process of mutual interactions between the child and his or her environment. This approach also resembles the individual in context approach articulated by Hinde (1998). Furthermore, it was indicated that the approach of the individual in context was widely used in the studies of individual characteristics in different relationship under different social and ecological contexts (Andrew, 2002).

With reference to human ecology proposed by Bronfenbrenner (1979), life satisfaction of older people is seen as the cumulative outcomes of interactions between older people and their environment. It is acknowledged that all the five systems of environment in Bronfenbrenner's human ecology are likely to exert impacts on life satisfaction among older people. However, it is beyond the scope of the present study to cover all five systems or levels of environment to study life satisfaction among older people, because of the limited time and financial resources available to the researcher. In fact, due to the difficulty

to apply all five of the ecological system in Bronfenbrenner's model simultaneously, researchers generally have used only a few of them to examine a variety of variables (e.g., Huebner and Mancini, 2003; Kulik, 2007; Kulik and Haine-Cohen, 2008).

Based on Bronfenbrenner's (1979, 2000) way to integrate environment factors, the factors that the researcher intends to examine in the present study are identified in three levels, i.e., individual, interpersonal, and cultural levels. The individual level variables include background variables sex, age, marital status, *hukou*, health, education, and finance. The interpersonal level variables includes informal social support, activity participation, and intergenerational relations. And the cultural level variables include Chinese cultural beliefs of adversity and having *mianzi* in social interactions. The proposed conceptual framework of correlates of life satisfaction among older people in the present study is shown in Figure 4-1 (in the next page).

Figure 4-1: The conceptual framework of correlates of life satisfaction among older people in the present study



It should be pointed out that face or *mianzi* has both cultural-universal and cultural-specific aspects (Ho, 1976; Ting-Toomey, 1994). The present study is mainly concerned about and intended to examine Chinese cultural-specific aspects of face or *mianzi* as described by Ho (1976) and Kwang (1987). Thus, having *mianzi* in social interactions is regarded as a cultural factor in the present study. With respect to the variable of *hukou*, although it is a social policy product, it has become a symbol of personal and social status as addressed in the previous chapter. Therefore, *hukou* is regarded as an individual factor in the present study.

It should also be noted that ecological perspective mainly provides a systematic way of organizing and looking at things. There are many branches of ecology, such as systems ecology, plant ecology, population ecology, human ecology, linguistic ecology, and so on (Molles, 2002; Fill and Mühlhäusler, 2001; Odum, 1983; Carlstein, 1982). The present study adopts Bronfenbrenner's (1979, 2000) human ecological model as the basis, because it provides a useful guideline to integrate the variables that the researcher intends to examine in a systematic way.

Furthermore, the above conceptual framework based on ecological perspective in Figure 4-1 only indicates that the variables in three different levels are likely to exert impact on life satisfaction of older people in mainland China. The framework does not suggest that any variable at any level is mandatory for life satisfaction of older people. The framework also does not indicate that the researcher intends to explore an equilibrium state or trait of life satisfaction of older people. What variables are mandatory for life satisfaction of older people and what is the equilibrium state or trait of life satisfaction of older people are

beyond the present research focus and need other research. In addition, the above framework does not mean that one need to satisfy all elements within a concentric zone before he or she moves to the next or that the levels are hierarchical.

Actually, the Figure 4-1 is expressed in this way just to show that the variables in interpersonal level are more immediate surrounding environment for older people than the variables in cultural level, with reference to Bronfenbrenner's (1979, 2000) human ecological model. In short, the present study is to examine the relationship between life satisfaction and its possible correlates. Based on the human ecology proposed by Bronfenbrenner (1979, 2000), the researcher identifies and examines three levels of potential correlates of life satisfaction among older people.

Research questions and hypotheses

The present study is to examine the factors associated with life satisfaction of older people in Fujian, China. Based on the literature review in chapter three and the framework represented in Figure 4-1 in the previous section in this chapter, the research questions and hypotheses in the present study are listed below.

RQ1: What are relationships between variables in individual level (sex, age, marital status, *hukou*, education, finance, and health) and life satisfaction of older people?

H1-1: It is likely that married older people have higher life satisfaction than older people who are widowed, single, separated, or divorced.

H1-2: It is likely older people with a non-agricultural *hukou* have higher life satisfaction than older people with an agricultural *hukou*.

H1-3: Older people' education would be positively associated with their life satisfaction.

H1-4: Older people' finance would be positively associated with their life satisfaction.

H1-5: Older people' health would be positively associated with their life satisfaction.

Given that the findings of the relationships between the variables of sex and age and the variable of life satisfaction of older people are conflicting, the researcher does not make hypotheses about the relationship between sex and life satisfaction as well as the relationship between age and life satisfaction.

RQ2: What are relationships between variables in interpersonal level (leisure activity participation, intergenerational relations, and informal social support) and life satisfaction of older people?

H2-1: Older people' leisure activity participation would be positively associated with their life satisfaction.

H2-2: Older people' intergenerational relations would be positively associated with their life satisfaction.

H2-3: Older people' informal social support would be positively associated with their life satisfaction.

RQ3: What are relationships between variables in cultural level (Chinese cultural beliefs of adversity and having *mianzi* in social interactions) and life satisfaction of older people?

H3-1: Older people with stronger endorsement of positive Chinese beliefs about adversity would have higher life satisfaction.

H3-2: Older people who report higher levels of having *mianzi* in social interactions would have higher life satisfaction.

RQ4: What are patterns of correlates of life satisfaction for the two groups of older people with different *hukous*?

H4-1: It is likely that pattern of correlates of life satisfaction will be different between the two groups of older people with different *hukous*.

Summary

This chapter presents conceptual framework and addresses the research questions and hypotheses of the present study. The researcher follows the ecological perspective to guide his discussion and make connections between independent variables and dependent variable of older people's life satisfaction. With reference to human ecology proposed by Bronfenbrenner (1979, 2000), the researcher identifies and examines the contribution of three levels of potential correlates of older people's life satisfaction. The three levels or systems are individual level, interpersonal level, and cultural level. Based on the literature review and conceptual framework presented, the research questions and hypotheses are also addressed in this chapter. The methodology related to the present study is presented in the next chapter.

Chapter five: Research methodology

This chapter elaborates on the methodological issues related to the present research. Research design, sampling, data collection, conceptual definitions, measuring instruments, and data coding and analysis are addressed.

Research design

The present research employs quantitative research method. It is conducted in Putian, Fujian, China. With regard to quantitative research, the present study applies a cross-sectional survey. The quantitative research in the present study is multifaceted. It will describe selected characteristics of a particular group of older people and examine the relationships among the variables.

Why apply quantitative research method?

Research methodology applies or entails scientific procedures to acquire answers to research questions (Rubin and Babbie, 2005; Dudley, 2005). Research methodology implies an understanding of the assumptions underlying various techniques and provides a basis to judge which way would be better to reach the same goal (Dhondyal, 1991). A wide variety of research methods from the social and health sciences are eclectically employed in social work research (Tripodi and Potocky-Tripodi, 2007). However, two research methods, i.e., qualitative method and quantitative method, have been in the center of much debate since the early 1980s in social work (Rubin and Babbie, 2005). The selection of a research method depends on the type of research questions and objectives, the amount of

literature available to properly investigate the research topics, the stage of one's thinking about them, and the researcher's personal interests, and so on (Baker, 1998; Rubin and Babbie, 2005).

Qualitative research involves the study the meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things (Berg, 2007). It collects, analyzes, and interprets data by observing what people do and say. Qualitative measurement uses common concepts or symbols, or introduces new ones to describe attributes. It emphasizes "the exploration of reasons for behaviour and the ways in which behaviour unfolds: needing exploration, explanation, description, and illustration" (Drew, Hardman, and Hart, 1996: 162). Qualitative data are soft data, in the form of words, impressions, sentences, photos, symbols, and others (Neuman, 2006). Qualitative researchers frequently emphasize doing detailed examinations of cases in the real social settings. They often rely on interpretive or critical social sciences. Qualitative research is much more subjective than quantitative research and uses very different methods of collecting information, mainly individual, in-depth interviews, and focus groups (Rubin and Babbie, 2005; Berg, 2007).

Quantitative research is a formal, objective, and systematic process and utilizes numerical data to obtain information about the world (Burns and Grove, 2005). Quantitative research involves the use of structured questions where the response options have been predetermined and a large number of respondents are involved (Rubin and Babbie, 2005; Neuman, 2006). Quantitative data are hard data in the form of numbers. Measurement in quantitative research must be objective, quantitative, and statistically valid. Quantitative measurement basically relies on quantitative techniques and follows some

established analytical processes. Quantitative data are analyzed after the process of data collection is finished and there are rules and principles to follow in analyzing quantitative data. The results of the quantitative research are objective (Rubin and Babbie, 2005; Sarantakos, 2005).

The present study is to identify factors which may exert impacts on life satisfaction among older people in mainland China. The study intends to describe and examine relationships among the dependent variable of life satisfaction and some independent variables. The independent variables of sex, age, marital status, *hukou*, education, are objective and are quantifiable. The independent variables such as finance, informal social support, activity participation, intergenerational relations, Chinese cultural beliefs of adversity, and having *mianzi* in social interactions and the dependent variable of life satisfaction can also be measured by quantifiable scales. In short, the present study plans to examine relationships among variables which are quantifiable. The researcher can utilize numerical data to obtain information for the present study. Therefore, quantitative research method is adopted in the present study.

Why choose Putian, Fujian?

Fujian is one of the provinces facing Taiwan (臺灣) across the sea to the east. It boards Guangdong to the south, Zhejiang (浙江) to the north, and Jianxi (江西) to the west. Fujian had a population of 35.58 million in 2006, among them 3.44 million were aged 65 and over, accounting for 9.4 percent of total population (福建省人民政府, 2007). As described in the first chapter, little research has been conducted to investigate life satisfaction of older people and the correlates of their life satisfaction in Fujian. The researcher can only obtain

one empirical research (張友琴, 2002) which involved the examination of life satisfaction of older people in the city of Xiamen (廈門). If we expect social workers to work effectively and efficiently with older people to improve life satisfaction of older people in Fujian, more empirical studies research is undoubtedly necessary to develop a better understanding about the correlates of their life satisfaction in Fujian. With this concern in mind, the present study is conducted.

Within Fujian, the researcher chooses Putian to conduct the research due to the following two reasons. First, the researcher is a native of Putian city. He is familiar with the place and people living there. His familiarity with the city of Putian is helpful for him to communicate with older people and conduct data collection. Second, little empirical research on life satisfaction of older people or correlates of life satisfaction of older people was ever conducted in Putian. This study will contribute to people's understanding of the extents of life satisfaction among older people living in Putian and the correlates of life satisfaction among older people living in Putian.

Regarding the city of Putian, it is situated in the central coastal area of eastern Fujian Province. It is the hometown of the world-renowned Mazu (馬祖), the goddess of the sea. The city faces Taiwan (臺灣) across the sea to the east. It borders the city of Quanzhou (泉州) on the south and west and adjoins the city of Fuzhou (福州), the capital of Fujian Province, on the north. It has an area of 4,200 square kilometers and a population of 3.02 million (莆田市人民政府, 2007a). The municipal region comprises four districts and one county, i.e., Chengxiang District (城廂區), Hanjiang District (涵江區), Licheng District (荔城區), Xiuyu District (秀嶼區), and Xianyou County (仙遊縣). The Puxian Hua (莆仙

話) is the largest dialect spoken in Putian. There are 365, 000 older people aged 60 and above in Putian, accounting for 12.97 percent of total population in 2007 (莆田市人民政府, 2007b).

Sample

The present study applies a non-probability or convenience sampling. This is due to the following two reasons. First, the primary intention of the present study is not to generalize the results to broader population, but to gain more insight into the subject of inquiry and contribute to developing a solid foundation for further studies on the factors associated with life satisfaction among older people in mainland China. Second, non-probability sampling is the most economic and fastest approach considering the lack of sufficient financial support available for the present research. Therefore, the researcher mainly chooses the places where older people gather to approach older people in the present study, such as temples, activity centers for the elderly, parks, and so on. Because older people who gather in one temple or activity center may share common characteristics such as the strain of finance, education level, and so on, the researcher thus decides not to interview more than 25 older respondents in one temple, activity center, or park in the present study. Given that the present study involves retrospective thoughts, monetary estimates and projections, and estimates of relationship with other people, all older respondents are required to be mentally able for daily social and mental functioning. In the present research, the correlates of life satisfaction will be examined for two groups of older people with different *hukous* independently. The sample of the present study includes 263 older people with an agricultural *hukou* and 269 older people with a non-agricultural *hukou*.

Data collection

The data in the present study are collected within December 2008 to February 2009. Considering that many older respondents may have difficulty in reading and writing because of poor education or poor vision, this study adopts a face-to-face interview approach using a questionnaire composed mainly of close-ended questions. The anonymity and confidentiality of replies is emphasized to encourage honest responding. The interview starts after the oral consent of the older residents is obtained. About 30 minutes are required to complete the questionnaire.

Besides the researcher's personal efforts to interview older people, sixteen local people in Putian are also employed as research assistants to interview older participants in the present study. Six research assistants are senior students majoring in journalism in Putian University. The other ten research assistants all graduated from colleges or universities. All research assistants speak both local dialect of Putian and Mandarin fluently and do not have language difficulty to communicate with local older people in Putian. Given that research assistants have to work or study from Monday to Friday, they generally conduct data collection on Saturday or Sunday.

Before the survey, a meeting is held with the researcher to explain the importance of the study to research assistants. The researcher also introduces them the purpose of the present study and the contents of the questionnaire. The research assistants are trained and strictly required 1) to explain to older respondents the purpose of study and stress the importance of older people's assistance and cooperation; 2) to emphasize to older respondents that there are no right or wrong answers to the majority of questions in the questionnaire; 3) to

conduct data collection before oral content of older respondents are obtained; 4) to inform older people that participation in the survey is voluntary and they can quit the interview freely or withdraw their participation from the research at any time; 5) to only read the questions to older people and leave the older people to choose response items or answer questions alone; and 6) to check the questionnaire after the interview to ensure the completion of all questions in the questionnaire. Furthermore, the researcher asks research assistants to follow the manner in which the questionnaire will be administered. The research assistants are required to practice administering the questionnaire during the meeting. The dates and time are also scheduled for data collection and return of the questionnaire to the researcher.

Although the researcher is not able to anticipate all of the questions that older participants may ask before agreeing to participate, several possible questions are successfully anticipated and responses are prepared beforehand. For example, the researcher anticipates that the older people are likely to ask: "What kind of questions do you want to ask?" The responses include the following: "We are interested in how older people in our Putian are getting along these days;" "We want to know something about your relationships with other people and ask you about your attitudes concerning some things;" and so on. A second anticipated question is "Why are you doing this?" Possible responses include the following: "There are many such kinds of research in other countries or areas such as the United States or Hong Kong. However, we know little about older people in our Putian and we hope to know how older people in our Putian compare with others;" and "We want to know more about the lives of older people in our Putian." A third anticipated question is "What is going to come of this study?" The possible responses

include the following: "This will add to our understanding of older people's aging in our Putian;" and "The results of the study may be used in developing policy and programs for the aged in our Putian, although we can not ensure at this time that the research results will be of direct value to you."

In addition, after the first submission of the completed questionnaire to the researcher, each interviewer is asked about the difficulty to contact the respondents, the respondent's reaction to the interview, any confusion about the questions in the questionnaire, and the effect that the presence of anyone else had on the interview. The interviewers are informed about the researcher and other interviewers' feedback about the interviews to ensure that they can pay special attention to the problems that others report.

Conceptual definitions

The following terms are defined as they are used in the present study.

Older people

According to *Law of the People's Republic of China on the Protection of Rights and Interests of the Aged*, older people are defined as those aged 60 years or over. In the present study, older people refer to people who are aged 60 and over and possess a local Putian *hukou* in Fujian, China.

Hukou

In the present study, *hukou* refers to permanent residence that is officially registered by local government and is shown in one's household registration record (戶籍本). The

household registration record, issued per family in mainland China, is a booklet that records information about the family members, including name, birth date, relationship with each other, marriage status, *hukou*, address, and so on (Wang, 2005). There are only two types of *hukou* in China, i.e. non-agricultural *hukou* and agricultural *hukou*.

Life satisfaction

As discussed in chapter two, life satisfaction is a cognitive evaluation of one's life experiences, spanning one's entire life (DeNeve and Cooper, 1998). The definition of life satisfaction as "a global evaluation by the person of his or her life" (Pavot et al., 1991: 150) is adopted in the present study.

Activity

Activity is a contested term. There are many classifications of activity in social gerontological literature (e.g., Lemon, Bengtson, and Peterson, 1972; Kelly, 1987; McKechnie, 1975). Based on the studies by Ragheb and Griffith (1982) and Boley (2001), in the present study, activity refers to eight categories of leisure activity (mass media, reading, social activities, outdoor activities, sports activities, spectator sports, cultural activities, and hobbies).

Informal social support

In the present study, informal social support refers to the support that older respondents receive from their family members, relatives, friends, and neighbors.

Intergenerational relations

In the present study, intergenerational relations refer to the relationships between older respondents and their children.

Having *mianzi* in social interactions

According to Kwang (1987), *mianzi* occurs chiefly among relatives, neighbors, classmates, colleagues, teachers and students, people sharing a natal area, and so forth in Chinese society. In the present study, having *mianzi* in social interactions in the present study refers to receiving positive social feedback such as being respected or honored and having prestige in social interactions with relatives, friends, and neighbors. Having *mianzi* in social interaction with others such as classmates, teachers, and so on are not examined, because many older people especially rural older people do not have any formal education (中國老齡科研中心, 2003, 2008) and do not have classmates, teachers, and so on.

Chinese cultural beliefs of adversity

Adopted from the studies by Shek et al. (2003) and Shek (2005), Chinese cultural beliefs of adversity in the present study refer to two categories of beliefs: 1) Chinese cultural beliefs about the positive values of adversity and men's capacity to overcome adversity, and 2) Chinese cultural beliefs about men's inability to change adversity and the negative impact of adversity.

Measuring instruments

Measurement involves translating observations into meaningful categories or numbers. The followings are measuring instruments in the present study. The full questionnaire for the present investigation is shown in Appendix A.

Life satisfaction: Older respondent's life satisfaction is measured by the 5-item Satisfaction with Life Scale (SWLS) designed by Diener, Emmons, Larsen, and Griffin (1985) to measure global life satisfaction. Participants responded to SWLS according to a seven-point Likert-type scale (ranging from "strongly disagree" to "strongly agree"), with higher scores indicating a greater level of satisfaction with life. SWLS was proven to have a good 2-month test-retest correlation coefficient of .82 and an internal consistency (Cronbach's $\alpha = 0.87$) (Diener et al., 1985). It was also asserted that the structure and reliability of the SWLS are universal (Balatsky and Diener, 1993; Biswas-Diener and Diener, 2001). Diener et al. (1985) argued that the SWLS is suitable for use with the elderly and the groups of younger adults. The scale has been used to measure life satisfaction of older people (e.g., Cheng and Chan, 2006b; Minardi and Blanchard, 2004; Smith, Sim, Scharf, and Phillipson, 2004; Jin, 2001). A five-item Chinese version of the SWLS was developed by Shek (1998). Internal consistencies of SWLS scores ranged from .71 to .82 for samples of Chinese participants in Hong Kong (Sachs, 2003; Shek, 1998, 2005). The construct validity of the Chinese SWLS was also supported by its correlation with a single item satisfaction measure (Leung and Leung, 1992). In the present study, the Chinese version of the SWLS developed by Shek (1998) is used.

Activity participation: Following Ragheb and Griffith (1982) and Boley (2001), activity participation in the present study is measured by adopting, modifying, and reducing the Leisure Activities Blank (LAB, 120 items) developed by McKechnie (1975). The 120 items is judged to be too long for older respondents in the present study, because answering all 120 items about leisure activity participation would take older people considerable time and may become a serious burden for the elderly respondents. Therefore, the leisure activities are reduced to eight leisure categories as adopted by Ragheb and Griffith (1982) and Boley (2001). The eight categories include 1) mass media (e.g., watching television, listening radio), 2) reading (e.g., books or magazines), 3) social activities (e.g., playing cards, dances, parties), 4) outdoor activities (e.g., fishing, gardening), 5) sports activities (e.g., playing tennis, walking, jogging), 6) spectator sports (e.g., watching football, basketball, tennis), 7) cultural activities (e.g., local opera, museums concerts), and 8) hobbies (e.g., arts and crafts, painting, wood work). Respondents are asked to rate how often they participated in these eight leisure categories. Responses range from 1 (never) to 5 (very often). The score of activity participation is obtained by adding the scores of eight different categories of leisure activities. The face validity of the scale is determined by the researcher's supervisor, an expert in social gerontology. The scale is translated from English to Chinese and then translated back to English by a translator to ensure the quality of the translation. The translation is also counter-checked by another two bilingualists in English and Chinese and the researcher's supervisor who is also a bilingualist in English and Chinese. Efforts are made to ensure that the Chinese version of the scale is an appropriate

translation of English version and conveys both a literal and a comprehensive meaning in Chinese.

Informal social support: The present study uses two measures of informal social support, i.e., perceived social support network and satisfaction with social support. Based on the literature review in chapter three, both perceived social support network and satisfaction with social support are likely to be associated with life satisfaction of older people. Both measures are used in the present study because it can provide the researcher the opportunity to identify which measure has the strongest correlation with life satisfaction of older people. Perceived social support network is measured with Lubben Social Network Scale (LSNS; Lubben, 1988; Lubben and Gironde, 2003), which was developed specifically for use among older people. LSNS was translated into Chinese by Chi and Boey (1992). It was used in a comparative study on the quality of life between the elderly in mainland China and the elderly in Hong Kong (齊鈺, 1998). The Chinese version of LSNS was also used in a longitudinal study of determinants of life satisfaction in Hong Kong Chinese elderly (Chou and Chi, 1999). Lubben (1988) reported that the original scale's Cronbach's alpha was 0.70. In the study by Chou and Chi (1999), the Cronbach's alpha for LSNS was 0.72. The original LSNS was revised in 2002 (LSNS-R) along with an abbreviated version (LSNS-6) and an expanded version (LSNS-18) (Lubben and Gironde, 2003). Lubben and Gironde (2003) indicated that the improved psychometrics and ease of administration were the primary reasons for revising the original LSNS. They also suggested that the LSNS-6 would be more appropriate than longer instruments as a screener for social isolation in practice settings. Lubben, Blozik, Gillmann, Iliffe, Kruse, Beck, and Stuck (2006)

evaluated the LSNS-6 among a sample of older adults in Hamburg (Germany), Solothurn (Switzerland), and London (UK) and concluded that the LSNS-6 should be considered for inclusion in practice protocols of gerontological practitioners. They found that across these three samples of older adults, the LSNS-6 showed high internal consistency and a consistent factor structure. The internal consistency for the LSNS-6 was consistent across three sites ($\alpha = 0.83$). Therefore, LSNS-6 is used in the present study. The LSNS-6 is translated from English to Chinese and then translated back to English by a translator to ensure the quality of the translation. The translation is also counter-checked by another two bilingualists in English and Chinese and the researcher's supervisor who is also a bilingualist in English and Chinese. Efforts are made to ensure that the Chinese version of the scale is an appropriate translation of English version and conveys both a literal and a comprehensive meaning in Chinese.

Satisfaction with social support is a composite measure adopted from the study by Phillips et al. (2007). It is measured by using a 5-point Likert scale that range from 1 for "very dissatisfied" to 5 for "very satisfied" to assess the respondents' satisfaction with support from each support source, i.e., family members, relatives, friends, and neighbors. The score of satisfaction with social support is obtained by adding the four scores of satisfaction with support from different sources.

Intergenerational relations: The present study uses three measures of intergenerational relations, i.e., family harmony, filial support, and filial discrepancy. According the literature review in Chapter three, all these three variables have been found to be correlated with life satisfaction of older people in Chinese societies. The present study includes all

these three variables so that the researcher can attempt to explore which of the three variables has the strongest correlation with life satisfaction of older people. Regarding family harmony, it is measured by asking the respondents to indicate whether their family is harmony by using a 5-point Likert scale, with 1 for “very disharmonious”, 2 for “disharmonious”, 3 for “neutral”, 4 for “harmonious”, and 5 for “very harmonious”. Some scholars also applied such a single item to measure family harmony in their studies. For example, Zhang and Yu (1998) applied a single item to measure the family harmony in their study on life satisfaction among older people in mainland China. Lau, Lew, Hau, Cheung, and Berndt (1990) applied a single item to measure family harmony in their study on relations among perceived parental control, warmth, indulgence, and family harmony of Chinese in mainland China. In addition, Roth and Robbins (2004) used a single item to measure family harmony in their study on mindfulness-based stress reduction and health-related quality of life in USA.

With regard to filial support, older respondents are asked to indicate the frequency of six filial behaviors of their children in the past year by using a 5-point Likert scale that range from 1 for “very little” to 5 for “very much”. The six behaviors are taking care, assisting financially, respecting, obeying, showing considerations, and greeting. The score of filial support is obtained by adding the six scores of filial behaviors. These six behaviors of filial piety were used by Kwan et al. (2003) in their study on filial piety concept among the young, the adult, and the old in Beijing, Guangzhou (廣州), Hong Kong, Nanjing (南京), Shanghai, Xiamen (廈門), and Xian (西安). The score of filial support is obtained by adding the six scores of filial behaviors of older people’s children. The composite measure of these six filial behaviors displayed adequate reliability in Kwan et al.’s (2003) study.

Kwan et al. (2003) also identified that these six aspects of filial piety appeared in prior studies (e.g., Ng, Loong, Liu, and Weatherall, 2000; Yue and Ng, 1999). In addition, Gallois, Giles, Ota, Pierson, Ng, Lim et al. (1999) also used these six items to measure filial piety in the study on the impact of filial piety on intergenerational communication across the Pacific Rim.

In terms of filial discrepancy, older respondents are asked to rate the degree to which the same six filial behaviors of their children met their expectation in the past year, on a 5-point scale (1 = very much below my expectation, 2 = somewhat below my expectation, 3 = almost meet my expectation, 4 = somewhat above my expectation, and 5 = very much above my expectation). The score of filial discrepancy is obtained by adding the six scores of older people's expectations about filial behaviors.

Having mianzi in social interactions: In the present study, older people's perceptions of having *mianzi* in interactions with relatives, friends, and neighbors are examined. The respondents are asked to indicate the degree of having *mianzi* characterizing each interaction (i.e., with relatives, friends, and neighbors respectively) on a 5-point Likert-type scale ranging from 1 (very little) to 5 (very much). The score of having *mianzi* in social interactions is obtained by averaging the three scores of having *mianzi* in social interactions with relatives, friends, and neighbors. The face validity of the scale is also determined by the researcher's supervisor, an expert in social gerontology.

Chinese cultural beliefs of adversity: In the present study, the scale to measure Chinese cultural beliefs of adversity is adopted from the studies by Shek et al. (2003) and Shek

(2005). There are nine items in the scale. They include 1) *Chi de ku zhong ku, fang wei ren shang ren* ¹ (hardship increase stature); 2) *Hao chou ming sheng cheng* ² (whether a life is good or bad depends on fate); 3) *You zhi zhe shi jing cheng* ³ (where there is a will, there is a way); 4) *Zhi yao you heng xin, tie zhu mo cheng zhen* ⁴ (if you work hard enough, you can turn a iron rod into a needle); 5) *Ren qong zhi duan* ⁵ (poverty stifles ambition); 6) *Jiang qin bu zhuo, qin jian nai ku* ⁶ (diligence is an important factor to overcome poverty); 7) *Ren ding sheng tian* ⁷ (man is the master of his own fate); 8) *Zhi Zu chang le* (a contended person is always happy); and 9) *Jiang xiang ben wu zhong, nan er dang zi qiang* ⁸ (man is not born to greatness, he achieves it by his own effort). Items 2 and 5 assess negative cultural beliefs of adversity and other items assess positive cultural beliefs. For items 6 and 9, equivalent meaning in plain Chinese language are used, because some older people may have difficulty in understanding the meaning embedded in the original classical Chinese expression. These two items with plain Chinese language are also used by Shek (2005). For each item, the respondents are asked to indicate their degree of agreement with the item on a 6-point scale. The scores of items 2 and 5 are reverse and the score of Chinese cultural beliefs of adversity is obtained by adding the scores of nice items. Higher scores refer to a higher degree of agreement with positive beliefs about adversity.

¹ 吃的苦中苦，方為人上人。

² 好醜命生成。

³ 有志者，事竟成。

⁴ 只要有恆心，鐵柱磨成針。

⁵ 人窮志短。

⁶ 將勤補拙，勤儉耐苦。

⁷ 人定勝天。

⁸ 知足常樂。

⁹ 將相本無種，男兒當自強。

Socio-demographic variables: The socio-demographic information is consisted of but not limited to sex (1 = male, 2 = female), age (in years and based on identity card), education (in years of formal education), marital status (1 = married, 2 = single, 3 = widowed, 4 = separated, 5 = divorced), and *hukou* (1 = non-agricultural *hukou*, 2 = agricultural *hukou*).

Finance: the present study uses two measures of older respondent's finance, i.e., annual income and financial strain. Regarding annual income of older respondents, they are asked to estimate their annual income in Chinese Yuan in the past year. The responses range from 1 = less than 1,000 Chinese Yuan to 11 = 10,000 Chinese Yuan and more.

The scale to measure financial strain is copied from a study on financial strain and life satisfaction in Hong Kong elderly Chinese by Chou and Chi (2002). The scale is based on four items. Three items ask respondents whether they have enough money to pay for their needs in food, in medical services, and daily expense, using a three-point scale ranging from 1 = enough to 3 = not enough. The fourth item asks respondents to rate how difficult it is for them to pay their monthly bill using a four-point scale, ranging from 1 = not difficult at all to 4 = very difficult. A sum of the scores of these four items is computed, with higher scores indicating great financial strain. The Cronbach's alpha of the scale in Chou and Chi's (2002) study was 0.91.

Health: the present study uses two measures of older respondent's health, i.e., functional health and self-rated health. Regarding the assessment of functional health, the instrument

known as Physical Activities of Daily Living (ADL) from Multidimensional Functional Assessment Questionnaire (OARS, Kane and Kane, 1981; Center for the Study of Aging and Human Development, 1975) is used in the present study. Functional health is assessed in the present study because it was frequently reported that older people with better functional abilities have higher level of satisfaction (Kruzich, Clinton, and Kelber, 1992; Blazer, Hughes, and George, 1992; Ho et al., 1995; Newsom and Schulz, 1996; Chou and Chi, 1999; Borg et al., 2006). The modified version of ADL used in the gerontological studies in Hong Kong by Chi and Lee (1989) and Chi and Boey (1992) is adopted in the present study.

Self-rated health of older respondents in the present study is measured by asking 'How would you rate your present health?' The response format has five alternatives: 1 = very poor, 2 = poor, 3 = fair, 4 = good, and 5 = very good. Self-rated health was frequently used to assess health conditions for older people including the Chinese people (Chi and Boey, 1993; Bjorner, Kristensen, Orth-Gomér, Tibblin, Sullivan, and Westerholm, 1996; Lou, 2008). It was also suggested that a single self-reported item was a valid measure of health status among older people (Moossey and Shapiro, 1982; Idler and Angel, 1990; Liang, Bennett, and Gu, 1993).

In order to avoid issues with ambiguous meaning or inappropriate to the local context of Putian, a pilot study is conducted by interviewing seven elderly people. Two older people with a non-agricultural *hukou* who are from Putian and visit his son (the researcher's friend) in Hong Kong is interviewed face-by-face by the researcher on December 11th 2008. Three older people with an agricultural *hukou* and two older people with a non-agricultural *hukou*

are interviewed through telephone by the researcher on December 11th and 12th 2008. The results of the pilot study indicate that there is not ambiguous meaning or inappropriate issue to local context of Putian in the questionnaire.

Data coding and analyses

The data collected by survey questionnaires in the present study are coded and analysed by using Statistical Package for the Social Sciences (SPSS) 15.0 for Windows. Prior to data entry, all questionnaires are checked for completeness. If a questionnaire has not been filled in completely, it is excluded and is not used in the present study. Prior to any substantial analysis, all data are checked for entry errors. Frequencies and histograms are generated for all variables to assess distributions and outlying cases. To determine if independent variables are associated significantly with life satisfaction, the techniques of bivariate analyses are first used. Control variables are then examined using multivariate analysis. The present study involves the test of hypotheses and the examination of direct effect models. T test, ANOVA, correlation analysis, and regression analyses are the main statistical strategies applied to examine the relationship between independent variables and dependent variable.

It should be pointed out that although structural equation model (SEM) has been increasingly used in social sciences and behavior sciences, especially in psychology (Hox and Bechger, 1998; MacCallum and Austin, 2000; Tomarken and Waller, 2005), it is not used in the present study. SEM is a powerful statistical technique testing and estimating causal relationships because of its comprehensiveness in covering different techniques such as factor analysis, path analysis, and regression analysis. SEM is different from other

simpler modeling processes given its capacity to distinguish between indirect and direct relationships between variables and to specify structural relations among latent variables (Hoyle, 1995; Hox and Bechger, 1998). However, Wu and Zumbo (2008) pointed out that the examination of mediation and moderation effects requires an integrated research plan from articulating the theoretical rationale, choosing a research design, analyzing data, to drawing conclusion. In the present study, only direct effect model will be performed to examine the impacts of three systems of variables on life satisfaction of older people. The investigation of mediation effects or indirect relationships between independent variables and dependent variable is not planned, because of a lack of theoretical rationale and background to indicate or identify mediation and moderation effects about the life satisfaction of older people in mainland China. Regarding the direct effect model, the researcher can use regression analysis to examine it. Thus, SEM is not applied in the present study.

Summary

In this chapter, research design, sampling, data collection, conceptual definitions, measuring instruments, and data coding and analysis are described. The study uses the quantitative research method and is conducted in Putian, Fujian, China. A face-to-face interview approach using a questionnaire composed mainly of close-ended questions is adopted. The data collection is conducted within December 2008 to February 2009. Research results are reported in the next chapter.

Chapter six: Research results

This chapter presents research results. The chapter has three sections. In the first section, the descriptive analyses and the reliability of variables are assessed. The relationships between the testing variables are reported to answer research questions and test the corresponding research hypotheses in the present study by bivariate analyses and multivariate analyses in the second section. A brief summary of research results is made in the third section.

Descriptive and psychometric analyses

In this section, socio-demographic characteristics of the respondents are first presented. The descriptive statistics of the variables including means, standard deviation, and Crobach's alpha reliability of variables are reported.

Sample demographics

A total of five hundred and thirty two older people living in Putian, Fujian, China were successfully interviewed in the present investigation. Table 5-1 (in the next page) provides some socio-demographic characteristics of the older respondents. Of the total 532 respondents, 46.1 percent are male and 53.9 percent are female. 66.2 percent of the respondents are married, 31.8 percent are widowed, and the other 2.1 percent are divorced. Because the present study involves the examination of filial piety, filial discrepancy, and family harmony, the older people who are single are excluded from the present investigation. Given that the divorced participants account only 2.1 percent of total

respondents, the marital status of the respondents is thus recoded to include only two response alternatives, i.e., married and widowed/divorced for further data analyses.

Table 5-1: The socio-demographic characteristics of the respondents ($N = 532$)

Variables	Frequency	Percent
Sex		
Male	245	46.1
Female	287	53.9
Marital status		
Married	352	66.2
Widow	169	31.8
Divorced	11	2.1
Hukou		
Agricultural	263	49.4
Non-agricultural	269	50.6
Annual income		
less than 1,000 Chinese Yuan	90	16.9
1,000 to 1,999 Chinese Yuan	41	7.7
2,000 to 2,999 Chinese Yuan	69	13.0
3,000 to 3,999 Chinese Yuan	53	10.0
4,000 to 4,999 Chinese Yuan	29	5.5
5,000 to 5,999 Chinese Yuan	33	6.2
6,000 to 6,999 Chinese Yuan	34	6.4
7,000 to 7,999 Chinese Yuan	23	4.3
8,000 to 8,999 Chinese Yuan	17	3.2
9,000 to 9,999 Chinese Yuan	19	3.6
more than 10,000 Chinese Yuan	124	23.3
Self-perceived health		
Very poor	44	8.3
Poor	105	19.7
Fair	180	33.8
Good	151	28.4
Very good	52	9.8
Family harmony		
Very disharmonious	29	5.5
Disharmonious	70	13.2
Neutral	179	33.6
Harmonious	185	34.8
Very harmonious	69	13.0

Almost half (49.4 percent) of respondents hold an agricultural *hukou* and half (50.6 percent) of respondents hold a non-agricultural *hukou*. This is purposely chosen, because the researcher plans to investigate the patterns of correlates of life satisfaction for both groups of older people with different *hukous*. Regarding the annual income of the respondents, about 16.7 percent of the respondents have an annual income less than 1,000 Chinese Yuan. About a quarter (23.3 percent) of the respondents has an annual income more than 10,000 Chinese Yuan. With respect to self-perceived health status, 8.3 percent of the respondents regard their health status as very poor, 19.7 percent as poor, 33.8 percent as fair, 28.4 percent as good, and the remaining 9.8 percent as very good. As regards to family harmony, 5.5 percent, 13.2 percent, 33.6 percent, 34.8 percent, and 13.0 percent of the respondents report their family relationship as very disharmonious, disharmonious, neutral, harmonious, and very harmonious respectively.

Descriptive statistics of the variables

Table 5-2 (in the next page) presents mean and standard deviation of the variables measured in the present study. The minimum score and maximum score of each variable are also reported. The variables of age, years of formal education, financial strain, Activities of daily living, leisure activity participation, Lubben Social Network Scale, satisfaction with social support, filial support, filial discrepancy, having *mianzi* in social interaction, Chinese cultural beliefs about adversity, and Satisfaction with Life Scale are continuous variables. The variables of annual income, self-perceived health, and family harmony are ordinal scales.

Table 5-2: Descriptive statistics of the variables ($N = 532$)

Variables	Minimum	Maximum	Mean	Standard deviation
Age	61	94	72.8	7.5
Years of formal education	0	21	4.46	4.32
Annual income	1	11	5.76	3.74
Financial strain	4	12	6.8	1.8
Self-perceived health	1	5	3.12	1.09
Activities of Daily Living	0	13	2.41	2.28
Leisure activity participation	9	38	20.65	4.55
Lubben Social Network Scale	3	30	19.18	4.33
Satisfaction with social support	3	54	13.51	2.88
Family harmony	1	5	3.37	1.04
Filial support	7	20	17.93	4.27
Filial discrepancy	8	30	17.64	3.12
Having <i>mianzi</i> in social interaction	4	15	10.12	2.56
Chinese cultural beliefs about adversity	16	54	34.78	7.81
Satisfaction with Life Scale	6	30	17.16	5.30

Reliability of the instruments

Table 5-3 (in the next page) reports the Cronbach's alpha reliability of each multi-item instrument adopted in the present study. Alpha reliability can be described as the squared multiple correlation of the true score with the observed scores. It is the most popular reliability measure used in social science research (Bollen, 1989). The Cronbach's alpha reliabilities of the instruments used in the present study range from .69 to .93. It was argued that a scale must have an alpha level of .6 before it can be regarded as reliable (Aiken, 1997; as cited in Shek, 2002: 508). Based on this threshold standard, all multi-item scales adopted in the present study can be regarded as reliable.

Table 5-3: The Cronbach's alpha reliability of the instruments

Instruments	Number of items	Alpha
Financial strain	4	0.75
Activities of Daily Living	15	0.79
Leisure activity participation	8	0.69
Lubben Social Network Scale	6	0.84
Satisfaction with social support	4	0.88
Filial support	6	0.87
Filial discrepancy	6	0.86
Having <i>mianzi</i> in social interaction	3	0.93
Chinese cultural beliefs about adversity	9	0.88
Satisfaction with Life Scale	5	0.93

Summary

This section presents the descriptive and psychometric analyses of research results. For the nominal and ordinal variables, the frequencies are reported. For the ordinal and continuous variables, mean and standard deviation are reported. The reliability of the multi-item variables are also reported. It is found that all reliabilities of multi-item variables are acceptable or high.

Analyses of the relationships between independent variables and the dependent variable

In this section, the research results are analyzed to address the research questions and their corresponding hypotheses. The research hypotheses are first examined using the techniques of bivariate analyses. Each of the research questions and hypotheses are re-stated, followed by the results of the data analyses. Control variables are then applied and the hypotheses are reexamined using multivariate analysis.

Bivariate analyses to answer research question one

This first part of the section aims at addressing research question one: “What are relationships between the variables in individual level (sex, age, marital status, *hukou*, education, finance, and health) and life satisfaction of older people?” and its five corresponding research hypotheses in the present study.

In response to the relationship between sex and life satisfaction of older people, an independent-samples *t* test is conducted. The mean score for the male on life satisfaction is significantly greater than that of the female ($M = 18.50$ for the male and 16.01 for the female; $t = 5.57$, $p < .001$), with Cohen’s d equal to 0.48 and effect size r equal to 0.23 . The findings indicate that the male have statistically significant higher life satisfaction than that of the female. With respect to the relationship between age and life satisfaction of older people, an analysis using Pearson’s correlation coefficient indicates that age is negatively correlated with life satisfaction of older people ($r = -0.351$, $p < 0.001$). Based on the above findings, it is evident that the male older people have higher life satisfaction than the female older people and that older people’s age are associated significantly and negatively with their life satisfaction.

To test the association between marital status and life satisfaction of older people, an independent-samples *t* test is conducted. It should be noted that as shown in Table 5-1, of the total 532 older respondents, 66.2 percent are married, 31.8 percent are widowed, and the other 2.1 percent are divorced. Thus, the marital status of the older people is recoded to include only two response alternatives, i.e., married and widowed/divorced. The mean score for the married on life satisfaction is significantly greater than that of the

widowed/divorced ($M = 18.38$ for the married and 14.77 for widowed/divorced; $t = 7.84$ $p < .001$), with Cohen's d equal to 0.72 and effect size r equal to 0.34 . This finding supports the research hypothesis 1-1: "It is likely that married older people have higher life satisfaction than older people who are widowed, single, separated, or divorced."

An independent-samples t test is also conducted to analyze the association between *hukou* and life satisfaction of older people. The results show that the mean score for the older people with an agricultural *hukou* on life satisfaction is significantly lower than that of the older people with a non-agricultural *hukou* ($M = 16.30$ and 18.00 respectively; $t = -3.75$ $p < .001$), with Cohen's d equal to -0.32 and effect size r equal to -0.16 . This finding supports the research hypothesis 1-2: "It is likely older people with a non-agricultural *hukou* have higher life satisfaction than older people with an agricultural *hukou*."

Regarding the relationship between years of formal education and life satisfaction of older people, an analysis using Pearson's correlation coefficient is conducted. The results show that years of formal education are positively and significantly correlated with life satisfaction of older people ($r = 0.463$, $p < 0.001$). The findings support the research hypothesis 1-3: "Older people' education would be positively associated with their life satisfaction."

With respect to the relationship between finance and life satisfaction of older people, an analysis using Pearson's correlation coefficient is conducted to test the relationship between annual income and life satisfaction of older people as well as the relationship between financial strain and life satisfaction of older people. The results show that annual income is positively correlated with life satisfaction of older people ($r = 0.485$, $p < 0.001$) and the financial strain is negatively correlated with life satisfaction of older people ($r = -0.504$, p

< 0.001). One-way analysis of variance is also conducted to reveal the relationship between annual income of the older people and their life satisfaction. The result of the analysis of variance produces an F ratio of 18.15, between group degrees of freedom of 10 and within group degrees of freedom of 521 with $p < .001$ and $\text{Eta}^2 (\eta^2)$ as the measure of effect size equal to 0.35. Inspection of means plot also reveals that older people with more annual income tends to be more satisfied with their life. The research hypothesis 1-4: "Older people' finance would be positively associated with their life satisfaction." is thus supported.

For the relationship between health and life satisfaction of older people, one-way analysis of variance is conducted to reveal the relationship between self-perceived health status and life satisfaction of older people as well as the relationship between functional health and life satisfaction of older people. With respect to self-perceived health status, analysis of variance produces an F ratio of 46.35, between group degrees of freedom of 4 and within group degrees of freedom of 527 with $p < .001$ and $\text{Eta}^2 (\eta^2)$ as the measure of effect size equal to 0.260. The results also indicate that the mean scores of life satisfaction are 12.50 for older people reporting very poor health status, 14.06 for older people reporting poor health status, 16.74 for older people reporting fair health status, 19.79 for older people reporting good health status, and 21.17 for older people reporting very good health status. Regarding the functional health, an analysis using Pearson's correlation coefficient is conducted. The result indicates that functional health is positively correlated with life satisfaction of older people ($r = -0.465, p < 0.01$). The findings of the above two analyses provide support to the research hypothesis 1-5: "Older people' health would be positively associated with their life satisfaction."

In summary, the bivariate analyses indicate that male respondents have significantly higher life satisfaction than the female respondents. The age of older respondent is negatively correlated with their life satisfaction. The married older respondents have significantly higher life satisfaction than the widowed or divorced respondents. Furthermore, it is found that older respondents with a non-agricultural *hukou* have significantly higher life satisfaction than their counterparts with an agricultural *hukou*. In addition, older people's education, finance, and health are positively correlated with their life satisfaction. Based on the results of bivariate analyses, all five hypotheses related to the research question one are supported. A brief summary of bivariate analysis results for research question one is presented in Table 5-4.

Table 5-4: A brief summary of bivariate analysis results for research question one

Variables	t, F, or <i>r</i>	<i>p</i>	Effect size <i>r</i> or η^2
Sex	5.57 (t)	< .001	0.23 (<i>r</i>)
Age	-0.351(<i>r</i>)	< .001	-
Marital status	7.84(t)	< .001	0.34(<i>r</i>)
<i>Hukou</i>	-3.75(t)	< .001	-0.16(<i>r</i>)
Years of formal education	0.463(<i>r</i>)	< .001	-
Finance			
Financial strain	-0.504(<i>r</i>)	< .001	-
Annual income	0.485(<i>r</i>)	< .001	-
Health			
Self-perceived health	46.35(F)	< .001	0.260(η^2)
Activities of Daily Living	-0.465(<i>r</i>)	< .001	-

Bivariate analyses to answer research question two

This second part of section aims at addressing research question two: “What are relationships between the variables in interpersonal level (leisure activity participation,

intergenerational relations, and informal social support) and life satisfaction of older people?” and its three corresponding hypotheses in the present study.

To examine the relationship between leisure activity participation and life satisfaction of older people, an analysis using Pearson's correlation coefficient is conducted. The results show that leisure activity participation is positively correlated with life satisfaction of older people ($r = 0.48, p < 0.001$). The finding provides support to the research hypothesis 2-1: “Older people’ leisure activity participation would be positively associated with their life satisfaction.”

In response to the relationship between intergenerational relations and life satisfaction, one way analysis of variance is conducted to explore the relationship between family harmony and life satisfaction of older people. The analysis using Pearson's correlation coefficient is performed to examine the relationships between the variables of family harmony, filial support, and filial discrepancy and the variable of life satisfaction. For the relationship between family harmony and life satisfaction, analysis of variance produces an F ratio of 90.16, between group degrees of freedom of 4 and within group degrees of freedom of 527 with $p < .001$ and $\text{Eta}^2 (\eta^2)$ as the measure of effect size equal to 0.409. The results also indicate that the mean scores of life satisfaction are 10.34 for older people whose families are very disharmony, 13.27 for older people whose families are disharmony, 15.26 for older people reporting a neutral family relation, 19.52 for older people whose families are harmony, and 22.57 for older people whose families are very harmony. Furthermore, the correlation analysis also indicates that family harmony is correlated positively and significantly with life satisfaction of older people ($r = 0.64, p < 0.001$).

For the relationships between the variables of filial support and filial discrepancy and the variable of life satisfaction, the results of correlation analyses show that filial support is correlated positively with life satisfaction of older people ($r = 0.63, p < 0.001$). Filial discrepancy is also correlated positively and significantly with life satisfaction of older people ($r = 0.55, p < 0.001$). These findings indicate that three measures of intergenerational relations are all correlated positively and significantly with life satisfaction of older people. The findings also provide support to the research hypothesis 2-2: "Older people' intergenerational relations would be positively associated with their life satisfaction."

With regards to the relationship between social support and life satisfaction of older people, an analysis using Pearson's correlation coefficient is conducted. The results indicate that older people's perceived social support network measured by LSNS-6 is correlated positively and significantly with life satisfaction of older people ($r = 0.38, p < 0.001$). It is also found that the degree of older people's satisfaction with social support is positively and significantly associated with life satisfaction of older people ($r = 0.66, p < 0.001$). The results of correlation analyses demonstrate that both measures of social support are correlated positively and significantly with life satisfaction of older people. Therefore, the research hypothesis 2-3: "Older people' informal social support would be positively associated with their life satisfaction." is supported.

In summary, based on the outcomes of bivariate analyses, it is found that all variables in interpersonal level, i.e., activity participation, intergenerational relations, and informal social support are correlated positively and significantly with life satisfaction of older people. The results of bivariate analyses provide support to all three corresponding

hypotheses. A brief summary of bivariate analysis results for research question two is presented in Table 5-5.

Table 5-5: A brief summary of bivariate analysis results for research question two

Variables	F or <i>r</i>	<i>p</i>	Effect size η^2
Leisure activity participation	0.48(<i>r</i>)	<.001	-
Intergenerational relations			
Family harmony	90.16(F)	<.001	0.409
Filial support	0.63(<i>r</i>)	<.001	-
Filial discrepancy	0.55(<i>r</i>)	<.001	-
Social support			
Lubben Social Network Scale	0.38(<i>r</i>)	<.001	-
Satisfaction with social support	0.66(<i>r</i>)	<.001	-

Bivariate analyses to answer research question three

This third part of section is intended to address research question two: “What are relationships between the variables in cultural level (Chinese cultural beliefs of adversity and having *mianzi* in social interactions) and life satisfaction of older people?” and its corresponding hypotheses in the present study.

In response to the relationship between Chinese cultural beliefs of adversity and life satisfaction of older people, an analysis using Pearson's correlation coefficient is conducted. The results show that older people’s endorsement of positive Chinese cultural beliefs of adversity is positively and highly correlated with life satisfaction of older people ($r = 0.69$, $p < 0.001$). The finding provides support to the research hypothesis 3-1: “Older people with stronger endorsement of positive Chinese beliefs about adversity would have higher life satisfaction.”

An analysis using Pearson's correlation coefficient is also conducted to explore the relationship between the degree of having *mianzi* in social interactions and life satisfaction of older people. According to the results of analysis, the degree of having face in social interactions is positively and significantly correlated with life satisfaction of older people ($r = 0.63, p < 0.001$). Therefore, the research hypothesis 3-1: "Older people who report higher levels of having *mianzi* in social interactions would have higher life satisfaction." is also supported.

In summary, this section answers the research question three. Two analyses using Pearson's correlation coefficient are conducted to explore the relationship between the variables of the endorsement of positive Chinese cultural beliefs of adversity and the degree of having *mianzi* in social interactions and the variables of life satisfaction among older people. The findings show that both variables are correlated positively and significantly with life satisfaction of older people. Therefore, the two hypotheses related to the research question three in the present study are supported.

Multivariate analysis to examine hypotheses related to research questions one to three

In order to examine the effects of the variables in three different levels on the dependent variable of life satisfaction of older people, the variables which are significantly related to the dependent variable are placed in a regression equation to determine whether the variables are indeed significantly related to the dependent variable when other variables are controlled. The results of the regression procedure can be expressed in several ways, such as the unstandardized regression coefficients (B) which is also referred to as the slope of the regression line, the standard errors (SE) of B, the standardized regression coefficients

(β), the regression coefficient (R), R^2 , F , and degree of freedom of F . Some scholars such as Lewis-Beck (1980) argued that the slope of the regression line can be tested for statistical significance using the sampling distribution for student's t . Lewis-Beck (1980) pointed out that this estimate of statistical significance is more accurate than using the slope estimate, because social science researchers seldom know the actual parameters of the population from which the sample is drawn. This situation is certainly true for the present study, since the sample of the present study is not randomly selected. Thus, t values of regression coefficients are also reported in the regression analyses in the present study.

As discussed in the Chapter four, the researcher follows the ecological principles and assertions to guide his discussion and make connections between older people's life satisfaction and various correlates in the present study. Based on Bronfenbrenner's (1979, 2000) ecological model, this research is intended to examine the contribution of correlates from three ecological systems or levels to explain older people's life satisfaction. The three levels are individual level, interpersonal level, and cultural level. Therefore, the present investigation examines the combined contribution of the independent research variables to explain older people's life satisfaction by conducting hierarchical regression analysis for each level.

Before regression analysis, a correlation analysis is performed to examine the relationships among all variables that the researcher intends to examine in the present study. Table 5-6 (in page 150) presents the matrix of Pearson's correlation coefficients for the variables that the researcher intends to examine in the present study. There is a total of 17 independent variables and one dependent variable of life satisfaction. The 17 independent variables include sex, age, marital status, *hukou*, education, financial strain, annual income,

self-perceived health status, Activities of Daily Living, leisure activity participation, Lubben Social Network Scale, satisfaction with social support, family harmony, filial support, filial discrepancy, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity. Based on the Pearson's correlation coefficients of the analysis shown in Table 5-6, all independent variables are correlated significantly with dependent variable.

The results in Table 5-6 also indicate that the correlation between age and Activities of Daily Living is significant and high ($r = .700, p < .001$). The correlation between self-perceived health status and Activities of Daily Living is also significant and high ($r = -.705, p < .001$). Furthermore, the variables of annual income is also correlated significant and high with the variable of education ($r = .708, p < .001$) and the variable of financial strain ($r = -.647, p < .01$). There tends to be multicollinearity problem if the variables of ADL and annual income and the variable of age, self-perceived health status, financial strain, and education are all used as independent variables in the regression analysis (Miles, 2005; Tabachnick and Fidell, 2007). Actually, when all variables are entered into regression equation, the two variables of Activities of Daily Living and annual income have the values of variance of inflation factor (VIF) greater 3.0. However, Allison (2001) pointed out that a VIF greater than 2.5 may indicate the presence of multicollinearity.

Table 5-6: The matrix of correlation coefficients for the variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Sex	-																	
2. Age	.084	-																
3. MS	.151**	.469***	-															
4. HK	-.031	.028	-.072	-														
5. EDU	-.280***	-.318***	-.256***	.466**	-													
6. FS	.193***	.231***	.245***	-.400**	-.553***	-												
7. AI	-.275***	-.330***	-.240***	.518***	.708***	-.647***	-											
8. SPH	-.226***	-.520***	-.419***	.013	.315***	-.397***	.362***	-										
9. ADL	.265***	.700**	.463***	.010	-.350***	.388***	-.336**	-.705***	-									
10. AP	-.244***	-.400***	-.294***	.322***	.638***	-.556***	.578***	.445***	-.523***	-								
11. SN	-.048	-.267***	-.326***	-.034	.255***	-.210***	.251***	.393***	-.347***	.387***	-							
12. SWS	-.159***	-.314**	-.271***	.097*	.345**	-.368***	.376***	.485***	-.381***	.379***	.426***	-						
13. FH	-.149**	-.323***	-.313***	.103*	.296**	-.399***	.353***	.497***	-.348***	.325***	.351***	.593***	-					
14. FiS	-.132**	-.188***	-.172***	.097*	.259***	-.269***	.254***	.271***	-.220***	.179***	.194***	.572***	.584***	-				
15. FD	-.179***	-.285***	-.287***	-.049	.217***	-.267***	.178***	.446***	-.369***	.289***	.387***	.533***	.568***	.546***	-			
16. HM	-.191***	-.265***	-.312***	.128**	.383***	-.425***	.426***	.483***	-.365***	.412***	.413***	.585***	.527***	.464***	.524***	-		
17. CCA	-.264***	-.319***	-.325***	.106*	.421***	-.422***	.390***	.411***	-.366***	.356***	.307***	.593***	.620***	.604***	.524***	.567***	-	
18. SWL	-.234***	-.351***	-.322***	.160***	.463***	-.504***	.485***	.505***	-.465***	.464***	.348***	.650***	.632***	.624***	.551***	.634***	.689***	-

Note N = 532. MS = Marital status; HK = *Hukou*; EDU = Education; FS = Financial strain; AI = Annual income; SPH = Self-perceived health status; ADL = Activities of Daily Living; AP = Leisure activity participation; SN = Lubben Social Network Scale; SWS = Satisfaction with social support; FH = Family harmony; FiS = Filial support; FD = Filial discrepancy; HM = The degree of having *mianzi* in social interactions; CCA = The endorsement of positive Chinese cultural beliefs about adversity; SWL = Satisfaction with Life Scale

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

*** Correlation is significant at the 0.001 level (2-tailed).

To avoid multicollinearity problem in regression analysis, we may find a way to add the raw scores of variables which are highly correlated to arrive at a single composite raw score or we may exclude some independent variables from the regression. It was suggested that the decision in the construction of a composite measurement should be guided by theoretical rationale and also be informed by additional empirical analyses (Marcus, 2006). Given that there is a lack of theoretical foundation to combine the variables of age, self-perceived health, and Activities of Daily living into a composite scale and the variables of annual income, financial strain, and education into a composite scale, the variables of Activities of Daily Living and annual income of the respondents are therefore not entered into the following regression analysis.

A hierarchical regression analysis is performed to examine the contribution of variables from three ecological systems to explain older people's life satisfaction. Cohen, Cohen, West, and Aiken (2003) and Petrocelli (2003) pointed out that in a hierarchical regression, the statistical results associated with later steps depend largely on what is entered into the analysis during earlier steps. They pointed out that when applying hierarchical regression analysis, one must produce a clear and logical rationale for its use, the selection of predictor variables, and the specific order of entry. In the present study, the researcher conducts a literature review on correlates of life satisfaction among older people in chapter three and identifies some new factors to be empirically tested in the present research. All correlates to be examined in the present study are organized within three levels in an ecological model of correlates of life satisfaction among older people. Hierarchical regression analysis is conducted because the researcher intends to assess the extent, to

which the three levels of ecological model proposed in the present study contribute to explaining life satisfaction of older people.

For the entry of independent variable, Cohen et al. (2003) emphasized the presumed causal priority, i.e., the direction of causal flow. In the present study, the variables in individual level (sex, age, marital status, *hukou*, education, financial strain, annual income, and self-perceived health status) are demographic or personal variables. The variables in this level are possible to be causes rather than to be effects of the variables in other system. Therefore, in the first step of hierarchical regression analysis, the variables in individual system (sex, age, marital status, *hukou*, education, financial strain, and self-perceived health status) are entered in regression equation to test if they contribute significant variance to life satisfaction of older people. Cohen et al. (2003) and Petrocelli (2003) also suggested that demographic variables are generally good candidates for initial step entry in hierarchical regression analysis. In the second step, the variables in interpersonal level (leisure activity participation, social network, satisfaction with social support, family harmony, filial support, and filial discrepancy) are entered and tested for the contribution in explaining variances in older people's life satisfaction. These variables reflect the relationships between individuals and their immediate environments. They tend to be more closely related to individual level variables than the variable in cultural level and are thus tested in the second step in hierarchical regression analysis. In the third step of hierarchical regression analysis, two variables in cultural level (the degree of having *mianzi* in social interaction and the endorsement of positive Chinese cultural beliefs about adversity) are entered to test their effects on life satisfaction.

Table 5-7 (in the next page) summarizes the results of the hierarchical regression model of variables in individual level, interpersonal level, and cultural level on life satisfaction. The unstandardized regression coefficients (B), the standard errors (SE) of B, the standardized regression coefficients (β), t value, significance of t value, regression coefficient (R), R^2 , R^2 change, adjusted R^2 , F, significance of F, degree of freedom of F, F change, significance of F change, and Cohen's f^2 (as the measure of effect size) attributable to the addition of combined variance accounted for by the variables in different steps are presented.

In step one of hierarchical regression analysis, the seven variables (sex, age, marital status, *hukou*, education, financial strain, and self-perceived health) in individual level are entered into the equation for analysis. Shown in Table 5-7, the seven variables taken as a group produces a regression coefficient of $R = 0.639$, or variance explained, of 0.408 (adjusted $R^2 = 0.400$) with large effect size ($f^2 = 0.66$). The analysis of variance produces an F ratio of 51.58 with the corresponding p-value of 0, which provides very strong evidence of the utility of the model. According to the part of output referring to t-test, of the seven variables entered into the regression equation, the associations between the dependent variable of life satisfaction and the variables of years of formal education and self-perceived health status are positive and significant. On the other hand, the association between the dependent variable of life satisfaction and the variable of financial strain is negative and significant. However, the variables of sex, age, marital status, and *hukou* do not reach significance to explaining life satisfaction of older people.

Table 5-7: Hierarchical regression model of the variables in individual level, interpersonal level, and cultural level on life satisfaction

Independent variables	Step 1			Step 2			Step 3								
	B	SE	β	T	Sig. T	B	SE	β	T	Sig. T	B	SE	β	T	Sig. T
Sex	-.542	.381	-.051	-1.421	.156	-.343	.300	-.032	-1.14	.255	-.127	.290	-.012	-.439	.661
Age	-.033	.030	-.047	-1.087	.277	-.009	.024	-.012	-.356	.722	-.013	.023	-.018	-.564	.573
MS	-.690	.442	-.062	-1.561	.119	-.298	.351	-.027	-.848	.397	-.052	.338	-.005	-.155	.877
HK	-.541	.429	-.051	-1.261	.208	-.355	.343	-.034	-1.036	.301	-.207	.329	-.020	-.629	.530
EDU	.257	.056	.209	4.553	.000	.128	.048	.105	2.686	.007	.076	.046	.062	1.643	.101
FS	-.764	.126	-.265	-6.081	.000	-.410	.103	-.142	-3.987	.000	-.306	.099	-.106	-3.079	.002
SPH	1.325	.211	.273	6.289	.000	.410	.179	.085	2.293	.022	.336	.173	.069	1.942	.053
AP						.095	.046	.082	2.073	.039	.093	.044	.080	2.114	.035
SN						-.005	.039	-.004	-.138	.890	-.025	.038	-.020	-.652	.515
SWS						.359	.070	.195	5.117	.000	.241	.069	.131	3.477	.001
FH						.740	.195	.145	3.797	.000	.458	.192	.090	2.391	.017
FiS						.346	.046	.279	7.591	.000	.264	.045	.213	5.827	.000
FD						.122	.062	.072	1.983	.048	.064	.060	.038	1.075	.283
HM						.307	.074	.149	4.182	.000	.131	.026	.193	4.999	.000
CCB															
R															.823
R ²															.678
R ² change															.032
Adjusted R ²															.668
F (Sig.)															72.39(.000)
d.f.															15/516
F change (Sig.)															25.23(.000)
Cohen's f															0.10

Note N = 532. MS = Marital status; HK = *Hukou*; EDU = Education; FS = Financial strain; SPH = Self-perceived health status;

AP = Leisure activity participation; SN = Lubben Social Network Scale; SWS = Satisfaction with social support; FH = Family harmony; FiS = Filial support; FD = Filial discrepancy; HM = The degree of having *mianzi* in social interactions; CCA = The endorsement of positive Chinese cultural beliefs about adversity

In step two of hierarchical regression analysis, after controlling for the variables in individual level, the variables (leisure activity participation, LSNS-6, satisfaction with social support, family harmony, filial support, and filial discrepancy) in interpersonal level are found to exert significant impacts on life satisfaction, $R^2 = 0.646$, R^2 change = 0.238, adjusted $R^2 = 0.637$, F change = 58.19, $p < 0.001$. The effect size attributable to the addition of combined variance accounted for by the variables in interpersonal level to the model is large ($f^2 = 0.70$). Based on the results of regression analysis shown in Table 5-7, of the six variables entered into the regression equation, the five variables of activity participation, satisfaction with social support, family harmony, filial support, and filial discrepancy are associated significantly and positively with life satisfaction of older people. Only the variable of social network does not reach significance to explaining older people's life satisfaction.

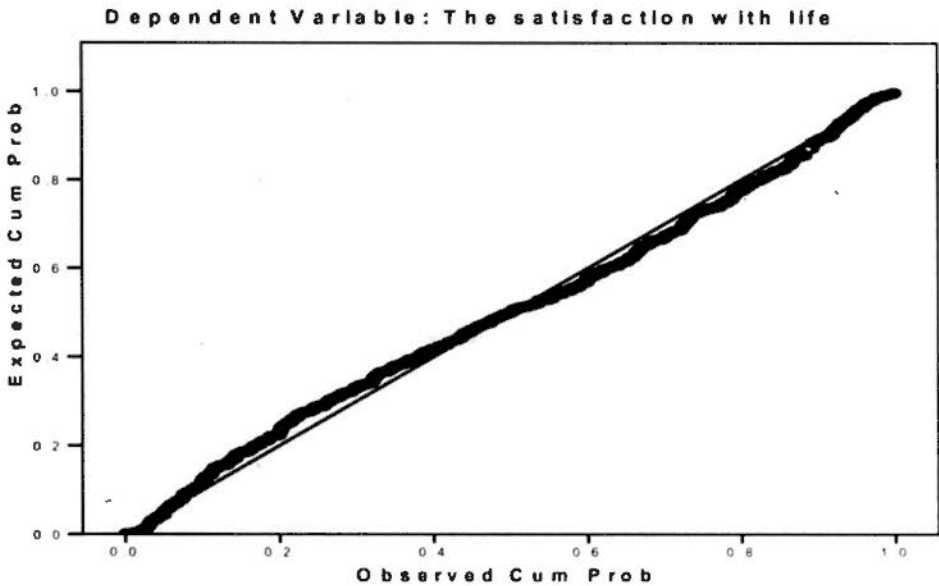
In step three of hierarchical regression analysis, after controlling for the variables in individual level and interpersonal level, the two variables (the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity) in cultural level are also shown to exert impacts on life satisfaction of older people, R^2 change = 0.032, F change = 25.23, $p < 0.001$. However, the effect size attributable to the addition of combined variance accounted for by the variables in cultural level to the model is small ($f^2 = 0.10$). According to the regression results shown in Table 5-7, both variables of having *mianzi* in social interactions ($T = 4.18$, $p < .001$) and Chinese cultural beliefs about adversity ($T = 4.99$, $p < .001$) in cultural level are associated significantly and positively with life satisfaction of older people.

The results in the step three of the hierarchical regression analysis also demonstrate that besides the variables of the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity, the variables of leisure activity participation, satisfaction with social support, family harmony, and filial support are also associated significantly and positively with life satisfaction of older people. The variable of financial strain is associated significantly and negatively with life satisfaction of older people. The association between the variable of self-perceived health status and the dependent variable of life satisfaction of older people is marginally significant, with a *t*-value equal to 1.942 and corresponding *p*-value of 0.053. Regression findings show that overall model comprising individual, interpersonal, and cultural levels explain 67.8 percent (66.8 percent adjusted) of total variance in life satisfaction of older people. The value of the *F* statistic is equal to 72.258 with a probability level of .000, which indicates the evidence of the utility of the model. In addition, the results indicate that there is not the problem of multicollineality, the values of variance inflation factor for all the independent variables examined in this regression analysis are below 2.5.

It should be noted that the above results based on the ordinary linear regression model are valid only the underlying assumptions of linear regression are satisfied. The assumptions are normality and constant variance for residuals (Foster, Barkus, and Yavorsky, 2006; Tabachnick and Fidell, 2007). To assess the normality assumption, the normal P-P plot of regression standardized residuals is obtained. The plot plots the cumulative proportions of standardized residuals against the cumulative proportions of the normal distribution. Points will cluster around a straight line if the normality assumption is not violated. As demonstrated in Figure 5-1, the patten in the plot is very close to a straight

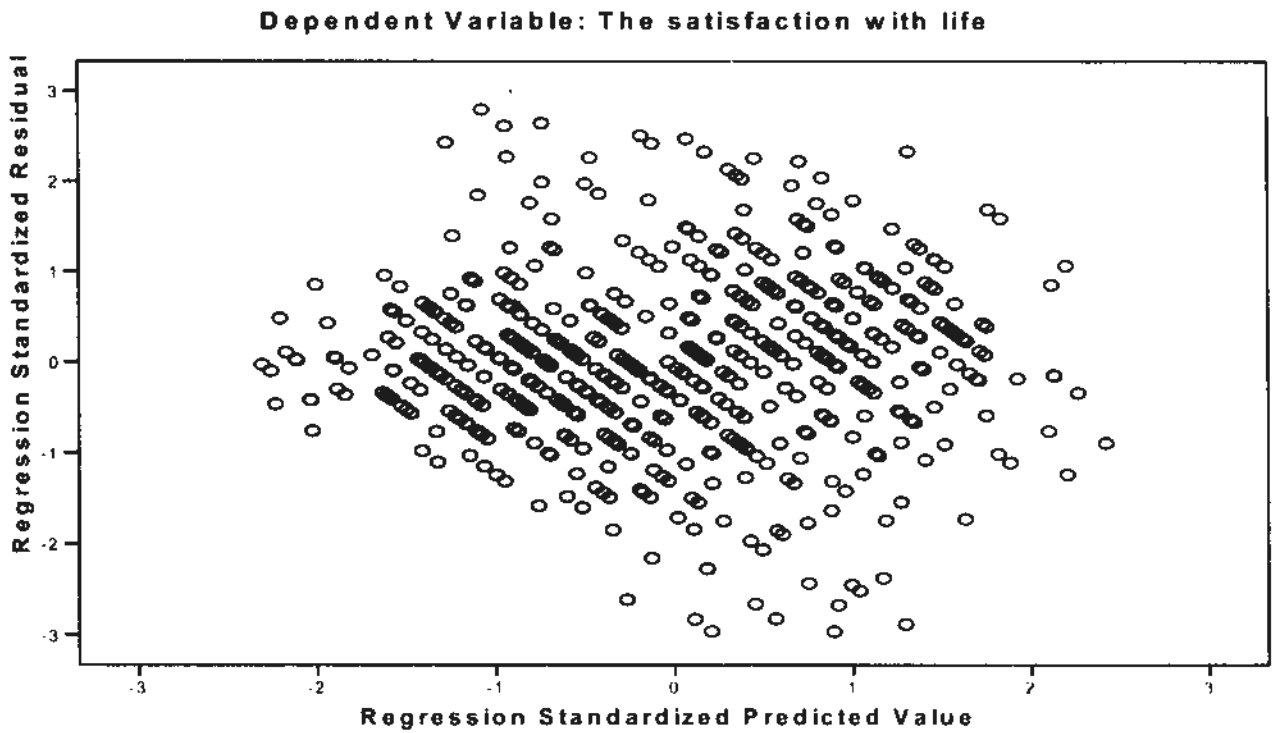
line. Thus, we can conclude that the residuals are pretty much normally distributed and the normality assumption is thus supported.

Figure 5-1: The normal P-P plot of regression standardized residuals



Linear regression analysis also assumes that the error terms or residuals have a constant variance, or in other words, that the residuals are approximately equal for all predicted dependent variable scores. Heteroskadasticity is a violation of this assumption and can bias ordinary least squares estimated standard errors of those slope estimates and thus results in the t tests not be reliable since $t = B / SE$ (Foster, Barkus, and Yavorsky, 2006). One method of checking the problem of heteroskadasticity is to plot the residuals against the predicted values (Pryce, 2002), so that we can look for a change in the spread or dispersion of the plotted points. The scatter plot of the standardized residuals on the standardized predicted values is thus displayed to provide a visual way of assessing the problem of heteroskadasticity.

Figure 5-2: The scatter plot of the regression standardized residuals on the standardized predicted value



As shown in Figure 5-2, all residuals fall between -3 to 3 and the predominance of the residuals fall between -2 to 2. The residuals plot is approximately the same width for all values of the predicted dependent variable. There is no apparent change in the variability of the residuals in the plot. Therefore, it seems evident that the residuals are homoskedastic and there is not the problem of heteroskedasticity in this regression analysis. The assumption of constant variance is also supported.

In summary, consistent with the ecological model proposed in the present study, the findings of hierarchical regression analysis suggest that the variables in individual level, interpersonal level, and cultural level all have impacts on life satisfaction of older people. The findings also indicate that the influence of the variables in individual level, which is

closest to the individual, is the most salient. The influence of the variables in interpersonal and cultural level on life satisfaction of older people is also substantial.

Based on the results of the above regression analysis, when other independent variables (except the variables of Activities of Daily Living and annual income due to their high correlation with other variables) are controlled, research hypothesis 1-4: "Older people' finance would be positively associated with their life satisfaction is supported." is supported. The results in Table 5-7 demonstrate that financial strain is associated significantly and negatively with life satisfaction of older people ($T = -3.079, p = 0.002$). The research hypothesis 1-5: "Older people' health would be positively associated with their life satisfaction." is also marginally supported. The finding indicate that self-perceived health status is associated marginally and positively with life satisfaction of older people ($T = 1.942, p = 0.053$). Regarding the three hypotheses corresponding to research question two, the research hypothesis 2-1: "Older people' activity participation would be positively associated with their life satisfaction." is confirmed. The variable of leisure activity participation is found to be associated with life satisfaction of older people positively and significantly ($T = 2.114, p = 0.035$). Research hypothesis 2-2: "Older people' intergenerational relations would be positively associated with their life satisfaction." is also supported. The results in Table 5-7 show that both family harmony ($T = 2.391, p = 0.017$) and filial support ($T = 5.827, p = .000$) are associated with life satisfaction of older people significantly and positively. Furthermore, the research hypothesis 2-3: "Older people' informal social support would be positively associated with their life satisfaction." is supported. The findings indicate that older people's satisfaction with their informal social support is associated significantly and positively with their life satisfaction ($T = 3.477, p$

= .001). With respect to the two hypotheses corresponding to research question three, the findings demonstrate that research hypothesis 3-1: "Older people with stronger endorsement of positive Chinese beliefs about adversity would have higher life satisfaction." is supported. The results shown in Table 5-7 suggest that the association between the endorsement of positive Chinese cultural beliefs about adversity and life satisfaction is positively and significantly ($T = 4.999, p = .000$). The research hypothesis 3-2: "Older people who report higher levels of having *mianzi* in social interactions would have higher life satisfaction." is also supported. According to the results of regression analysis, the association between having *mianzi* in social interactions and life satisfaction is positive and significant ($T = 4.182, p = .000$).

Analyses to answer research question four

In the previous parts of section, bivariate analyses and multivariate analysis are conducted to answer research questions one to three and test their corresponding hypotheses. This part the section addresses research question four: "What are patterns of correlates of life satisfaction for the two groups of older people with different *hukous*?" and its corresponding hypothesis: "It is likely that pattern of correlates of life satisfaction will be different between the two groups of older people with different *hukous*."

This part is divided into three sub-parts. First, the descriptive and psychometric analyses are conducted to explore the descriptive information about two groups of older respondents with different *hukous*. Second, correlation analyses are conducted to look at the correlations among all variables examined in the present study for the two groups of older people. Third, hierarchical regression analyses are performed to examine the relationships

between dependent variable of life satisfaction and the independent variables for two groups of older people with different *hukous* respectively.

Descriptive and psychometric analyses

In the present investigation, the sample constitutes a total of 263 respondents with an agricultural *hukou* and a total of 269 respondents with a non-agricultural *hukou*. Shown in Table 5-8, among the respondents with an agricultural *hukou*, 44.5 percent are male and 55.5 percent are female. For the respondents with a non-agricultural *hukou*, 47.6 percent are male and 52.4 percent are female. Chi-squared test indicates no significant difference in the frequency distribution of sex between the respondents with a non-agricultural *hukou* and the respondents with an agricultural *hukou*.

Table 5-8: The frequency distribution of sex and marital status between two groups of respondents with different *hukous*

Variables	All (n = 263) No. of cases (%)	NH (n = 269) No. of cases (%)	chi-squared test value
Sex			.513
Male	117(44.5)	128(47.6)	
Female	146(55.5)	141(52.4)	
Marital status			2.73
Married	165(62.7)	187(69.5)	
Others	98(37.3)	82(30.5)	

Notes: AH = agricultural *hukou*; NH = non-agricultural *hukou*

With respect to the marital status of older people with different *hukous*, the results indicated that among those with an agricultural *hukou*, 63.7 percent are married, 36.5 are widowed, and only 0.8 are divorced. Thus, the widowed and the divorced are combined into one response alternative. Furthermore, among those with a non-agricultural *hukou*, 69.5

percent are married, 27.1 are widowed, and only 3.3 are divorced. Therefore, the widowed and the divorced are also combined into one response alternative. The results are shown in Table 5-8. Chi-squared test also indicates no significant difference in the frequency distribution of marital status between two groups of respondents with different *hukous*.

Table 5-9 displays a summary of the means, standard deviations, and Cronbach's alpha reliability of the variables regarding the two groups of older people with different *hukous*. At the same time, independent-samples T-test is also conducted to compare the mean differences between two groups of older people with different *hukous*. The *t* values and the values of Cohen's *d* are also shown in the Table 5-9.

Table 5-9: A brief summary of descriptive statistics of the variables of the two groups of respondents with different *hukous*

Variables	M(SD)		α		<i>t</i> -value	Cohen's <i>d</i>
	AH	NH	AH	NH		
Age	72.63(7.2)	73.05(7.78)	-	-	-.64	-
Years of formal education	2.43(2.58)	6.45(4.71)	-	-	-12.11***	1.10
Financial strain	7.50(1.74)	6.03(1.63)	0.71	0.70	10.06***	0.87
Annual income	3.80(2.89)	7.67(3.48)	-	-	13.93***	1.20
Self-perceived health	3.10(1.11)	3.13(1.07)	-	-	-.29	-
Activities of Daily Living	2.39(2.30)	2.42(2.26)	0.79	0.80	-.24	-
Activity participation	19.12(3.31)	22.14(5.07)	0.48	0.75	8.11***	0.71
Lubben Social Network Scale	19.32(4.44)	19.03(4.22)	0.85	0.83	.79	-
Satisfaction with social support	13.22(2.87)	13.78(2.87)	0.90	0.88	-2.24*	0.20
Family harmony	3.26(1.06)	3.47(1.01)	-	-	-2.38*	0.20
Filial support	17.51(4.30)	18.35(4.22)	0.89	0.85	-2.25*	0.20
Filial discrepancy	17.80(3.28)	17.49(2.93)	0.88	0.83	1.12	-
Having <i>mianzi</i> in social interactions	9.79(2.43)	10.45(2.66)	0.93	0.93	-3.00**	0.26
Chinese cultural belief of adversity	33.94(7.45)	35.60(8.08)	0.87	0.89	-2.46*	0.21
Satisfaction with Life Scale	16.30(4.91)	18.00(5.54)	0.92	0.93	3.74***	0.32

Notes: AH = agricultural *hukou*; NH = non-agricultural *hukou*; M = mean; SD = Standard deviation; α = Cronbach's alpha.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The results of T-test and the values of Cohen's *d* shown in Table 5-9 demonstrate that the mean scores for two groups of older people with different *hukous* are different significantly with large effect size regarding the variables of years of formal education, financial strain, and annual income. The mean scores for two groups of older people with different *hukous* are different significantly with medium effect size regarding the variable of leisure activity participation. The mean scores for two groups of older people with different *hukous* are different significantly with small effect size regarding the variables of satisfaction with social support, family harmony, filial support, the degree of having *mianzi* in social interactions, the endorsement of positive Chinese cultural beliefs about adversity, and life satisfaction.

With respect to multi-item scales, the Cronbach's alphas of the variables for two groups of older people with different *hukous* are equal to 0.70 and above, except the variable of leisure activity participation which has a Cronbach's alpha of 0.48 for the older respondents with an agricultural *hukou*. Although with a low reliability, the variables of leisure activity participation is not excluded in further bivariate and multivariate analyses for the respondents with an agricultural *hukou*, because the present study intends to make a comparison of correlates of life satisfaction between the two groups of respondents with different *hukous*.

Correlation analyses

An analysis using Pearson's correlation coefficient is conducted to test the relationships between all independent variables and the dependent variables as well as the relationships among independent variables for both groups of older people with different *hukous*

respectively. For the group of older respondents with an agricultural *hukou*, the matrix of correlation coefficients for the variables is presented in Table 5-10 (in the next page). The results demonstrate that all the independent variables are correlated significantly with the dependent variable of life satisfaction. The findings suggest that when other variables are not controlled, all independent variables examined in the present study are associated significantly with life satisfaction of older people with an agricultural *hukou*.

Regarding the group of older respondents with a non-agricultural *hukou*, the matrix of correlation coefficients for the variables is shown in Table 5-11 (in the page 166). The results also demonstrate that all the independent variables are correlated significantly with the dependent variable of life satisfaction. The findings indicate that when other variables are not controlled, all independent variables examined in the present study are associated significantly with the dependent variable of life satisfaction of older people with a non-agricultural *hukou*.

It is noted that to examine the patterns of correlates of life satisfaction between two groups of older people with different *hukous* based on two families of simultaneous bivariate analyses, the probability of making Type I error, i.e., the overall significance level of the family of tests, is inflated. In the present study, 16 independent statistical tests are performed simultaneously for two families of tests. Thus, it is desirable to make a Bonferroni correction on alpha, such as p -values need to be $0.05/16$ (equal to 0.003), so that we may be able to obtain a significant difference between two patterns of correlates at the 0.05 level (Abdi, 2007; Gordi and Khamis, 2004).

Table 5-10: The matrix of correlation coefficients for the variables for the respondents with an agricultural hukou

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Sex																	
2. Age	.022																
3. MS	.120	.475***															
4. EDU	-.323*	-.453***	-.373***														
5. FS	.144*	.321***	.253***	-.329***													
6. AI	-.276***	-.474***	-.326***	.524***	-.527***												
7. SPH	-.207**	-.561***	-.517***	.369***	-.478***	.494***											
8. ADL	.250***	.679***	.520***	-.415***	.495***	-.470***	-.703***										
9. AP	-.169**	-.420***	-.320***	.512***	-.491***	.454***	.480***	-.557***									
10. SN	-.054	-.364***	-.443***	.350***	-.293***	.339***	.473***	-.413***	.400***								
11. SWS	-.149*	-.259***	-.239***	.245***	-.314***	.335***	.385***	-.309***	.304***	.481***							
12. FH	-.157*	-.331***	-.292***	.240***	-.414***	.331***	.424***	-.333***	.286***	.453***	.533***						
13. FiS	-.121*	-.103	-.140*	.202*	-.235***	.232***	.141*	-.090	.111	.296***	.527***	.516***					
14. FD	-.184**	-.277***	-.275***	.222***	-.308***	.193**	.421***	-.354***	.332***	.484***	.507***	.541***	.555***				
15. HM	-.147*	-.226***	-.352***	.319***	-.376***	.3818**	.421***	-.317***	.317***	.418***	.484***	.397***	.475***	.491***			
16. CCA	-.226***	-.258***	-.269***	.230***	-.343***	.271***	.334***	-.298***	.181**	.353***	.525***	.496***	.611***	.489***	.476***		
17. SWL	-.246***	-.322***	-.338***	.341***	-.462***	.509***	.441***	-.422***	.423***	.438***	.610***	.565***	.591***	.578***	.587***	.575***	

Note N = 263. MS = Marital status; EDU = Education; FS = Financial strain; AI = Annual income; SPH = Self-perceived health status; ADL = Activities of daily living; AP = Leisure activity participation; SN = Lubben Social Network Scale; SWS = Satisfaction with social support; FH = Family harmony; FiS = Filial support; FD = Filial discrepancy; HM = The degree of having *mianzi* in social interactions; CCA = Chinese cultural beliefs about adversity; SWL = Satisfaction with Life Scale

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

*** Correlation is significant at the 0.001 level (2-tailed).

Table 5-11: The matrix of correlation coefficients for the variables for the respondents with a non-agricultural hukou

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Sex	-																
2. Age	.141*	-															
3. MS	.178**	.473***	-														
4. EDU	-.307***	-.353***	-.222**	-													
5. FS	.254***	.211***	.220***	-.559***	-												
6. AI	-.327***	-.350***	-.165**	.675***	-.598***	-											
7. SPH	-.246***	-.485***	-.314***	.364***	-.373***	.355***	-										
8. ADL	.281***	.721***	.408***	-.421***	.356***	-.343***	-.708***	-									
9. AP	-.307***	-.452***	-.278***	.604***	-.513***	.534***	.478***	-.580***	-								
10. SN	-.045	-.175**	-.207**	.306***	-.191**	.298***	.309***	-.278***	.458***	-							
11. SWS	-.164**	-.374***	-.293***	.414***	-.410***	.424***	.589***	-.458***	.424***	.380***	-						
12. FH	-.137*	-.327***	-.325***	.328***	-.370***	.376***	.541***	-.369***	.340***	.253***	.646***	-					
13. FIS	-.137*	-.275***	-.194**	.280***	-.270***	.248***	.405***	-.355***	.192**	.097	.609***	.646***	-				
14. FD	-.179**	-.293***	-.311***	.327***	-.319***	.284***	.478***	-.386***	.338***	.274***	.580***	.618***	.551***	-			
15. HM	-.227***	-.307***	-.263***	.410***	-.447***	.457***	.547***	-.417***	.449***	.427***	.668***	.639***	.442***	.576***	-		
16. CCA	-.295***	-.379***	-.370***	.537***	-.490***	.487***	.486***	-.435***	.445***	.275***	.647***	.732***	.591***	.566***	.632***	-	
17. SWL	-.221***	-.392***	-.298***	.511***	-.512***	.452***	.573***	-.519***	.460***	.287***	.680***	.686***	.648***	.561***	.658***	.773***	-

Note N = 269. MS = Marital status; EDU = Education; FS = Financial strain; AI = Annual income; SPH = Self-perceived health status; ADL = Activities of daily living; AP = Leisure activity participation; SN = Lubben Social Network Scale; SWS = Satisfaction with social support; FH = Family harmony; FIS = Filial support; FD = Filial discrepancy; HM = the degree of having *mianzi* in social interactions; CCA = Chinese cultural beliefs about adversity; SWL = Satisfaction with life

* Correlation is significant at the 0.05 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

*** Correlation is significant at the 0.001 level (2-tailed).

An inspection of the *p*-values regarding correlations between independent variables and dependent variable for two groups of older people with different *hukous* indicates that all these *p*-values are below 0.001. Therefore, the comparison of the patterns of correlates of life satisfaction between two groups of older people with different *hukous* based on two families of tests will not likely to result in the probability of making Type I error greater than 0.05. It seems evident that for two groups of respondents with different *hukous*, all independent variables are associated significantly with life satisfaction.

To assess whether the correlation between each independent variable and the dependent variable is the same between two groups of older people with different *hukous*, Fisher *r*-to-*z* transformation is used and the formula for this test statistic is

$$z = \frac{(z_{r_1} - z_{r_2})}{\sqrt{[1/(n_1 - 3)] + [1/(n_2 - 3)]}}$$

(Myers and Well, 2003: 497). The values of *z*

for the correlation between each independent variable and the dependent variable between two groups of older people with different *hukous* are shown in Table 5-12 (in the next page). Based on the results in Table 5-12, the relationships between the variables of years of formal education, self-perceive health status, Lubben Social Network Scale, family harmony, and the endorsement of positive Chinese cultural beliefs about adversity and the variable of life satisfaction are significantly different for two groups of older people with different *hukous*. However, given that 16 independent statistical tests are performed simultaneously, it is desirable to make a Bonferroni correction on alpha, such as *p*-values need to be 0.05/16 (equal to 0.003), so that we may be able to obtain a significant difference between two patterns of correlates at the 0.05 level (Abdi, 2007; Gordi and Khamis, 2004). After adopting Bonferroni correction, the relationships between the variable of the endorsement of positive Chinese cultural beliefs about adversity and the

variable of life satisfaction are significantly different for two groups of older people with different *hukous*.

Table 5-12: The test of difference of the correlation between each independent variable and the dependent variables between two groups of older people with different *hukous* (two-tailed)

Independent variables	z	p
1. Sex	-0.30	0.764
2. Age	0.92	0.358
3. Marital status	-1.17	0.242
4. Education	-2.39	0.016
5. Financial strain	0.75	0.453
6. Annual income	0.85	0.395
7. Self-perceived health status	-2.05	0.040
8. Activities of Daily Living	1.43	0.153
9. Activity participation	-0.53	0.596
10. Lubben Social Network Scale	2.00	0.046
11. Satisfaction with social support	-1.38	0.168
12. Family harmony	-2.30	0.021
13. Filial support	-1.06	0.289
14. Filial discrepancy	0.29	0.772
15. Having <i>mianzi</i> in social interaction	-1.33	0.184
16. Chinese cultural beliefs about adversity	-4.27	.000

In short, according to the results of correlation analyses, all independent variables that the researcher intends to examine in the present study are correlated significantly with the dependent variable of life satisfaction among older people. However, it is found that the relationships between the independent variable of the endorsement of positive Chinese cultural beliefs about adversity and dependent variable of life satisfaction are different significantly for two groups of older people with different *hukous*. The findings indicate that the relative importance of the endorsement of positive Chinese cultural beliefs about adversity to life satisfaction are rather different between two groups of older people with

different *hukous*. The research hypothesis 4-1 in the present study: “It is likely that pattern of correlates of life satisfaction will be different between the two groups of older people with different *hukous*.” is supported.

Regression analysis for the older respondents with an agricultural *hukou*

In order to examine the effects of the variables in three different levels on the dependent variable of life satisfaction, the variables which are significantly related to the dependent variable are placed in a regression equation to determine whether the variables are indeed significantly related to the dependent variable when other variables were controlled for two groups of older people with different *hukous* respectively. With respect to the regression analysis conducted for the group of older people with an agricultural *hukou*, it should be noted that the results shown in Table 5-10 indicate that the correlation between age and Activities of Daily Living is significant and high ($r = .679, p < .001$). The correlation between self-perceived health status and Activities of Daily Living is also significant and high ($r = -.703, p < .001$). Actually, when all variables are entered into regression equation, the variable of Activities of Daily Living has a variance of inflation factor (VIF) greater 3.0, which indicates the presence of multicollinearity. Because there are not sound theoretical rationales to combine the variables of age, Activities of Daily Living, and self-perceived health status into a composite scale, the variable of Activities of Daily Living is not entered into the regression equation to avoid the problem of multicollinearity in regression analysis (Miles, 2005; Tabachnick and Fidell, 2007).

As discussed previously, this study is based on Bronfenbrenner’s (1979, 2000) ecological model to guide the discussion and make connections between older people’s life

satisfaction and various correlates. The researcher intends to examine the contribution of variables from three levels to explain older people's life satisfaction. Therefore, a hierarchical regression analysis is also performed to examine the contribution of the variables in each level to life satisfaction for two groups of older people with different *hukous* respectively.

Similar to the hierarchical regression analysis conducted for the whole sample, the entry of independent variables in these two hierarchical regression analyses also follows the same arguments discussed in the previous part of this section. Therefore, in the first step of both hierarchical regression analyses, the variables in individual system (sex, age, marital status, education, financial strain, annual income, and self-perceived health status) are entered in regression equation to test if they contribute significantly to explaining life satisfaction of older people. In the second step, the variables in interpersonal level (activity participation, social network, satisfaction with social support, family harmony, filial support, and filial discrepancy) are entered and tested for the contribution in explaining variances in older people's life satisfaction. In the third step of hierarchical regression analysis, two variables in cultural level (the degree of having *mianzi* in social interaction and the endorsement of positive Chinese cultural beliefs about adversity) are entered into regression equation to test their effects on life satisfaction. The results of hierarchical regression analysis are reported in Table 5-13 (in the next page).

Table 5-13: Hierarchical regression model of the variables in individual level, interpersonal level, and cultural level on life satisfaction among older people with an agricultural hukou

Independent variables	Step 1				Step 2				Step 3						
	B	SE	β	T	Sig. T	B	SE	β	T	Sig. T	B	SE	β	T	Sig. T
Sex	-.969	.546	-.098	-1.773	.077	-.541	.427	-.055	-1.266	.207	-.456	.424	-.046	-1.074	.284
Age	.005	.047	.007	.108	.914	.017	.036	.025	.475	.635	.010	.036	.015	.284	.777
MS	-1.208	.626	-.119	-1.931	.055	-.832	.490	-.082	-1.697	.091	-.561	.485	-.055	-1.157	.248
EDU	.024	.123	.013	.198	.844	-.113	.100	-.059	-1.129	.260	-.128	.098	-.067	-1.308	.192
FS	-.615	.175	-.218	-3.509	.001	-.196	.143	-.069	-1.368	.173	-.114	.142	-.041	-.806	.421
AI	.448	.118	.263	3.788	.000	.396	.093	.233	4.245	.000	.380	.092	.224	4.119	.000
SPH	.550	.314	.125	1.752	.081	.003	.257	.001	.014	.989	-.120	.254	-.027	-.472	.638
AP						.182	.077	.122	2.359	.019	.198	.076	.133	2.612	.010
SN						-.019	.057	-.017	-.324	.746	-.031	.056	-.028	-.550	.583
SWS						.349	.089	.204	3.908	.000	.280	.089	.164	3.138	.002
FH						.391	.248	.084	1.578	.116	.407	.243	.088	1.673	.096
FiS						.300	.062	.262	4.861	.000	.209	.066	.183	3.164	.002
FD						.257	.084	.171	3.058	.002	.213	.083	.142	2.559	.011
HM											.288	.102	.142	2.822	.005
CCB											.073	.035	.111	2.074	.039
R															.809
R ²															.654
R ² change															.019
Adjusted R ²															.633
F (Sig.)															31.10(.000)
d.f.															15 247
F change (Sig.)															6.94(.001)
Cohen's f ²															0.05

Note N = 263. MS = Marital status; HK = Hukou; EDU = Education; FS = Financial strain; SPH = Self-perceived health status; AP = Leisure activity participation; SN = Lubben Social Network Scale; SWS = Satisfaction with social support; FH = Family harmony; FiS = Filial support; FD = Filial discrepancy; HM = The degree of having *mianzi* in social interactions; CCA = The endorsement of positive Chinese cultural beliefs about adversity

Table 5-13 displays the results of the hierarchical regression model of variables in individual level, interpersonal level, and cultural level on life satisfaction for the group of older respondents with an agricultural *hukou*. The unstandardized regression coefficients (B), the standard errors (SE) of B, the standardized regression coefficients (β), t value, significance of t value, regression coefficient (R), R^2 , changed R^2 , adjusted R^2 , F, significance of F, degree of freedom of F, F change, significance of F change, and Cohen's f^2 attributable to the addition of combined variance accounted for by the variables in different steps are presented.

In the step one of hierarchical regression analysis, the seven variables in individual level are entered into the equation for analysis. Shown in Table 5-13, the seven variables taken as a group produces a regression coefficient of $R = 0.597$, or variance explained, of 0.356 (adjusted $R^2 = 0.338$) with large effect size ($f^2 = 0.55$). The analysis of variance produces an F ratio of 20.14 with the corresponding p-value of 0, which provides very strong evidence of the utility of the model. According to the part of output referring to t-test, of the seven variables entered into the regression equation, two significant predictors are found. The association between the dependent variable of life satisfaction and the variable annual income is positive and significant. On the other hand, the associations between the dependent variable of life satisfaction and the variables of financial strain is negative and significant. In addition, the association between life satisfaction and marital status is found to be marginally significant and positive, with a t value of -1.931 and p-value of 0.055. The results also suggest that the association between sex and life satisfaction is marginally significant and negative, with a t value equal to -1.773 and corresponding p-value of 0.077. Furthermore, the association between self-perceived health status and life satisfaction is

marginally significant and positive, with a t value equal to 1.752 and corresponding p -value of 0.081. However, the variables of age and education do not reach significance to explaining life satisfaction of older people.

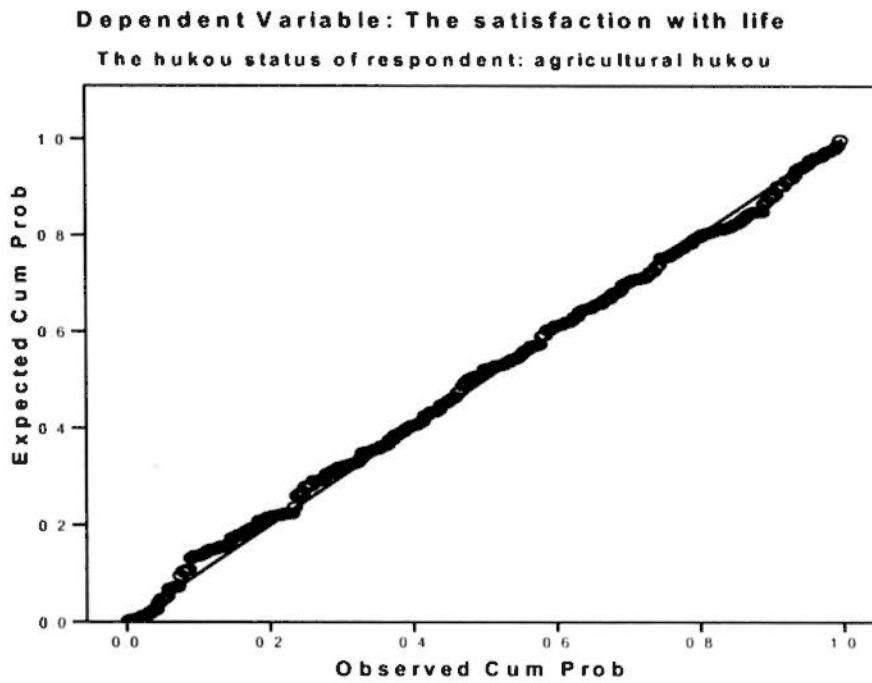
In step two of hierarchical regression analysis, after controlling for the variables in individual level, the variables in interpersonal level are found to exert significant impacts on life satisfaction, $R^2 = 0.634$, R^2 change = 0.278, adjusted $R^2 = 0.615$, F change = 31.59, $p < 0.001$. The effect size attributable to the addition of combined variance accounted for by the variables in interpersonal level to the model is large ($f^2 = 0.76$). Based on the results of regression analysis shown in Table 5-13, of the six variables entered into the regression equation, four significant predictors are found. The variables of leisure activity participation, satisfaction with social support, filial support, and filial discrepancy are associated significantly and positively with life satisfaction of older people. The results indicate that the variables of social network and family harmony do not reach significance to explaining older people's life satisfaction.

In step three of hierarchical regression analysis, after controlling for the variables in individual level and interpersonal level, the two variables in cultural level are also shown to exert impacts on life satisfaction of older people, R^2 change = 0.019, F change = 6.94, $p < 0.01$. The effect size attributable to the addition of combined variance accounted for by the variables in cultural level to the model is small ($f^2 = 0.05$). According to the regression results shown in Table 5-15, both variables of the degree of having *mianzi* in social interactions ($T = 2.822$, $p < .01$) and the endorsement of positive Chinese cultural beliefs about adversity ($T = 2.074$, $p < .05$) in cultural level are associated significantly and positively with life satisfaction of older people with an agricultural *hukou*.

The results in the step three of the hierarchical regression analysis also demonstrate that besides the variables of having *mianzi* in social interactions and Chinese cultural beliefs about adversity, the variables of annual income, leisure activity participation, satisfaction with social support, filial support, and filial discrepancy are also associated significantly and positively with life satisfaction of older people. The association between family harmony and life satisfaction appears to be marginally significant, with a t value equal to 1.673 and corresponding p-value of 0.096. Regression findings show that overall model comprising individual, interpersonal, and cultural levels explain 65.4 percent (63.3 percent adjusted) of total variance in life satisfaction of older people with an agricultural *hukou*. The value of the F statistic is equal to 31.10 with a probability level of .000, which indicates evidence of the utility of the model. In addition, the results indicate that there is not problem of multicollineality. The values of variance inflation factor for all the independent variables examined in the present regression analysis are below 2.5.

As already mentioned earlier, the above results based on the ordinary linear regression model are valid only two underlying assumptions of linear regression are satisfied, i.e., the assumptions of normality and homoskedasticity or regression residuals. To assess the normality assumption, the normal P-P plot of regression standardized residuals is obtained. As demonstrated in Figure 5-3 (in the next page), the patten in the plot is very close to a straight line. Thus, we can conclude that the residuals are pretty much normally distributed and the normality assumption is thus supported.

Figure 5-3: The normal P-P plot of regression standardized residuals (agricultural *hukou*)



The scatter plot of the standardized residuals on the standardized predicted values is displayed to provide a visual way of assessing the assumption of homoskedasticity. As shown in Figure 5-4 (in the next page), except one residual fall between 3 to 4, all residuals fall between -3 to 3 and the predominance of the residuals fall between -2 to 2. The residuals plot is approximately the same width for all values of the predicated dependent variable. There is no apparent change in the variability of the residuals in the plot. Therefore, it seems evident that the residuals are homoskedastic and there is not the problem of heteroskedasticity in this regression analysis. The assumption of constant variance or homoskedasticity is also supported.

Figure 5-4: The scatter plot of the regression standardized residuals on the standardized predicted value (agricultural *hukou*)



In short, the findings of hierarchical regression analysis indicate that the variables in individual level, interpersonal level, and cultural level all have impacts on life satisfaction for the group of older people with an agricultural *hukou*. The findings demonstrate that the influence of the variables in individual level is the most salient. At the same time, the influence of the variables in interpersonal and cultural level on life satisfaction of older people is also found to be substantial. The findings are also consistent with the ecological model proposed in the present study.

Regression analysis for the older respondents with a non-agricultural *hukou*

Similar to the analysis conducted for the group of older respondents with an agricultural *hukou*, a hierarchical regression analysis is also conducted to examine the contribution of the variables in individual, interpersonal, and cultural levels to life satisfaction of older respondents with a non-agricultural *hukou*. Bases on the results of correlation analysis as

shown in the Table 5-11 (in page 164), the correlation between age and Activities of Daily Living is significant and high ($r = .721, p < .001$). The correlation between the variable of self-perceived health status and the variable of Activities of Daily Living is also significant and high ($r = -.708, p < .001$). Additionally, the results of correlation analysis in Table 5-13 demonstrate that the correlation between family harmony and the endorsement of positive Chinese cultural beliefs about adversity is significant and high ($r = .732, p < .01$). When all independent variables are entered into regression equation simultaneously, the variables of Activities of Daily Living and family harmony are found to have values of variance inflation factor above 3.0, indicating the presence of multicollineality. Given that there are not sound theories to combine the variables of age, Activities of Daily Living, and self-perceived health into a composite score as well as to combine family harmony and the endorsement of positive Chinese cultural beliefs about adversity into a composite score, the two variables of Activities of Daily Life and family harmony are not entered into regression equation to avoid the problems of multicollinearity problem (Miles, 2005; Tabachnick and Fidell, 2007).

Table 5-14 (in the next page) displays the results of the hierarchical regression model of variables in individual level, interpersonal level, and cultural level on life satisfaction for the group of older respondents with a non-agricultural *hukou*. The unstandardized regression coefficients (B), the standard errors (SE) of B, the standardized regression coefficients (β), t value, significance of t value, regression coefficient (R), R^2 , changed R^2 , adjusted R^2 , F, significance of F, degree of freedom of F, F change, significance of F change, and Cohen's f^2 attributable to the addition of combined variance accounted for by the variables in different steps are presented.

Table 5-14: Hierarchical regression model of the variables in individual level, interpersonal level, and cultural level on life satisfaction among older people with a non-agricultural *hukou*

Independent variables	Step 1			Step 2			Step 3								
	B	SE	T	Sig. T	B	SE	T	Sig. T	B	SE	T	Sig. T			
Sex	.172	.536	.016	.321	.748	.022	.449	.002	.049	.961	.403	.036	1.000	.318	
Age	-.044	.041	-.062	-1.072	.285	-.025	.035	-.036	-.719	.473	-.025	.031	-.034	-.782	.435
MS	-.703	.625	-.059	-1.125	.262	-.186	.524	-.015	-.354	.723	.330	.475	.028	.696	.487
EDU	.242	.075	.207	3.223	.001	.159	.065	.136	2.461	.015	.093	.059	.079	1.575	.117
FS	-.770	.204	-.226	-3.780	.000	-.579	.173	-.170	-3.344	.001	-.391	.157	-.115	-2.499	.013
AI	.037	.107	.023	.343	.732	-.021	.089	-.013	-.241	.810	-.086	.080	-.054	-1.074	.284
SPH	1.863	.282	.361	6.599	.000	.714	.264	.138	2.709	.007	.606	.238	.117	2.546	.011
AP						.032	.061	.030	.530	.596	.031	.054	.028	.571	.568
SN						.034	.058	.026	.582	.561	-.002	.053	-.002	-.046	.964
SWS						.376	.112	.195	3.350	.001	.128	.106	.067	1.214	.226
FiS						.437	.066	.333	6.612	.000	.313	.062	.239	5.079	.000
FD						.132	.093	.070	1.421	.156	-.024	.086	-.013	-.283	.777
HM											.321	.107	.154	2.983	.003
CCB											.250	.037	.365	6.718	.000
R			.691					.810							.853
R ²			.477					.656							.728
R ² change			.463					.179							.072
Adjusted R ²								.640							.713
F (Sig.)			34.05(.000)					40.74(.000)							48.58(.000)
d.f.			7/261					12/256							14/254
F change (Sig.)								26.67(.000)							33.52(.000)
Cohen's f ²			0.85					0.50							0.24

Note N = 269. MS = Marital status; HK = *Hukou*; EDU = Education; FS = Financial strain; SPH = Self-perceived health status; AP = Leisure activity participation; SN = Lubben Social Network Scale; SWS = Satisfaction with social support; FiS = Filial support; FD = Filial discrepancy; HM = The degree of having *mianzi* in social interactions; CCA = The endorsement of positive Chinese cultural beliefs about adversity

Shown in Table 5-14, in the step one of hierarchical regression analysis, the seven variables in individual level are entered into the equation for analysis. The seven variables taken as a group produces a regression coefficient of $R = 0.691$, or variance explained, of 0.477 (adjusted $R^2 = 0.463$) with large effect size ($f^2 = 0.85$). The analysis of variance produces an F ratio of 34.05 with the corresponding p-value of 0, which provides very strong evidence of the utility of the model. According to the part of output referring to t-test shown in Table 5-14, of the seven variables entered into the regression equation, three significant predictors are found. The association between financial strain and life satisfaction is significant and negative, with a t value equal to -3.780 and corresponding p-value of .000. On the contrary, the association between self-perceived health status and life satisfaction is significant and positive, with a t value equal to 6.599 and corresponding p-value of .000. The association between years of formal education and life satisfaction is also significant and positive, with a t value equal to 3.223 and corresponding p-value of 0.001.

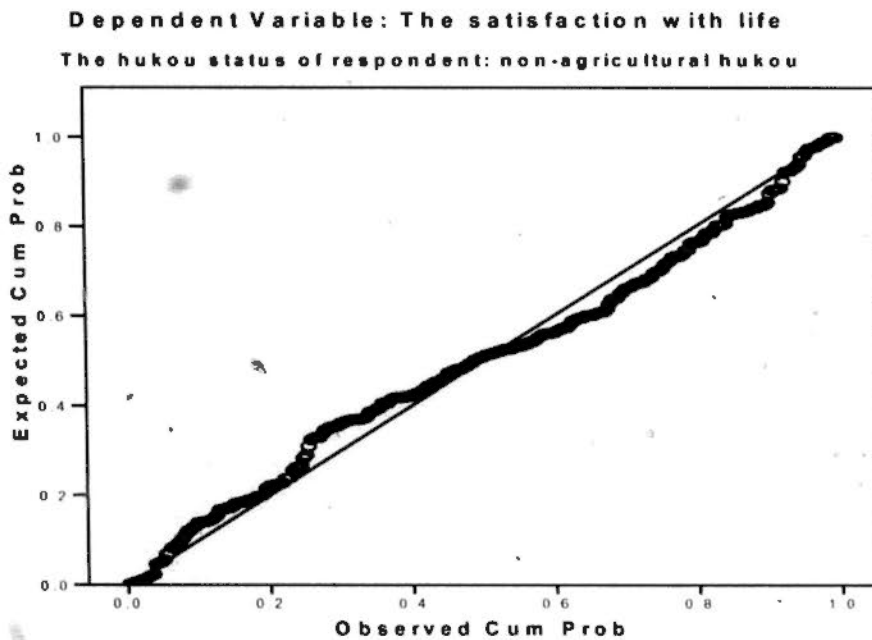
In step two of hierarchical regression analysis, after controlling for the variables in individual level, the variables in interpersonal level are found to exert significant impacts on life satisfaction, $R^2 = 0.656$, R^2 change = 0.179, adjusted $R^2 = 0.640$, F change = 26.67, $p < 0.001$. The effect size attributable to the addition of combined variance accounted for by the variables in interpersonal level to the model is large ($f^2 = 0.50$). Based on the results of regression analysis shown in Table 5-14, of the five variables entered into the regression equation, two significant predictors are found. The variables of satisfaction with social support and filial support are found to be associated significantly and positively with life satisfaction of older people.

In step three of hierarchical regression analysis, after controlling for the variables in individual level and interpersonal level, the two variables in cultural level are also shown to exert impacts on life satisfaction of older people, R^2 change = 0.072, F change = 33.52, $p < 0.001$. The effect size attributable to the addition of combined variance accounted for by the variables in cultural level to the model is small ($f^2 = 0.24$). According to the regression results shown in Table 5-14, both variables of the degree of having *mianzi* in social interactions ($T = 2.983$, $p < .01$) and Chinese cultural beliefs about adversity ($T = 6.718$, $p < .001$) in cultural level are associated significantly and positively with life satisfaction of older people with an agricultural *hukou*.

The results in the step three of the hierarchical regression analysis also demonstrate that besides the variables of having *mianzi* in social interactions and Chinese cultural beliefs about adversity, the variables of financial strain, self-perceived health status, and filial support are also associated significantly with life satisfaction of older people. Regression findings show that overall model comprising individual, interpersonal, and cultural levels explain 72.8 percent (71.3 percent adjusted) of total variance in life satisfaction of older people with an agricultural *hukou*. The value of the F statistic is equal to 48.58 with a probability level of .000, which indicates evidence of the utility of the model. In addition, the results indicate no apparent problem of multicollineality in the regression analysis. Except the values of variance inflation factor for two variables of the endorsement of positive Chinese cultural belief about adversity and satisfaction with social support, which are close to 2.80, a little higher than 2.5, all values of variance inflation factor are below 2.5.

As already mentioned earlier, the assumptions of normality and homoskedasticity of regression residuals should be examined. To assess the normality assumption, the normal P-P plot of regression standardized residuals is obtained. As demonstrated in Figure 5-5, the patten in the plot is also close to a straight line. Thus, we can conclude that the residuals are pretty much normally distributed and the normality assumption is thus supported.

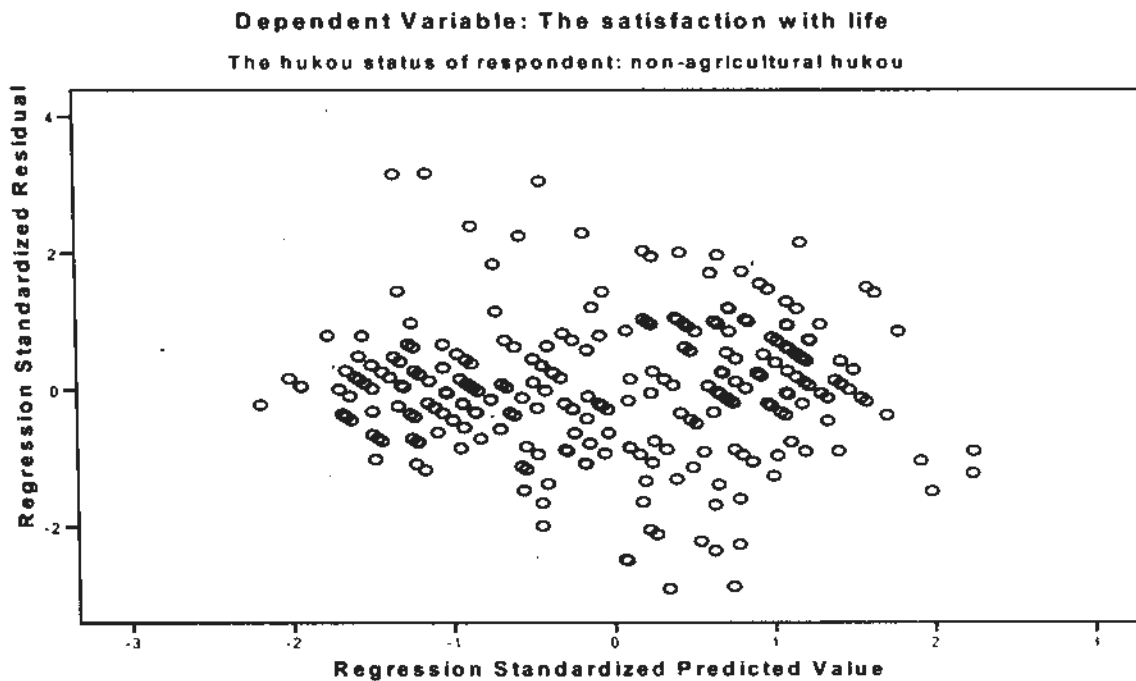
Figure 5-5: The normal P-P plot of regression standardized residuals (non-agricultural hukou)



The scatter plot of the standardized residuals on the standardized predicted values is displayed to provide a visual way of assessing the assumption of homoskedasticity. As shown in Figure 5-6, except two residuals which is more than 3, all residuals fall between -3 to 3 and the predominance of the residuals fall between -2 to 2. The residuals plot is also approximately the same width for all values of the predicated dependent variable. There is no apparent change in the variability of the residuals in the plot. It appears that the residuals

are homoskedastic and there is not the problem of heteroskedasticity in this regression analysis. The assumption of constant variance or homoskedasticity is also supported.

Figure 5-6: The scatter plot of the regression standardized residuals on the standardized predicted value (non-agricultural *hukou*)



In sum, hierarchical regression analysis reveals that the variables in individual level, interpersonal level, and cultural level all have impacts on life satisfaction for the group of older people with a non-agricultural *hukou*. This is also consistent with the ecological model proposed in the present study.

The test for the equality of regression coefficients

Based on the above two regression analyses conducted for two groups of older respondents with different *hukous*, the variable of financial strain is found to be contributed significantly to explain life satisfaction among two groups of older people with different

hukous in the first step of both hierarchical analyses. Two variables of satisfaction with social support and filial support are found to be contributed significantly to explain life satisfaction among two groups of older people with different *hukous* in the second step of both hierarchical analyses. Three variables of filial support, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity are found to be contributed significantly to explain life satisfaction among two groups of older people with different *hukous* in the second step of both hierarchical analyses.

To test for the equality of regression coefficients in the three steps of regression analyses, the z test for the difference between two regression coefficients is conducted. The formula

for this statistical test is
$$z = \frac{b_1 - b_2}{\sqrt{SEb_1^2 + SEb_2^2}}$$
 (Clogg, Eva, and Adamantios, 1995;

Paternoster, Brame, Mazerolle, and Piquero, 1998). The values of z for regression coefficients between two groups of older people with different *hukous* are presented in Table 5-15. According to the results shown in Table 5-15, only the regression coefficients regarding the relationship between the endorsement of positive Chinese cultural beliefs about adversity and life satisfaction are significantly different for two groups of older people with different *hukous*.

Table 5-15: The test of difference of the regression coefficients between two groups of older people with different *hukous* (two-tailed)

Independent variables	Step one		Step two		Step three	
	z	p	z	p	z	p
Financial strain	0.577	0.564				
Satisfaction with social support			-0.189	0.850		
Filial support			-1.505	0.132	-0.439	0.661
Having <i>mianzi</i> in social interaction					-0.223	0.825
Chinese cultural beliefs about adversity					-3.471	.0005

Based on the above two hierarchical regression analyses, we can see that in the first step of hierarchical regression analysis for the respondents with an agricultural *hukou*, the variables of marital status, financial strain, and annual income are significant predictors. In the second step of hierarchical regression analysis, the variables of annual income, activity participation, satisfaction with social support, filial support, and filial discrepancy are found to be significant predictors. In the third step of hierarchical regression analysis, the variables of annual income, activity participation, satisfaction with social support, filial support, filial discrepancy, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity are found to be significant predictors.

Regarding the hierarchical regression analysis for the respondents with a non-agricultural *hukou*, the variables of financial strain and self-perceived health are found to be significant predictors in the first step. The variables of financial strain, self-perceived health status, satisfaction with social support, and filial support are revealed to be significant predictors in the second step. The variables of financial strain, self-perceived health status, filial support, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity are found to be significant predictors in the third step. In addition, the equality of regression coefficients in the three steps of regression analyses is also tested.

However, only the regression coefficients regarding the relationship between the endorsement of positive Chinese cultural beliefs about adversity and life satisfaction are significantly different for two groups of older people with different *hukous*. This suggests

that although the endorsement of positive Chinese cultural beliefs about adversity is a significant predictors for two groups of older people with different *hukous*, the relative importance of the endorsement of positive Chinese cultural beliefs about adversity to life satisfaction is different between them. The endorsement of positive Chinese cultural beliefs about adversity is a more significant predictor of life satisfaction among older people with a non-agricultural *hukou*. According to the above research findings, the research hypothesis 4-1 in the present study: "It is likely that pattern of correlates of life satisfaction will be different between the two groups of older people with different *hukous*." is further supported.

Summary

This chapter presents the research results and answers research questions and their corresponding hypotheses in the present investigation. The first section of the chapter addresses descriptive information of respondents. The psychometric properties of the instruments are also analyzed. The second section of the chapter examines the relationship between independent variables and dependent variable. Bivariate analyses including independent-samples t test, analysis of variance, and correlation analysis as well as hierarchical regression analyses are conducted to answer the research questions and test their corresponding hypotheses. Based on the findings of bivariate analyses, all the hypotheses related to the research questions one to three are supported. Based on the findings of multivariate analysis, the research hypothesis 1-4 about positive association between finance and life satisfaction of older people and the research hypothesis 1-5 about positive association between health and life satisfaction of older people are supported. The

research hypothesis 2-1 about positive association between leisure activity participation and life satisfaction of older people, the research hypothesis 2-2 about positive association between intergenerational relations and life satisfaction of older people, and the research hypothesis 2-3 about positive association between informal social support and life satisfaction of older people are also supported. Furthermore, the research hypothesis 3-1 about positive association between the degree of having *mianzi* in social interactions and life satisfaction of older people and the research hypothesis 3-2 about positive association between the endorsement of positive Chinese cultural beliefs about adversity and life satisfaction of older people are supported. In addition, the findings of bivariate and multivariate analyses support the research hypothesis 4-1 that pattern of correlates of life satisfaction will be different between the two groups of older people with different *hukous*. The next chapter will provide a discussion of the research findings.

Chapter seven: Discussion

The present study examines the correlates of life satisfaction among older Chinese people. The data collection is conducted in Putian, Fujian, China. Based on human ecology proposed by Bronfenbrenner (1979, 2000), the researcher examines three levels of potential correlates of life satisfaction among older people. The three levels are individual, interpersonal, and cultural levels. The present study is also guided by four research questions and eleven research hypotheses. In this chapter, a discussion of the research findings in the present study is provided. This chapter consists of six sections. The first section has a discussion on the profile of the research participants. The second section addresses and discusses the psychometric properties of the measurement scales adopted in the present investigation. The major findings for each research question and their corresponding research hypotheses are discussed in the third section. In the fourth section, theoretical and practical implications of the present study are presented. The fifth section points out the limitation of the present study and suggests the implications for further studies. A brief summary of discussions is made in the sixth section.

Profile of the participants

The present study adopts a non-probability or convenience sampling, because it is time consuming and economically expensive to randomly recruit participants. As an illustration, in 2007, there were about 365, 000 older people aged 60 and above in Putian, an area of 4,200 square kilometers (莆田市人民政府, 2007b). Thus, it would take the researcher much time and would be beyond the researcher's financial capacity to adopt a probability

sampling for the present research. Furthermore, the present study is not planned to generalize the results to broader population, but to gain more insight into the subject of inquiry and contribute to developing a foundation for further studies on the factors associated with life satisfaction among older people in mainland China. As a result, the researcher mainly chooses the places where older people gather to conduct data collection, such as temples, activity centers for the elderly, parks, and so on. Because the present study uses non-probability sampling and chooses places where older people gather to conduct data collection, participants who are interviewed in the present study may be prone to getting along well with other older people and taking part in social activities. They also tends to be relatively healthy people. With respect to the *hukou* status of the respondents, the researcher planned to interview a minimum of 250 older people with different *hukous* to facilitate the comparison between them. Thus, a total of 263 older people with an agricultural *hukou* and a total of 269 older people with a non-agricultural *hukou* are interviewed in the present study.

Although participants are not from a random sample, the findings of the present study may still reflect certain degree of reality. First, the participants are interviewed from different places in Putian. There are not more than 25 older people who are interviewed in one activity center, temple, or other place where older people gather. The frequency distributions of annual income and self-perceived health status (shown in Table 5-1 in page 136) also reflect a diverse health and economic background of the respondents in the present study. Second, the present study successfully interview a total of 532 older people. This sample size may also be able to reflect certain degree of reality. Actually, the sample size in the present study is also much bigger than many previous studies on correlates of

life satisfaction among older people in mainland China. For example, the sample of the study in Beijing by Zhang and Yu (1998) consists of 350 elderly people, 200 from a clinic and 150 from a community. The sample of a study in Changchun, Jilin (吉林長春) consists of 194 older people (熊躍根, 1999). However, it is undoubted that empirical studies with random sampling and large sample are recommended to examine the correlates of life satisfaction among older people in China.

In addition, with respect to the life satisfaction among older people, the score of the scale range from five to 30. In the present study, the mean of life satisfaction among older people is 17.15, with a standard deviation of 5.30 (shown in Table 5-2 in page 137). The mean is almost equal to the median of scale, i.e., 17.25. Overall, older respondents in the present study have moderate or mild life satisfaction. This result is a little different from the findings in earlier observations that life satisfaction of a wide range of respondents, on average, tends to be negatively skewed above the scale mid-point, i.e., naturally inclined to be positive (Cummins, 1995; Chen and Davey, 2008b).

Psychometric properties of the measurement instruments

The present study constructs an instrument of the degree of having *mianzi* in social interactions and adopts some scales which have been proved to be valid and reliable by other scholars. These scales include financial strain, Activities of Daily Living, leisure activity participation, Lubben Social Network Scale, satisfaction with social support, filial harmony, filial support, filial discrepancy, the endorsement of positive Chinese cultural beliefs about adversity, and Satisfaction with Life Scale.

The instrument of the degree of having *mianzi* in social interactions is constructed based on the work by Hu (1944), Ho (1976), King and Bond (1985), Kwang (1987), and others. In the present study, the researcher does not intend to explore or examine the meaning of having *mianzi* in social interactions, but to investigate the degree of having *mianzi* in social interactions. Given that *mianzi* occurs chiefly among relatives, neighbors, classmates, colleagues, teachers and students, people sharing a natal area, and so forth in Chinese society (Kwang, 1987), only the degree of having *mianzi* in social interactions with relatives, friends, and neighbours are assessed because some older people may not have classmates, colleagues, and so on. The research findings indicate that internal consistency of the constructed scale is high. Its Cronbach's alpha reliability is equal to 0.93 for the whole sample as well as for both respondents with different *hukous* in the present study. The findings suggest that the constructed scale of the degree of having *mianzi* in social interactions is reliable.

Regarding the scale of financial strain for the elderly people, it is copied from the study of Chou and Chi (2001). Chou and Chi reported a high internal consistency of the scale ($\alpha = 0.91$) in their study in Hong Kong. However, in the present study its Cronbach's alpha is equal to 0.75 for the whole sample, 0.71 for the respondents with an agricultural *hukou* and 0.70 for the respondents with a non-agricultural *hukou*. Although the internal consistency of the scale in the present study is acceptable, it is much lower than that in the study by Chou and Chi (2001). It is possible that there are many differences such as economic and social development between Putian, Fujian and Hong Kong (福建省統計局, 2008; 社會福利署, 2007), thus the older people in the two places may have some different concerns about their finance and the scales has different internal consistency in the two places. In

addition, as shown in Table 5-6 (in page 150), the financial strain of older respondents are correlated significantly and negatively with the annual income of older people ($r = -0.647$, $p < .001$). This indicates that although these two different aspects of older people's finance are correlated, they are different variables. It appears that financial strain is likely to provide more information about older people's economic status. It is clear that older people with similar income can experience different financial strain, for example, some of them may have to pay expensive medical care. Respondents' views on income resources and life styles will also result in their different perceptions of financial strain. The distinction between older people's income and their financial strain should be further examined. It seems that when we examine older people's finance, both their income and financial strain should be studied, thus we can obtain more information about their economic status.

The scale of Physical Activities of Daily Living (ADL) from Multidimensional Functional Assessment Questionnaire (OARS, Kane and Kane, 1981; Center for the Study of Aging and Human Development, 1975) used in the present study has a Cronbach's alpha equal to 0.79 for the whole sample, 0.79 for the respondents with an agricultural *hukou*, and 0.80 for the respondents with a non-agricultural *hukou*. Shown in Table 5-6 in page 150, the high and significant correlation between the single item scale of self-perceived health status of older respondents and the multi-item scale of ADL of older people ($r = -0.705$, $p < .001$) seems to support that the scale of ADL is a reliable and valid scale to assess older people's functional health. It appears that this scale can be applied to assess functional health of older people living in the communities in China. Future studies may examine whether this scale can be adopted to assess the functional health of the elderly in residential facilities in mainland China.

For the measurement of leisure activity participation, the present study uses the scale adopted by Ragheb and Griffith (1982) and Boley (2001). This scale was based on the Leisure Activities Blank (LAB, 120 items) developed by McKechnie (1975) by Ragheb and Griffith (1982). The reliability co-efficient of the instrument was computed to be 0.84 in Boley's (2001) research. However, in the present study, the scale has a Cronbach's alpha equal to 0.69 for the whole sample, 0.48 for the respondents with an agricultural *hukou*, and 0.75 for the respondents with a non-agricultural *hukou*. It appears that this scale is more suitable to examine leisure activity participation of older people with a non-agricultural *hukou*. It is possible that this scale is developed for the older people in the United States of America which is an industrial society. Thus, the scale seems to be suitable to measure leisure activity participation for older respondents who were industrial workers, professionals, workers in government agencies, and so on in China. For the older respondents with an agricultural *hukou*, they are peasants and may need to do agricultural work in their 60s, 70s, or even 80s, probably because there is a lack of pension system for them. The researcher was born and grew up in a village in Putian. According to his own life experiences in Putian, all his grandparents and other older relatives do agricultural work in their 60s and 70s. It is clear that the life styles of older people with different *hukous* are different. Furthermore, given the disparity between urban and rural areas (胡鞍鋼 et al.1995; Zhang 2002; Wu and Treiman 2003; Liu 2005), the availability of the types of leisure activities are also likely to be different. For example, it was found that more than 50 percent of rural older people do not have any formal education (中國老齡科學研究中心, 2008), the present study also indicates that 38 percent of rural people do not have any formal education. Thus, reading newspapers, magazines or books is not likely to be a type of

leisure activity for a large proportion of rural older people. In short, due to the different life styles and availability of the types of leisure activities, it is possible that the scale, which is reliable and suitable to measure the level of leisure activity participation for older people with a non-agricultural *hukou*, may not be reliable and suitable to measure the level of leisure activity participation for older people with an agricultural *hukou*. It seems that more efforts are necessary to examine the differences of leisure activity participation between older people with different *hukous* in mainland China and to develop a more reliable scale to examine leisure activity participation for older people in China.

Regarding the perceived social support network which is measured by Lubben Social Network Scale (LSNS-6) in the present study, it has a Cronbach's alpha equal to 0.84 for the whole sample, 0.85 for the respondents with an agricultural *hukou*, and 0.83 for the respondents with a non-agricultural *hukou*. Lubben et al. (2006) evaluated the LSNS-6 among a sample of older adults in Hamburg (Germany), Solothurn (Switzerland), and London (UK) and found that across these three samples of older adults, the LSNS-6 showed high internal consistency ($\alpha = 0.83$). The findings of the present study support the finding by Lubben et al (2006) that LSNS-6 has a high internal consistency. Lubben et al. (2006) suggested that the LSNS-6 should be considered for inclusion in practice protocols of gerontological practitioners, because this scale is relatively short and it is also easy to handle this scale. It seems that the suggestion of Lubben et al. (2006) may also be applicable to China. Actually, an old version of Lubben Social Network Scale (LSNS) was already adopted by scholars in Hong Kong (Chi and Boey, 1992; 齊鈺, 1998; Chou and Chi, 1999). It seems that this revised new version of LSNS should be adopted in future studies on social network of older Chinese, because it is shorter and reliable. It can save

older respondents much time to fill up the questionnaire if researchers use this scale instead of the old version of LSNS.

With respect to the scale of satisfaction with social support adopted from the study by Phillips et al. (2007), the Cronbach's alpha is equal to 0.88 for the whole sample, 0.90 for the respondents with an agricultural *hukou*, and 0.88 for the respondents with a non-agricultural *hukou*. The findings suggest that this scale is reliable and may be used in the future studies in social gerontology in China and other countries.

For the intergenerational relations, two composite measures are used, i.e., filial support and filial discrepancy. The scale of filial support was used by Gallois, et al. (1999), Yue and Ng (1999), Ng, et al. (2000), and Kwan et al. (2003). In the present study, the scale has a Cronbach's alpha of 0.87 for the whole sample, 0.89 for the respondents with an agricultural *hukou*, and 0.85 for the respondents with a non-agricultural *hukou*. This suggests that the scale is reliable. In terms of filial discrepancy, the findings also suggest that it is a reliable scale. It has a Cronbach's alpha of 0.86 for the whole sample, 0.88 for the respondents with an agricultural *hukou*, and 0.83 for the respondents with a non-agricultural *hukou*.

The scale of the endorsement of positive Chinese cultural beliefs about adversity is also found to have a high internal consistency in the present study. It has a Cronbach's alpha of 0.88 for the whole sample, 0.87 for the respondents with an agricultural *hukou*, and 0.89 for the respondents with a non-agricultural *hukou*. The alpha of the scale was found to be 0.76 in a study on psychological adjustment in Chinese family with economic disadvantage in Hong Kong (Shek et al., 2003). In a longitudinal study in adolescents with economic adversity in Hong Kong, the scale was found to be reliable with alpha equal to 0.76 and

0.84 respectively (Shek, 2005). The findings of the present study provide more evidence to support that this scale is reliable to be used among Chinese people.

Regarding the scale of Satisfaction with Life Scale (SWLS), it is also found to have high internal consistency in the present study. It has a Cronbach's alpha of 0.93 for the whole sample, 0.92 for the respondents with an agricultural *hukou*, and 0.93 for the respondents with a non-agricultural *hukou*. The internal consistency of SWLS in the present study is much higher than the scores reported in other studies in Hong Kong (e.g., Sachs, 2003; Shek, 1998, 2005). The findings support the argument that SWLS is a reliable scale suitable for use with the young and the elderly in different societies (Diener et al., 1985; Balatsky and Diener, 1993; Biswas-Diener and Diener, 2001).

In summary, the multi-item scales used or constructed in the present study are found to have acceptable or high reliability, except the scale of leisure activity participation for the respondents with an agricultural *hukou*. The low reliability of the scale of leisure activity participation for the respondents with an agricultural *hukou* may be attributed to life styles of the respondents who are peasants and living in rural areas. It seems that more efforts are necessary to examine the leisure activity participation of this group of older people in China and to modify or develop more reliable measurement instruments to examine their leisure activity participation.

Findings for research questions and their corresponding hypotheses

The present study adopts the human ecology proposed by Bronfenbrenner (1979, 2000) as the basis of theoretical framework. The researcher examines three levels of correlates of life satisfaction among older people. The three levels are individual, interpersonal, and

cultural levels. The research questions one to three and their corresponding hypotheses intend to examine the variables in three levels respectively. The fourth research question and its corresponding hypothesis intend to examine the differences of pattern of correlates between two groups of older people with different *hukous*. In this section, the researching findings for research questions and their corresponding hypotheses are discussed.

The correlates of life satisfaction in individual level

The individual level in ecological model reflects individual's personal characteristics. Among the correlates of life satisfaction of all 532 respondents in the present study, the individual level variables include sex, age, marital status, *hukou*, years of formal education, financial strain, annual income, self-perceived health status, and functional health.

With regards to sex, the results of bivariate analysis imply that male respondents are more satisfied with life than female respondents. This is consistent with the research by Smith and Baltes (1998) and Borg et al. (2006), but is contrary to the research by 李翊竣 and 齊鈺 (1990) and Coke (1992). It is possible that this finding reflects older women's initially disadvantaged position. For example, as an illustration in Table 5-6 (in page 150), respondents' sex is correlated significantly with marital status ($r = 0.151, p < 0.01$) and years of formal education ($r = -0.280, p < 0.001$). These indicate that older women are more likely to be widowed and have less education, while the respondents who are married and have more years of formal education were usually found to report higher life satisfaction (Connidis and McMullin, 1993; Pinquart and Sorensen, 2000; Subasi and Hayran, 2004; Li et al., 2007). However, when other variables are controlled, sex is not found to be a significant predictor of life satisfaction among older people in the present

study. This suggests that sex is not independent by itself and is likely to be moderated by other characteristics of older people.

The age of older respondents is also found to be correlated significantly with life satisfaction among older people in bivariate analysis in the present study. This supports the finding that age is a significant correlate of older people's life satisfaction (Wilson, 1967; Klemmack and Roff, 1984; Chou and Chi, 1999; Lee, 2005; Wong, 2006). However, this finding is contrary to the finding of some previous studies which indicate that life satisfaction among older people remains stable with age (e.g., Mercier et al., 1998; Hollis, 1998; Hamarat et al., 2002). Furthermore, the findings of multivariate analysis (shown in Table 5-7 in page 154) reveal that age is not a significant predictor of life satisfaction among older people in the present study. It is possible that the personal characteristics of older people such as age is not independent by itself and is moderated by the larger society where it is imbedded. Therefore, the studies on life satisfaction and aging do not yield a common finding. This also illustrates the self-evaluative nature of life satisfaction. For instance, as shown in Table 5-6 (in page 150), the respondents' age is correlated significantly with all other independent variables, especially with functional health, self-perceived health, marital status, leisure activity participation, and annual income. In addition, it was suggested that chronological age is sometimes less significant than other aspects of age (Bytheway, 1997). Perhaps besides the chronological age, future empirical studies can examine the relationship between older people's life satisfaction and their psychological age, i.e., the perception of how old one feels and physiological age, i.e., one's age estimated in terms of function. Such studies would provide useful information for us

to develop a better understanding about the relationships between age and life satisfaction among older people.

In terms of marital status, the finding of bivariate analysis in the present study reveals that married people report higher life satisfaction than widowed or divorced respondents. This confirms many previous studies which point to a positive association between having a marriage partner and being satisfied with life (e.g., Morgan, 1976; Golant, 1986; Lubben, 1989; Connidis and McMullin, 1993; Kehn, 1995; Hong and Duff, 1997; Li et al., 2007). The hypothesis 1-1 that married older people have higher life satisfaction than older people who are widowed or divorced is supported. It is possible that widowed, divorced, or single people do not possess the level of social and emotional support that the married do. The results of correlation analysis (shown in Table 5-6 in page 150) in this study also demonstrate that marital status is correlated significantly with social network ($r = -0.326, p < 0.001$), which indicates that married people have more social network than widowed and other people. The more social network of married older people implies that they can receive more emotional and physical support in time of crisis and hence have higher life satisfaction. Furthermore, as Dykstra (1995) pointed out that “[m]any activities are couple-companionate, undertaken as a couple, with other couples” (p. 321). Therefore, it is likely that the availability of a spouse provides older people with more opportunities for social interaction and activity participation, which is frequently found to contribute to life satisfaction of older people (e.g., Kelly, 1987; Lawton, 1994; Christensen et al., 1995; Zimmer, Hickey, and Searle, 1995; Sparks et al., 2004). In addition, older people who are married tends to be younger and are in better health, which is supported by the results of correlation analysis in the present study (shown in Table 5-6 in page 150). While age are

frequently found to be negatively and significantly associated with life satisfaction and health are often found to be correlated positively and significantly with life satisfaction (Pinquart and Sorensen, 2000, 2001). The multivariate analysis indicates that marital status of older respondents is not a significant predictor of life satisfaction (shown in Table 5-7 in page 154). This suggests that the impacts of marital status on life satisfaction among older people is attenuated by other characteristics of older people.

In concordance with the findings from previous studies (e.g., George et al., 1985; Osberg et al., 1987; Krause, 1993; Lohr, et al., 1988; Glass and Jolly, 1997; Chou and Chi, 1999; Pinquart and Sorensen, 2000; Subasi and Hayran, 2004), the variable of formal education is found to be positively associated with life satisfaction of older people in the present study. This supports the research hypothesis 1-3 that education would be positively associated with their life satisfaction. It was argued that education would encompass relative advantages of various kinds that consequently provide a foundation for successful aging and thus lead to higher life satisfaction (Meeks and Murrell, 2001). On the average, people with more education are expected to have better occupational opportunities and accordingly, better financial and social status through their young and middle adulthood years. The correlation analysis in the present study (Table 5-6 in page 150) also shows that years of formal education is correlated negatively with financial strain ($r = -0.523, p < 0.001$) and positively with annual income ($r = 0.654, p < 0.001$) and leisure activity participation ($r = 0.602, p < 0.001$). Therefore, it seems reasonable that the variable of years of formal education is found to be correlated significantly and positively with life satisfaction of older people in the present study. Furthermore, the results in the step one and two of hierarchical regression (shown in Table 5-7 in page 154) also reveal that education is a

significant predictor to life satisfaction of older people. Only when two cultural variables are entered into regression equation, it is not a significant predictor again. Additionally, the correlation analysis (Table 5-6 in page 150) shows that the variable of years of formal education is correlated significantly and positively with at least two cultural variables, i.e., the degree of having *mianzi* in social interactions ($r = 0.324, p < 0.001$) and the endorsement of positive Chinese cultural beliefs about adversity ($r = 0.376, p < 0.001$). It seems future studies are needed to examine the relationships between years of formal education of older people and their perceptions of cultural factors. Further research is also needed to explore how the impacts of older people's education on life satisfaction are attenuated by cultural factors such as the two factors proposed in the present study.

Consistent with the research hypothesis 1-4 that older people's finance would be positively associated with their life satisfaction, financial strain is found to be negatively correlated with life satisfaction of older people in this study (see Table 5-6 in page 150) and annual income is found to be correlated significantly and positively with life satisfaction. Furthermore, the results of hierarchical regression analysis (shown in Table 5-7 in page 154) indicate that financial strain contributes significantly to explaining the variance of life satisfaction in all three steps. The finding of negative correlation between financial strain and older people's life satisfaction in the present research is consistent with the findings of many previous studies (e.g., George et al., 1985; Osberg et al., 1987; Zhang and Yu, 1998; Lohr et al., 1988; Ho et al., 1995; Chou and Chi, 1999; Bowling and Windsor, 2001; Borg et al., 2006; Li et al., 2007). This is understandable because according to the need-gratification model of life satisfaction proposed by Maslow (1970), people tend to base their life satisfaction judgment on the gratification of five basic needs, among

which physiological need is the most basic one. Financial strain is quite likely to lead to psychological distress among older people (Ferraro and Su, 1999) and hence exerts negative impacts on their life satisfaction. Geroge and Clipp (1991) also argued that financial security plays a major role in the self-evaluative process of life satisfaction among older people. Furthermore, evidence suggests that financial strain tends to be more prolonged among older people because they have fewer options for improving their economic circumstances (Krause, 1987). This also implies that financial strain may have stronger influence on life satisfaction of older people than that of young and middle adults. It should also be noted that the annual income is correlated significantly and negatively with financial strain ($r = -0.647, p < 0.001$) (shown in Table 5-6 in page 150). This is understandable since the two measurements tend to be two sides of the same coin. The two instruments are expected to measure the same thing, i.e., the financial status of older people, although two variables are different.

Another general consistency in results is that health is correlated significantly with life satisfaction among older people in the present study. The results of correlation analysis indicate that self-perceived health status is correlated significantly and positively with life satisfaction ($r = 0.505, p < 0.001$) and functional health measured by Activities of Daily Living is correlated significantly and negatively with life satisfaction ($r = -0.465, p < 0.001$) (shown in Table 5-6 in page 150). The findings support the research hypothesis 1-5 about positive association between life satisfaction and health. These findings provide support to the findings of many previous studies on the correlates of life satisfaction among older people (e.g., Bowling, 1990; 李翊竣 and 齊鈺, 1990; Roos and Havens, 1991; Stolar et al., 1992; Bowling et al., 1993; Mannel and Dupuis, 1996; Iwatsubo et al., 1996;

Zhang and Yu, 1998; Rogers, 1999; Silverman et al., 2000; Sparks et al., 2004; Borg et al., 2006; Berg et al., 2006). In addition, it should be pointed out that the self-perceived health status is correlated significantly and negatively with Activities of Daily Living ($r = -0.705$, $p < 0.001$) (as shown in Table 5-6 in page 150), because the two instruments also tend to be the two sides of the same coin and measure the same thing, i.e., the health of older people. However, the results of hierarchical regression analysis (Table 5-7 in page 154) show that self-perceived health status contributes significantly to explaining the variance of life satisfaction in the steps one and two. In the step three of hierarchical regression analysis, self-perceived health status is found to be a marginally significant predictors of life satisfaction ($T = 1.942$, $p = .053$). It was reported that self-perceived health status of older people was associated with family and cultural factors in mainland China (Yu, Zhang, Draper, Kassab, and Miles, 1997). Another study in China also explored that older people's psychological dispositions such as personal attitudes, motivations, and belief condition their self-reported health (Wu and Schimmele, 2006). Furthermore, Li and Zhu (2006) reported a significant association between self-reported health status and community-level income inequality in China. The relationship they found appears as an inverted-U shape. It means that rising inequality improves health which inequality is low and harms health when inequality is above a certain level. Additionally, there is the argument that when measures of health incorporate subjective experiences such as self-ratings of health or measures of health satisfaction, they may reflect central aspects of individual's personal identity, including a religious or spiritual identity (Idler, 1995). Therefore, it is likely that self-perceived health status of older people in mainland China is not independent by itself and is moderated by social context and older people's psychological dispositions. Given the

importance of health to older people's life, future empirical studies are needed to examine the relationships between the health of older people and their perceptions of cultural factors, such as the two factors proposed in the present study. Further research is also needed to explore how the impacts of older people's health on life satisfaction may be attenuated by cultural and other factors.

As hypothesized, the findings of bivariate analysis in the present study indicate that older people with a non-agricultural *hukou* have higher life satisfaction than older people with an agricultural *hukou*. The results of correlation analysis (see Table 5-6 in page 150) show that *hukou* is correlated significant with life satisfaction ($r = 0.160, p < 0.01$). The result of *t*-test also reveals that there are statistically significant differences of life satisfaction between the respondents with a non-agricultural *hukou* ($M = 18.0; SD = 5.54$) and the respondents with an agricultural *hukou* ($M = 16.3, SD = 4.91$). The finding is understandable because people with agricultural *hukou* are often denied from many of the basic privileges enjoyed by people with non-agricultural *hukou* such as state subsidized pension, housing, health insurance, community cultural activities (Zhang, 2002; Wu and Treiman, 2003; Liu, 2005; Wang, 2005; Au et al., 2007). Based on the results of correlation analysis (shown in Table 5-6 in page 150), *hukou* is correlated significantly with education ($r = 0.466, p < 0.001$), financial strain ($r = -0.400, p < 0.001$), annual income ($r = 0.518, p < 0.001$), and leisure activity participation ($r = 0.322, p < 0.001$). These findings indicate that older respondents with a non-agricultural *hukou* have more formal education, less financial strain, more annual income, and participate more in activities than their counterparts with a non-agricultural *hukou*. These findings highlight the importance of *hukou* in understanding older people's life satisfaction in mainland China. In addition, the

emergence of *hukou* as a significant factor of life satisfaction among older people in mainland China expands our understanding of the dynamics influencing older people's satisfaction with life. However, it should be noted that even though *hukou* is a significant correlate of life satisfaction in bivariate analysis, it is not a significant predictor of life satisfaction in multivariate analysis (shown in Table 5-7 in page 154). It is likely that the impact of *hukou* on life satisfaction is mediated or attenuated by the interrelationships among *hukou* and other independent variables. As we can see that the socio-demographic backgrounds such as education and finance (shown in Table 5-9 in page 162) between two groups of older people with different *hukous* are different. Additionally, older people with an agricultural *hukou* generally live in rural areas and older people with a non-agricultural *hukou* generally live in urban areas. The two groups of older people with different *hukous* may have different living styles and living standards, which may also exert impacts on older people life satisfaction. Further studies are warranted to explore the complex interrelationships among *hukou* and other variables and to explore how *hukou* exerts impact on people's life throughout the life span and especially in later life.

Additionally, based on the findings of the step one of hierarchical regression analysis presented in Table 5-7 in page 154, when all variables in the individual level are entered into regression equation, only the variables of years of formal education, financial strain, and self-perceived health status are found to be significant predictors. The findings suggest that the variables of years of formal education, financial strain, and self-perceived health status of older people are more significant and important factors than the variables of sex, age, marital status, and *hukou* in predicting life satisfaction among older people. These findings are understandable because finance and health are basic elements for the

satisfaction of people's physiological need, which is the most basic need indicated by Maslow (1970). Furthermore, the education level of the elderly is associated positively to their finance.

In summary, the findings demonstrate that the factors in individual level of ecological model, especially the factors of financial and health, are important factors to predict life satisfaction among older people. However, it seems that the factors in individual level of ecological model are not independent by themselves. There are potential intercorrelations among different factors in the individual level. The factors in individual level are also possible to be intercorrelated with factors in other levels of ecological model.

The correlates of life satisfaction in interpersonal level

The microsystem or interpersonal level in ecological model reflects the relationships between individuals and their immediate environments (Bronfenbrenner, 1979, 2000). In the present study, the interpersonal level variables include leisure activity participation, informal social support, and intergenerational relations.

The two variables of life satisfaction and leisure activity participation have been widely researched. In the present study, leisure activity participation is found to have significant and positive correlation with life satisfaction not only in bivariate analysis (shown in Table 5-6 in page 150) but also in multivariate analysis (shown in Table 5-7 in page 154). The positive correlation between life satisfaction and leisure activity participation in the present study is consistent with the findings of previous studies (e.g., Riddick and Daniels 1984, Riddick, 1985; Steinkamp and Kelly, 1987; Gueldner and Spradley, 1988; Lawton, 1994; Christensen et al., 1995; Zimmer, Hickey, and Searle, 1995; Searle et al., 1995; Ruuskanen

and Ruoppila, 1995; Iwatsubo et al., 1996; Misra et al., 1996; Yusuf, Croft, Giles, Anda, Craper, Caspersen, and Jones, 1996, Stouffer, 2000; Everard and Lach, 2000; Silverstein and Parker, 2002; Menec, 2003; Sparks et al., 2004; Nimrod and Adoni, 2006). The findings confirm the research hypothesis 2-1 that older people' leisure activity participation is positively associated with their life satisfaction. At the same time, the findings provide support to activity theory, which proposes that normal aging involves maintenance of the activities of middle age and suggests that activity produces successful aging through relationship between activity and life satisfaction (Havighurst et al., 1963). Furthermore, the findings support the theory of successful aging proposed by Rowe and Kahn (1987, 1997, and 1998). According to the research findings, the active life style prescribed or suggested by the activity theory and the theory of successful aging is much more enjoyed by older people. It is possible that leisure activity participation provides older people opportunities to make good use of their free time, build personal confidence, make their bodies stronger, and extent social network, such as making new friends. At the same time, older people have endured many losses (e.g., loved ones, work, cognitive losses, and so on) and are considered more familiar with loss than younger persons. Leisure activity participation may help older people keep busy in order to manage the suffering that results from loss. Iwasaki (2006) also argued that activity participation may provide a setting for creating a meaningful life, which may help to promote subjective well-being among older people. Thus, it seems reasonable that leisure activity participation are associated positively with life satisfaction among older people.

In terms of informal social support for older people, two instruments, i.e., social network and satisfaction with social support are used to measure it. Correlation analysis shows that

both variables are correlated significantly and positively with life satisfaction of older people in the present study (shown in Table 5-6 in page 150). This provides support to the research hypothesis 2-3 that older people's informal social support would be positively associated with their life satisfaction. The findings highlight the importance of social support for life satisfaction of older people. Many earlier studies have also found social network is associated significantly with life satisfaction among older people (e.g., Zhang and Yu, 1998; Rogers, 1999; Pinqart and Sorensen, 2000; Abu-Bader et al., 2002; Jang et al., 2004; Litwin and Shiovitz-Ezra, 2006). In addition, the results of hierarchical regression analysis show that social network does not contribute to explaining the variance of life satisfaction; however, satisfaction with social support is found to be a significant predictor in both step two and step three of hierarchical regression equation (shown in Table 5-7 in page 154). The findings add research evidence which indicates older people's perceptions concerning social support are much more important than objective assessments of social support in predicting their subjective well-being (Newsom and Schulz, 1996; Pinqart and Sorensen, 2000; Chi and Chou, 2001; Siu and Phillips, 2002; Antonucci and Akiyama, 2007, 1991). The importance of social support to older people's life seems apparent because aging is a process of decline in physical and psychological powers, accompanied by decreases in social, familial, and pleasurable opportunities (Atchley and Barusch, 2004; McInnis-Dittrich, 2005; Hooyman and Kiyak, 2005; Whitbourne, 2008), older people need social, emotional, physical, or other support in times of crisis. For example, family members, neighbors, close relatives, and friends can provide emotional and social support for older people when older people's spouses or close friends die.

The findings about positive association between social support and life satisfaction among older people in the present study can be interpreted by the two theories. According to the support/efficacy theory, social support affect health and well-being by instilling in the individuals a sense of self-worth and self-efficacy (Antonucci and Akiyama, 2007). Another theory argues that social support help the individuals learn how to regulate their emotions, which makes people to more competently navigate the challenges and the choices confronted in daily life, and thus optimizes their overall well-being (Antonucci and Akiyama, 2007). Additionally, it was argued that even the perception of the availability of people to help with chores and assist with other tasks can contribute to older people's greater competence and confidence of being able to live independently and autonomously (Ward, Sherman, and LaGory, 1984). In short, given that the decline in physical, psychological, and social power in later life, it seems that a possible life satisfaction in old age become more dependent on various social support.

To examine the relationship between life satisfaction and intergenerational relations, three instruments, i.e., family harmony, filial support, and filial discrepancy are used to measure intergenerational relations. The results of bivariate analyses reveal that all three instruments are associated significantly and positively with life satisfaction of older people in the present study (shown in Table 5-6 in page 150). The hierarchical analysis also indicates that all three instruments contribute significantly to explaining life satisfaction of older people when two cultural variables are not entered into regression equation (shown in Table 5-7 in page 154). After two cultural variables are entered into regression equation, the variables of family harmony and filial support still contribute significantly to explaining life satisfaction of older people. These findings support the research hypothesis 2-2 about

positive association between intergenerational relations and life satisfaction among older people. The findings are also in concordance with the argument of Zhang and Yu (1998), 石丹理 and 賴明輝 (2000), and Shek (2001, 2006a) that there are strong emphasis on family harmony and harmonious relationships among family members in Chinese culture. Furthermore, the findings are consistent with the findings of many previous research (e.g., Mutran and Reitze, 1984; Ingersoll-Dayton and Antonucci, 1988; Silverstein and Bengtson, 1994; Zhang and Yu, 1998; Pei and Pillai, 1999; Katz and Lowenstein, 1999; Mehta, 1999; 熊躍根, 1999; Chi and Chou, 2001; Silverstein, Cong, and Li, 2006; Lowenstein, Katz, and Gur-Yaish, 2007; Yeung and Fung, 2007). In addition, the findings of positive association between life satisfaction of older people and intergenerational relations in the present study also provide support to some theories developed by social gerontologist in mainland China, such as the theory of filial culture (孝文化理論) (王滌、周少雄, 2003; 張文範, 2004), the theory of responsibility internalization (責任內化認) (張新梅, 1999), and the theory of values of filial piety (血親價值論) (姚遠, 2000, 2001, 2002).

It was stated that family support is generally regarded as the most important support for older people in agricultural societies where there is a lack of social welfare services for the elderly (李翊駿, 1999). In rural China where there is a lack of social welfare for the elderly (Leung, 2006a, 2003; Xu, 2001), family support is likely to be the most important support for the elderly. The importance of intergenerational relations to both rural and urban older people in China is empirically supported by the present study. Based on the findings on the relationship of intergenerational relations and life satisfaction of older people in the present study, it is evident that intergenerational relations contribute positively to life satisfaction among older people. Actually, the findings are understandable given the important role of

family members as helpers and members of social networks, it seems an obvious conclusion that family support and engagement contribute positively to the life satisfaction of older people. However, it should be noted that different aspects of intergenerational relations have different degrees of impacts on life satisfaction among older people. Additionally, the findings show the three variables of family harmony, filial support, and filial discrepancy are intercorrelated. This seems understandable because the more harmonious relationships among children and parents, the more filial support the children are likely to provide for their parents, and hence the more closely the children's support is likely to meet their parents' expectations. However, the interpretation of the research findings will certainly be enhanced by in-depth interviews to ascertain the actual interrelationships among family harmony, filial support, and filial discrepancy.

In addition, it should be pointed out that the present study is conducted in Putian, Fujian, China. Putian is the hometown of the world-renowned Mazu, the goddess of sea. There is a widespread belief of Mazu in Putian. According to the record, Mazu was famous for her filial piety, she used to accompany her father in fishing offshore from the age of 16 (陳鈞, 2008). The belief of Mazu may also affect local people in Putian to practice filial piety and older people's perceptions of their children's filial piety. For the older people who have a strong belief in Mazu, it is likely that they may hold rigid adherence to filial piety. In general, these older people are likely to have a low perception of filial discrepancy unless their children provide more filial support than others' children. The potential impacts of local folk religion on life satisfaction among older people undoubtedly deserve more attention and research.

In summary, the findings suggest that leisure activity participation, social support, and intergeneration relations in interpersonal level of ecological model are all important factors which contribute significantly and positively to life satisfaction among older people in the present study. However, it should be noted that different aspects of social support and intergenerational relation have different degrees of impact on life satisfaction among older people. There is also a need to pay attention to the potential intercorrelations among different aspects of each variables and even among different correlates of life satisfaction among older people in interpersonal level.

The correlates of life satisfaction in cultural level

The macrosystem or cultural level in ecological model reflects the attitudes and ideologies of the culture and is related to the historical and cultural context that translates into societal values and norms (Bronfenbrenner, 1979, 2000). In the present study, the cultural level variables include the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity.

In relation to the variable of the degree of having *mianzi* in social interactions, the finding of bivariate analysis support the hypothesis 3-1 that the degree of having *mianzi* in social interactions is positively associated with life satisfaction among older people. The hypothesis obtains further support from the hierarchical regression analysis (shown Table 5-7 in page 154), which shows that the degree of having *mianzi* in social interactions contributes significantly to explaining the variance in life satisfaction of older people. The findings also highlight the role of Chinese culture in understanding life satisfaction of older people in China. The emergence of the degree of having *mianzi* in social interactions as a

significant predictor of life satisfaction among older people in China expands our understanding of the dynamics influencing older people's satisfaction with life. According to the theoretical model of face and favor in Chinese society by Hwang (1987), *mianzi* and *renqing* (人情) represent some kinds of social resources or capital in interpersonal interactions in Chinese society. The present study adds evidence to support the model of face and favor in Chinese society by Hwang (1987). Theoretically, the findings of the present study also provide evidence to support the assertion that *mianzi* occupies a central role in the life of the typical Chinese (Ho, 1976; Bond et al., 1985; King and Bond, 1985) and the argument that older people's social aging is affected by the interactions they experience and by their ability to influence others through their social interactions (Antonucci and Akiyama, 1991). From a practical standpoint, the findings suggest that respecting or honoring older people by giving their *mianzi* or making them have *mianzi* in social interactions would boost life satisfaction of older people in China. Thus, it is of importance for gerontological social workers in mainland China to understand and pay attention to the importance of *mianzi* during their interactions with older people to foster long-term relationship.

It is also expected that the older people with stronger endorsement of positive Chinese cultural beliefs about adversity would report higher life satisfaction. The findings of both bivariate and multivariate analyses (presented in Table 5-6 in page 150 and Table 5-7 in page 154) demonstrate that the variable of the endorsement of positive Chinese cultural beliefs about adversity is associated significantly with life satisfaction of older people. The research hypothesis 3-3 about positive association between these two variables is thus supported. Taken as a whole, it was found that older people's life satisfaction is strongly

related to their endorsement of Chinese cultural belief about adversity. Theoretically, the findings of the present study provide evidence to support the assertions that culture plays an important role in defining the problem and behavioral option in the stress and coping processes (Slavin et al., 1991). At the same time, these findings are consistent with the research findings suggesting that there is a positive association between positive Chinese cultural beliefs about adversity and psychological well-beings of adolescences with economic disadvantage in Hong Kong (e.g., Shek, et al., 2003, Shek, 2005). Practically, the findings suggest that helping older people develop a positive beliefs and thinking of adversity is likely to enhance their life satisfaction. It was indicated that the definitions of stress, behavioral options, and copying behavior are shaped by cultural factors (Slavin et al., 2001). Chinese cultural belief about adversity may constitute important copying resources for older people who experience various losses and strains, such as declining health status and poverty. When working with older Chinese people, perhaps a rating scale can be adopted to assess older people's Chinese cultural beliefs about adversity and empower or cultivate older people to develop a more positive beliefs about adversity.

In summary, the two factors in cultural level in ecological model are associated significantly and positively with life satisfaction. The findings demonstrate that culture *per se*, the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity as its proxies, has impacts on life satisfaction of older people in China. The findings highlight the role of culture in understanding life satisfaction among older people in China. Given that the relationships between cultural factors and life satisfaction among older people in China are rarely examined empirically, the present study can be regarded as a pioneering research in this field. It was argued that

face, fate, and favor as three sisters who exert a subtle but penetrating power on Chinese people's life (Lin, 1939). The variable of Chinese cultural belief about adversity may be regarded as a kind of perception of fate. As an illustration, the item two and item seven of the scale asks older people to indicate their agreement on "whether a life is good or bad depends on fate" and "man is the master of his own fate" respectively. Thus, the present study provides evidence to support the statement of Lin (1939) that the face and fate are important factors which affects people's life in China. Future studies may include all the factors of face, fate, and favor to examine their impacts on life satisfaction among older people in China.

The different patterns of correlates between the respondents with different *hukous*

The present study also aims to examine the patterns of correlates of life satisfaction among two groups of older people with different *hukous*. Based on the results of correlation analyses as presented in Table 5-10 in page 165 and Table 5-11 in page 166, all the independent variables are correlated significantly with the dependent variable of life satisfaction for two groups of older people with different *hukous*. However, when the relationships between independent variables and dependent variable are compared between two groups of older people with different *hukous* (shown in Table 5-12 in page 168), it is found that the relationships between the independent variables of education, self-perceived health status, Lubben Social Network Scale, family harmony, and the endorsement of positive Chinese cultural beliefs about adversity and the dependent variable of life satisfaction are different significantly for two groups of older people with different *hukous*. The findings indicate that the variables of education, self-perceived health status, family

harmony, and the endorsement of positive Chinese cultural beliefs about adversity are more significantly correlated with life satisfaction among older people with a non-agricultural *hukou*. The variable of social network is more significantly correlated with life satisfaction among older people with an agricultural *hukou*. When Bonferroni correction is used, it is still found that the relationships between the endorsement of positive Chinese cultural beliefs about adversity and life satisfaction are different significantly for two groups of older people with different *hukous*. The findings support the research hypothesis 4-1 that the patterns of correlates of life satisfaction would be different between the two groups of older people with different *hukous*.

The results of hierarchical regression analysis for the respondents with an agricultural *hukou* (presented in Table 5-13 in page 171) demonstrate that the variables of annual income, financial strain, and marital status are significant predictors of life satisfaction in the first step. In the second step when the variables in the interpersonal level are entered into regression equation, the variables of annual income, activity participation, satisfaction with social support, filial support, and filial discrepancy are found to be significant predictors. In the third step when the variables in cultural level are entered into regression equation, the variables of annual income, leisure activity participation, satisfaction with social support, filial support, filial discrepancy, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity are found to be significant predictors. Moreover, the results of hierarchical regression analysis indicate that overall model comprising individual, interpersonal, and cultural levels explain 65.4 percent (63.3 percent adjusted) of total variance in life satisfaction of older people

with an agricultural *hukou*. The value of the F statistic is equal to 31.10 with a probability level of .000, which indicates evidence of the utility of the model.

The results of hierarchical regression analysis for the respondents with a non-agricultural *hukou* (presented in Table 5-14 in page 178) indicate that the variables of years of formal education, financial strain, and self-perceived health are significant predictors of life satisfaction in the first step. In the second step when the variables in the interpersonal level are entered into regression equation, the variables of years of formal education, financial strain, self-perceived health, satisfaction with social support, and filial support are found to be significant predictors. In the third step when the variables in cultural level are entered into regression equation, the variables of financial strain, self-perceived health, filial support, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity are found to be significant predictors. Moreover, the results of hierarchical regression analysis indicate that overall model comprising individual, interpersonal, and cultural levels explain 72.8 percent (71.3 percent adjusted) of total variance in life satisfaction of older people with an agricultural *hukou*. The value of the F statistic is equal to 48.58 with a probability level of .000, which indicates evidence of the utility of the model.

Based on the findings of two hierarchical regression analyses, only the variable of financial strain is found to contribute significantly to explaining life satisfaction among two groups of older people with different *hukous* in the first step of both hierarchical regression analyses. Two variables of satisfaction with social support and filial support are found to contribute significantly to explaining life satisfaction among two groups of older people with different *hukous* in the second step of both analyses. Three variables of filial support,

the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity are found to contribute significantly to explaining life satisfaction among two groups of older people with different *hukous* in the third step of both analyses. Moreover, the results of z test for the differences of regression coefficients between two groups of older people with different *hukous* (shown in Table 5-15 in page 183) demonstrate that only the regression coefficients regarding the relationship between the endorsement of positive Chinese cultural beliefs about adversity and life satisfaction are significantly different. These findings provide further evidence to support the research hypothesis 4-1 in the present study. The findings also imply that older people with different *hukous* in mainland China are likely to derive life satisfaction from different sources.

In addition, the findings of two hierarchical regression analyses also indicate that annual income is found to be a significant predictor of life satisfaction for the respondents with an agricultural *hukou*. Financial strain is a significant predictor of life satisfaction for the respondents with a non-agricultural *hukou*. Even though the findings demonstrate the importance of finance in older people's life, the findings suggest that different aspects of finance have different impacts on life satisfaction of older people with different *hukous*. Furthermore, the self-perceived health status is found to be a significant predictor only for older people with a non-agricultural *hukou*. However, it is not found to be a significant predictor of life satisfaction for the respondents with an agricultural *hukou*.

There are some potential reasons for the different patterns of correlates of life satisfaction for two groups of older people with different *hukous*. First, it is possible that older people with a non-agricultural *hukou* generally live in rural areas where filial piety is likely to be more strongly emphasized, people tend to know each other, and people are probably more

concerned about harmonious relationships with neighbors, friends, and others. It is also likely that there is not a state subsidized pension system for the majority of older people with an agricultural *hukou* in mainland China. For instance, it was found that 78.0% of urban elderly have pension, but only 4.8% rural elderly have pension (中國老齡研究中心, 2008). Thus, it is likely that they have to rely on their family, relatives, and/or friends financially. As a result, they may need to get along well with family members, relatives, and/or friends in order to obtain financial support in case of need, such as the cost of medical services. Therefore, they may look at the satisfaction with social support and filial discrepancy as barometers of satisfaction with life. The results of hierarchical analyses show that the variables of satisfaction with social support and filial discrepancy are significant predictors of life satisfaction for older people with an agricultural *hukou*. On the other hand, these two variables are not significant predictors of life satisfaction for older people with a non-agricultural *hukou*.

Second, it was argued that older people with an agricultural *hukou* are usually denied from many of the basic privileges enjoyed by urban residents such as housing, health insurance, and community cultural activities (Zhang, 2002; Wu and Treiman, 2003, 2007; Liu, 2005; Wang, 2005; Au et al., 2007; Whalley and Zhang, 2007). The present study also reveals that older people with a non-agricultural *hukou* have a significant higher level of leisure activity participation than their counterparts with an agricultural *hukou* (shown in Table 5-9 in page 162). Therefore, the significance of leisure activity participation for the two groups of older people with different *hukous* may be different. Older people with an agricultural *hukou* are likely to perceive leisure activity participation more significant or important to their life. As a result, activity participation is found to be a significant

predictor for life satisfaction among older people with an agricultural *hukou*, but not for life satisfaction among older people with a non-agricultural *hukou*. However, it should be pointed out that the reliability of the scale of leisure activity participation is rather low for the respondents with an agricultural *hukou*, with a Cronbach's alpha equal to 0.48. Thus, caution should also be taken to explain the outcomes related to this scale. Future studies with reliable scales are warranted to examine the relationship between life satisfaction among older people with an agricultural *hukou* and their life satisfaction.

Third, the different living styles between two groups of older people with different *hukous* may result in different patterns of correlates of life satisfaction between them. Older people with an agricultural *hukou* generally live in rural areas and took agricultural work in their young and middle age. Their life experiences, achievements, and expectations are likely to be different from those of older people with a non-agricultural *hukou*, because older people with a non-agricultural *hukou* generally live in urban or town areas and took non-agricultural work in their young and middle age. It is also possible that two groups of older people have different concerns, worries, and so on. They may develop different coping strategies to adjust to aging. George (1979) stated that life satisfaction is "an assessment of the overall condition of existence as derived from a comparison of one's aspiration to one's actual achievements" (p. 210). Bell (1976) also argued that life satisfaction is "the subjective experience of pleasure with one's self, along with others, in relation to past or present social circumstances" (p. 154). Therefore, it is likely that two groups of older people with different *hukous* may have different assessments of their life and different correlates of life satisfaction. Actually, the results shown in Table 5-9 in page

162 also demonstrate that two groups of older people have different levels of life satisfaction.

Fourth, the different socio-demographic backgrounds between two groups of older participants with different *hukous* may also result in different patterns of correlates of life satisfaction between them. For instance, years of formal education, financial strain, and annual income are different significantly between two groups of older people (shown in Table 5-9 in page 162). While it is generally found that years of formal education and finance are correlated significantly and positively with life satisfaction among older people (e.g., Pinquart and Sorensen, 2000; Bowling and Windsor, 2001; Subasi and Hayran, 2004; Borg et al., 2006; Li et al., 2007). Therefore, it is possible that part of the differences about the patterns of correlates of life satisfaction for two groups of older people with different *hukous* may be due to their different socio-demographic backgrounds.

Even though the patterns of correlates of life satisfaction are different for two groups of older people with different *hukous*, the variable of filial support and both cultural variables of the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity are found to be significant predictors of life satisfaction for two groups of older people with different *hukous*. The findings highlight the importance of filial support to older people's life. In mainland China, both pension system and formal social services for older people are inadequate, about 71.4 percent of older people have to depend on their children as their principal source of financial support (Leung, 2006a). Therefore, it is not surprising that filial support is important for older people's life in China. Besides providing financial support for older people, the family may also be the principal source of emotional support for older people. However, some scholars

(e.g., Xu, 2001, 黃幹, 2005; Xiang, 2005) argued that children's capacity to support their old parents tends to weaken in the process of industrialization, especially for the people in rural areas. To enhance life satisfaction of older people in China, it seems important to promote children's filial support to their older parents. Certainly, it is also important and imperative to develop formal social services for the elderly in China. Moreover, the findings highlight the importance of the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity to life satisfaction of older people. It was suggested that changes associated with aging are socially and culturally determined (Teague and MacNeil, 1992). Luborsky and McMullen (1999) also argued that old age is a cultural construct defined by factors beyond abstract numbers of chronological age. Additionally, the findings of the present study highlight the role of culture in older people's life. Because there have been to date few empirical research examining the role of culture in the life satisfaction of older people in China, the present findings may be regarded as pioneering in nature. It is necessary that future empirical studies should be conducted to examine these findings.

Theoretical and practical implications of the study

The present study contributes to our understanding of the factors correlated significantly with life satisfaction among older people in mainland China. The findings also have implications for social work practice with the elderly in mainland China. In this section, the linkages between the empirical findings of the present study and previous findings on the correlates of life satisfaction are further summarized and examined. The theoretical

implications of the present study and the implications of the present study for social work practice are discussed.

Theoretical significance and implications of the study

Theory-building is an exciting and important area of research. In social gerontology, Bengtson, Burgess, and Parrott (1997) suggested that more emphasis on theory development is vital and necessary if knowledge development is to be cumulative, systematic, and incremental. Theory is also important for social work practice, because it is one of the guiding principles which direct or suggest social work practitioners to choose among various lines of inquiry or to favor one intervention or treatment over another. Building a comprehensive theory of the factors that exert impacts on life satisfaction among older people can contribute not only to knowledge development in social gerontology, but also to social work practice with the elderly. The present research generates some knowledge and new insights to the studies on the factors associated with life satisfaction of older people.

In general, there are only a few empirical studies on correlates of life satisfaction among older people in mainland China (e.g., Zhang and Yu, 1998; 熊躍根, 1999; Pei and Pillai, 1999; 賀寨平, 2002; Li et al., 2007; Zhang and Liu, 2007). The findings of the present study enrich our knowledge on the existing scope of correlates of life satisfaction among older people in China. The present research can also be regarded as a major addition to the empirical evidence on the relationships between the variable of life satisfaction among older people and the variables of *hukou*, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity. This is an

important step as far as the accumulation of research findings is concerned. The present research has the following characteristics which contribute to the scholarship in studying the correlates of life satisfaction among older people in mainland China.

First, the impact of *hukou* on life satisfaction among older people in mainland China has been rarely examined. The present study proposes and examines the relationship between *hukou* and life satisfaction among older people in China. *Hukou* is the legal basis for people's personal identification and it affects people's life in many aspects in mainland China. 胡鞍鋼 et al. (1995) argued that the three main disparities in contemporary mainland China, i.e., the disparities between the peasants and the industrial workers, between the urban and rural areas, and among the regions are mainly the results of the *hukou* system. In terms of social welfare services, the Chinese government mainly concerns the social welfare of urban dwellers and workers in public sector (Hebel 2004). Social welfare benefits like government subsidized housing, medical care, retirement benefits, community cultural activities, and public employment opportunities in all but menial jobs were mainly available to those with local urban *hukou* (Zhang 2002; Wu and Treiman 2003; Liu 2005). The findings of bivariate analysis in the present study indicate that *hukou* is associated significantly with life satisfaction among older people in mainland China. Older people with a non-agricultural *hukou* have higher life satisfaction than their counterparts with an agricultural *hukou*. Moreover, the findings indicate that older people with an agricultural *hukou* report higher degree of financial strain and less annual income. They also report lower degree of leisure activity participation than their counterparts with a non-agricultural *hukou*. These findings are important evidence upon which social work

practice can be conducted to relieve the disparity between urban and rural areas due to the *hukou* system.

The present study also proposes that the relationship between life satisfaction and the potential correlates are different between two groups of older people with different *hukous*. Results of this study demonstrate the importance and usefulness of analyzing the patterns of correlates for two groups of older people respectively. Although correlation analyses indicate that the independent variables that the researcher intends to examine in the present study are all correlated significantly with dependent variable of life satisfaction, the relative importance of education, self-perceived health status, Lubben Social Network, family harmony, and Chinese cultural beliefs about adversity to life satisfaction are rather different between two groups of older people with different *hukous*. It is also found that the correlates of life satisfaction are different between two groups of older people with different *hukous*. Based on the results of regression analyses, the variables of annual income, activity participation, satisfaction with social support, filial support, filial discrepancy, having *mianzi* in social interactions, and Chinese cultural beliefs about adversity are found to be significant predictors for older respondents with an agricultural *hukou*. The variables of financial strain, self-perceived health status, filial support, having *mianzi* in social interactions, and Chinese cultural beliefs about adversity are found to be significant predictors for older people with a non-agricultural *hukou*.

According to the findings of the present study, *hukou* system exerts impacts on life satisfaction of older people in mainland China. Rural older people who are discriminated under *hukou* system have lower life satisfaction than urban older people. The two groups of older people with different *hukous* have different patterns of correlates of life satisfaction.

The present research provides pioneer findings on the impacts of *hukou* on life satisfaction among older people in China. However, it is recommended that further empirical studies with different research methods in different places should be conducted to examine the relationship between *hukou* and life satisfaction among older people in mainland China.

Second, the impacts of Chinese culture on life satisfaction among Chinese older people have also been seldom examined. To the best of the researcher's knowledge, there is not any empirical study which examines the relationship between older people's life satisfaction and their self-reported degree of having *mianzi* in social interactions. There is also not any research on the relationship between older people's life satisfaction and their endorsement of positive Chinese cultural belief about adversity. The present study proposes and examines the relationship between the degree of having *mianzi* in social interactions and life satisfaction among older people. *Mianzi* is a pervasive issue affecting many aspects of Chinese behaviors. It is related to the position and status of a person with others. It was argued that *mianzi* occupies a central role in the life of the typical Chinese because he or she lives in a relation-based society, where the focus is not on the individual, but on the relationship between individuals (King and Bond, 1985). It was also suggested that the practice of *mianzi* is related to the practice of *ren* (仁), *yi* (義), and *li* (禮) (沈毅, 2007). In short, *mianzi* is one of the important components of Chinese culture. The present study asks older respondents to report their degree of having *mianzi* in social interactions with neighbors, friends, and relative. The results of the bivariate analysis in present study demonstrate that older people's perception of having *mianzi* in social interactions is correlated significantly with life satisfaction of older people. The results of regression analysis further reveal that older people's perception of having *mianzi* in social interactions

is a significant predictor of life satisfaction among older people. These findings suggest the importance of the degree of having *mianzi* in social interactions for life satisfaction of older people in China. The findings highlight the importance of culture in older people's life and also contribute to the knowledge development of correlates of life satisfaction among older people in mainland China. Certainly, the relationships between older people's life satisfaction and other factors which are related to the concepts of *mianzi* such as giving *mianzi* and leaving *mianzi* (see Hu, 1944) also need to be examined to develop a better understanding about the impacts of *mianzi* on older people's life in China.

Furthermore, based on the research of Shek et al. (2002) and Shek (2005), the present study proposes and examines the relationship between the endorsement of positive Chinese cultural beliefs about adversity and life satisfaction among older people in China. The results of the bivariate analysis in present study demonstrate that older people's endorsement of positive Chinese cultural beliefs about adversity is correlated significantly and positively with their life satisfaction. At the same time, the results of regression analysis further reveal that older people's endorsement of positive Chinese cultural beliefs about adversity is a significant predictor of life satisfaction among older people. The present study is the first one to examine the relationship between the endorsement of positive Chinese cultural beliefs about adversity and life satisfaction among older people. The findings suggest the importance of the endorsement of positive Chinese cultural beliefs about adversity for life satisfaction of older people in China. The findings also highlight the importance of culture in older people's life and contribute to the knowledge development and advancement of correlates of life satisfaction among older people in China. At the same time, the findings also highlight the importance of older people's belief system in

their life satisfaction. It was indicated that beliefs about control and efficacy are related to psychological adjustment in Chinese people (Leung, 1996). The present study is a pioneering study to support the there is relationship between cultural beliefs and life satisfaction among older people in China. Further studies many examine the relationships between life satisfaction among older people and other aspects of cultural beliefs.

Taken together, the present study provides pioneering findings regarding the relationships between life satisfaction of older people and the cultural variables of the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity. Both two cultural variables examined in the present study are found to be significant predictors of life satisfaction among older people. Given that there are few studies on Chinese culture and life satisfaction among Chinese older people, more efforts are needed to examine the impacts of Chinese culture on life satisfaction among older Chinese people. Meanwhile, cross-national studies may be conducted to explore whether Chinese cultural variables also exert impacts on life satisfaction among older people with different cultural backgrounds in other countries.

Third, the present study confirms the importance of social support, especially family support to the life satisfaction among older people. Bivariate analyses indicate that the two variables related to social support (social network and satisfaction with social support) and three variables related to intergenerational relations (family harmony, filial support, and filial discrepancy) are all correlated significantly and positively with life satisfaction among older people. The results of regression analyses also reveal that the variables of satisfaction with social support, filial harmony, and filial support are associated significantly and positively with life satisfaction among older people. The findings show the importance of

social support, particularly the support from family members in older people's life and also contribute to the knowledge development of correlates of life satisfaction among older people in China. Family members, friends, and neighbors are likely to be particularly relevant to social, economic, and emotional support for older people in mainland China, because pension system and formal social services for older people are inadequate in mainland China (Leung, 2001, 2006a, 2006b; Hebel, 2004; Aspalter, 2007; Lee and Xiao, 1998). Given the importance of social support to older people, more studies about the relationships between social support and subjective well-being of older people is necessary. Although the present study yields some evidence about positive relationships between life satisfaction of older people and their social support, there is a need to examine how to make social support benefit older people to a maximum. For example, Lee (1985) argued that for social support to yield maximum life satisfaction benefit, the ingredient of reciprocity which involves mutual sharing or giving should be included. Research is need to examined Lee's arguments in China.

Fourth, the present study adopts the ecological perspective to study the correlates of life satisfaction among older people. It enables us to identify the multiple influences in different levels on life satisfaction among older people in order to fully understand the complexity of correlates of life satisfaction among older people. The findings of the present study shows that older people's life satisfaction is affected by multidimensional factors, which suggests that we should develop some ways to integrate the various factors systematically. It was frequently argued that gerontology has been a field being rich with data but starved for theoretical constructs to inform its research (Bengtson, Parott, and Burgess, 1996; Marshall, 1999; A. Walker, 1999; Biggs, Lowensein, and Hendricks, 2003;

Longino, 2005). Ecological perspective is capable of describing dynamics associated with older people's life. It goes beyond biological, psychological, and sociological perspectives and has the potential to embrace these perspectives. Ecological perspective provides a potential way to integrate knowledge development in social gerontology. It can be viewed as an informed way to organize and conduct future research on the factors associated with life satisfaction among older people. The ecological model proposed in the present study can serve as an illustration.

Based on the human ecology proposed by Bronfenbrenner (1979, 2000), the present study identifies and examines three levels of potential correlates of life satisfaction among older people in China, i.e., individual, interpersonal, and cultural levels. It is found that all three levels of correlates contribute to life satisfaction among older people in China. In fact, to the best of the researcher's knowledge, this is the first study which adopts an ecological model to investigate the correlates of life satisfaction among older people in mainland China. Although, the present study is a fruitful step in examining the different levels of correlates of life satisfaction among older people, it is obvious that the potentials of the ecological perspective are not yet fully realized in the study of correlates of life satisfaction among older people. Further empirical studies and theoretical frameworks about the correlates of life satisfaction among older people based on ecological perspective are undoubtedly warranted. The ecological perspective helps to identify the sources of influences on older people's life satisfaction. It is also clear that only with the identification of sources of influences, older people's life satisfaction may be modified. Moreover, the ecological perspective can also be applied in the studies of other social phenomena such as elder abuse and so on in social gerontology. However, no matter what social phenomenon

is study, the proposed ecological models should be constructed with carefully examined domain-specific theories.

In summary, the present study enriches our understanding about the correlates of life satisfaction among older people in China. It adds evidence that the factors such as health and intergenerational relations are important for older people's life satisfaction. It also provides pioneering findings about the relationships between life satisfaction of older people and the variables of *hukou*, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity. It was also found the three variables are all correlated significantly with life satisfaction among older people in mainland China. Furthermore, the present study demonstrates that ecological model can serve as a useful theoretical framework to investigate the factors associated with life satisfaction of older people.

Implications for social work practice

The findings of the present study, especially those pioneering findings, are helpful for social workers and other frontline professionals working with older people to develop effective ways to promote life satisfaction of older people. The findings have the following potential practical implications for gerontological social workers and other professionals who are committed to promoting the well-being of older people.

First, the findings of the present study demonstrate that the measurement instruments of Activities of Daily Life, abbreviated version of Lubben Social Network Scale (LSNS-6), filial support, satisfaction with social support, filial discrepancy, the endorsement of positive Chinese cultural beliefs about adversity, Satisfaction with Life Scale, and the

degree of having *mianzi* in social interactions have high reliability. These scales are relatively short and it would not take older respondents much time to answer the questions in these scales. It seems that gerontological social work practitioners in mainland China can adopt these scales to assess older people's conditions and make judgments in their social work practice. Certainly, further replication and validation of these measurement instruments are also necessary.

Second, the finding of significant relationships between *hukou* and life satisfaction suggests that social workers in mainland China need to be sensitive to social inequality injustice and the disparity between urban and rural areas in mainland China. It was argued that social workers strive to create order and enhance opportunities for people in an increasingly complex world; they also promote a responsive and just society (Miley, O'Melia, and DuBois, 2004). The *hukou* system has created rigid rural-urban divide and inequalities as well as discrimination and injustice in China (Wu and Treiman 2003; Luard, 2005; Wang, 2005; Au et al., 2007). The findings of the present study show that older people with a non-agricultural *hukou* report higher life satisfaction, less financial strain, higher annual income, more activity participation, higher degree of having *mianzi* in social interactions, and so on than their counterparts with an agricultural *hukou*. These findings imply that social workers in mainland China should work together with political activists and others and strive to advocate for abolishing the *hukou* system. This will contribute to establishing an equal and just society for rural older people and other rural people as well in mainland China. A few social workers in Hong Kong became politicians and exerted their influence through political power (Mok, 1988; 李華明, 1993). Perhaps social workers

in mainland China can also attempt to become politicians and to promote social justice and equality through direct political power.

Moreover, the findings of the present study suggest that under present situation of *hukou* system in mainland China, social work practitioners may need to take different ways to promote life satisfaction with different *hukous*. As an illustration, the variables of annual income, activity participation, satisfaction with social support, filial support, filial discrepancy, the degree of having *mianzi* in social interactions, and the endorsement of positive Chinese cultural beliefs about adversity are found to be significant predictors for older respondents with an agricultural *hukou*. The variables of financial strain, self-perceived health status, filial support, the degree of having *mianzi* in social interactions, and the endorsement of Chinese cultural beliefs about adversity are found to be significant predictors for older people with a non-agricultural *hukou*. Based on the above findings, promoting leisure activity participation is a more effective way to enhance life satisfaction among older people with an agricultural *hukou*. Certainly, promoting filial support, giving older people *mianzi* in social interactions, and helping older people develop positive attitudes towards adversity would contribute to life satisfaction for both groups of older people with different *hukous*.

Third, according to the white paper on *The development of China's undertakings for the aged* issued by the State Council in December 2006 and *Law of the People's Republic of China on the Protection of Rights and Interests of the Aged* enacted in August 1996, China's goals for the development of undertakings for the aged are described as follows: "All elderly people are to be provided for and enjoy proper medical care. They are to be given opportunities to pass on their experience as well as to learn new things. They should

be given the opportunity to do what they can for the society, while enjoying their later years” (<http://www.china.org.cn/english/aged/192050.htm>). In short, the government policies that discuss aging and old age in mainland China mainly focuses on the issues of activity participation, caregiving, finances, and health. The findings of the present study confirm that activity participation, caregiving, finances, and health are important to older people’s life satisfaction. Moreover, the present study also reveals that cultural factors such as the degree of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity exert impacts on life satisfaction among older people. Therefore, besides leisure activity participation, caregiving, finances, and health which are related to older people’s life satisfaction, social workers in mainland China may also need to be concerned about or pay attention to older people’s cultural beliefs and values which also appear to be related to their life satisfaction. McLeod and Machin (1998) argued that it is important to emphasize the cultural dimension of counseling and respecting the clients’ own cultural experiences, lifestyles, and language. Based on the findings of the present study, cognitive therapists and social workers may make use of cultural beliefs and thinking of older clients to promote the well-being of older people. For example, social workers may organize some programs to help older people improve social interaction skills, so that they can develop better social relations with other people and thus they are likely to obtain higher degree of having *mianzi* in their social interactions. Furthermore, social workers can also collaborate with cognitive therapists to help older people develop a positive perception of Chinese cultural belief about adversity, which is also likely to promote life satisfaction among older people. In addition, it was stated that the basic ideas of Chinese folk religions “reflect and incorporate beliefs and values that pervade Chinese

culture as a whole”(Gunde, 2002, p. 51). Chinese folk religions are likely to exert impacts on Chinese people’s daily life and cultural beliefs (Kaneko, 1990; Gunde, 2002; Zhang, 2008). Some popular deities in Chinese folk religions such as the Eight Immortals (八仙), Mazu (媽祖), Tu Di Gong (土地公), Fu Shen (福神), Shou Xing (壽星), Baosheng Dadi (保生大帝), Cai Shen (財神), and so on are believed to provide people protection from adversities and summon good fortune. The beliefs in Chinese folk religions may be helpful for some people to fight and overcome adversities that they encounter in their later life. The beliefs in deities, along with rituals such as praying, may lead to positive expectations such as optimism and hope (Ai, Peterson, Tice, Bolling, and Koenig, 2004). These positive expectations are likely to help some older people especially those in bad health to cope effectively with traumatic life events. Social workers may try to use Chinese folk religions to help Chinese older people develop a positive perception of Chinese cultural belief about adversity. However, due to the lack of relevant empirical research, more studies on the relations between Chinese folk religions and older people’s cultural beliefs are warranted.

In short, the findings in the present study provide evidence to indicate the importance of cultural sensitivity for social work practitioners and to suggest that social workers should make effort to be aware of the potential and actual cultural factors which affect their clients’ life.

Fourth, the findings of the present study demonstrate the importance of intergenerational relations to life satisfaction of older people. It is found that all three variables of family harmony, filial support, and filial discrepancy are significant predictors of life satisfaction among older people when two cultural variables are not entered into regression equation (shown in Table 5-7 in page 154). Moreover, family harmony and filial support are still

significant predictors to life satisfaction of older people after two cultural variables are entered into regression equation (shown in Table 5-7 in page 154). The findings indicate that policies and programs which encourage and support intergenerational activities are clearly needed to build harmonious relations between the old and the young in mainland China. It was argued that the economic and social system changes in mainland China since the foundation of People's Republic of China have removed the economic foundation (private ownership of property such as land) supporting the status of the aged in the family (Xu, 2005). Xu also pointed out that in rural areas, old age has become linked with poverty and with many social and economic disadvantages. Family support to them is often fraught with uncertainties and largely depends on children's willingness and capacities. Furthermore, the social changes in mainland China such as modernization and urbanization may be unfavorable to intergenerational cohesion and maintenance of filial practice. It was indicated that socioeconomic development may erode the traditional practice of respect for the elderly among Chinese youths (Zhang and Montgomery, 2003; Zhang, 2004). Research in Hong Kong (Ho, Hong, and Chiu, 1989) and Taiwan (莊耀嘉 and 楊國樞, 1991) also reported the declining adherence to filial beliefs and commitments among young people. These imply that gerontological social workers in mainland China should be concerned about social and economic changes and find effective ways to promote filial support to older people and family harmony, because of the importance of filial support and family harmony to life satisfaction among older people. For instance, some programs may be organized to provide adult children information on aging and communication skills in order to make adult children aware of their aging parents' needs and to improve the quality of intergenerational relations. Some programs may also be set in schools to facilitate

intergenerational interactions. At the same time, social work practitioners may also help older people to enhance their relationship with their children. Some programs such as educational programs for older persons described by Strom and Strom (2000) may help older people to understand the knowledge and behaviors that younger family members would like them to acquire and thus help them to achieve family harmony. Furthermore, in his study of parent-adolescent conflicts in Hong Kong, Andrew (2002) suggested that social workers may make use of empathy to assist parents to attend more to the emotional needs of their children and thus enhance parent-adolescent relationship. This suggestion may also be applicable to the relationship between older people and their children.

Fifth, the findings of the present study indicate that male older people have higher life satisfaction. The findings also reveal that the female are more likely to be widowed, have less years of formal education, and report higher degree of financial strain than the male. These findings suggest that gerontological social workers in mainland China may need to pay special attention to support and empower female older people. Gerontological social workers in mainland China may need to concern about gender issues in informing social work theory and practice. Female specific services and programs may be developed to provide support and empower female older people and to improve their well-being. For example, in tradition Chinese culture, there is such kind of sayings as "Men are in charge of external matters and women look after the home" (男主內，女主外) and "A woman's virtue lies in having no talent" (女子無才便是德). It is clear that social work practitioners in China should pay attention to such aspects of culture which are likely to exert negative impacts on sexual equality. Feminist social work theory and practice have been rarely proposed and developed in mainland China. Perhaps efforts should also be made to

examine whether feminist social work theory and practice should be advocated in mainland China to benefit older females and other females as well.

Moreover, it was indicated that the widowed individuals experienced greater risks of health problems and economic hardship (Smith, Zick, and Duncan, 1991). Regarding older widows' adjustment to widowhood, it was suggested that the communities should improve their community care, the government should improve pension system, support and encourage more research ; and so on (林娟芬, 2007). Besides these suggestions, probably gerontological social workers in mainland China can help organize widowed female older people to develop self-help groups, so that they may be able to provide emotional support one another and be effective in enhancing adjustment to widowhood. It was found that in urban China in 2000, 7.7 percent of the male elderly aged 65 lived alone, for the female elderly aged 65 and over, 12.4 percent lived alone (曾毅 and 王正聯, 2004). In rural areas, it was also pointed out that young people went to work in urban areas and many older people were left behind (Xiang, 2005). Self-help groups may benefit the older widowed, especially those who live alone, because they may be able to take care of each other. Furthermore, promoting the concept of children's living with older people also seems a useful way to benefit the well-being of older people, especially for those who are widowed and live alone. In addition, although remarriage of the older widowed is not a social custom in traditional Chinese societies, research is needed to examine whether older widowed in China can accept the remarriage and whether it is possible to promote remarriage among the older widowed to enhance their life satisfaction. Vinick (1978) suggested that remarriage could be seen as a viable alternative lifestyle in old age for the

widowed. Empirical studies are warranted to see whether Vinick's suggestion is useful in mainland China.

Sixth, according to ecological perspective, life satisfaction of older people requires a continued investment in one's personal development, in one's relationships with other people, and in coping with multiple social losses, in adapting to diverse and dynamic nature of aging experiences, and in maintaining active in daily life. The findings of the present study provide support to the suggestions of ecological perspective. It is found that the variables in all three level contribute to life satisfaction among older people. Based on the findings of the present study, the ecological model can be used as a guiding theory to promote life satisfaction of older people in social work practice. Gerontological social workers in mainland China may promote life satisfaction of older people at diverse levels of ecological model. For example, at individual system or level, gerontological social workers can find ways to attenuate the negative effects of financial strain or the decrease in functional health on life satisfaction among older people. The life management strategies, i.e., elective selection, optimization, and compensation suggested by Baltes and Baltes (1990), Baltes, (1997), and Chou and Chi (2002) may be one effective way. At interpersonal level, gerontological social workers can play an important role in guiding older people to engage in various activities, to broaden social network, and to enhance relationship harmony with family members. Assessments can also be directed at understanding how to best augment children's ability to provide filial support to their older parents. In addition, various groups (e.g., volunteer organizations, interest organizations, and so on) can be developed to promote older people's engagement in activities and broaden their social network. At the same time, social workers can collaborate with

non-government organizations to provide social and recreation activities for older people. At cultural level, gerontological social workers can contribute to life satisfaction of older people by changing their beliefs and thinking. For example, social workers can attempt to help older people to endorse positive Chinese cultural beliefs about adversity. In short, an ecological model on correlates of life satisfaction, the one in the present study as an illustration, has the potential to promote a broader sense of social work practice in enhancing life satisfaction for older people.

Seventh, over the past decade, there has been an increasing recognition that social work practice should be evidence-based to increase its effectiveness, efficiency, and accountability (Rosen and Proctor, 2002; Gambrill, 2003; Gibbs, 2003; Rosen, 2003; Shek, Lam, and Tsoi, 2004; Gellis and Reid, 2004; Gilgun, 2005; McNeill, 2006). Evidence-based practice (EBP) is “the integration of best research evidence with clinical expertise and patient values” (Sackett et al., 2000, p.1). There are five steps to implement EBP in social work. The five steps are: first, to convert one’s need for information into an answerable question; second, to search the best evidence to answer that question; third, to critically evaluate that evidence; fourth, to integrate the critical evaluation of research evidence with one’s clinical expertise and with patient’s unique biology, values, and circumstances; and fifth, to evaluate one’s own effectiveness and efficiency in undertaking the previous steps and to strive for self-improvement (Gibbs and Gambrill, 2002; Gambrill, 2004; Thyer, 2004). However, based on the literature review by the researcher in the present study, there are only a few empirical studies conducted to examine the correlates of life satisfaction among older people in mainland China. Although the present study also adds a little evidence regarding the correlates of life satisfaction among older people, the

evidence so far is not enough to develop a comprehensive understanding about the correlates of life satisfaction among older people in China. In order to implement EBP to enhance life satisfaction of older people in mainland China, it seems that social work practitioners should also involve in research and contribute to knowledge development while providing services for the elderly. It was argued that “[a]ction research promotes broad participation in the research process and supports action leading to a more satisfying situation for the stakeholders” (Greenwood and Levin 1998: 4). It is a strategy that not only uses scientific methods to solve practical problems but also contributes to general social science theory and knowledge (Reason and Bradbury, 2001). It seems that action research is a useful strategy for gerontological social workers to work with older people in mainland China. It will contribute to develop a solid foundation upon which EBP social work approach is based and implemented to effectively and efficiently enhance life satisfaction of older people.

In summary, based on the findings in the present research, efforts to enhance life satisfaction among older people may be made on individual level, interpersonal level, and cultural level. It is stated that “[t]he social work profession promotes social change, problem solving in human relationships and the empowerment and liberation of people to enhance well-being” (IFSW, 2004). It is evident that to enhance the life satisfaction of older people in mainland China, social workers in mainland China can promote social changes for a democratic, just, and equal society. Meanwhile, social workers can empower older people to improve their relationship harmony with family members, broaden their social network, and promote their leisure activity participation. Furthermore, social work practitioners may change the beliefs and thinking of the elderly to enhance their life

satisfaction. In addition, in order to adopt evidence-based practice approach to work effectively and efficiently to improve older people's life satisfaction, action research may be a useful strategy for gerontological social workers and other professionals to work with older people in mainland China.

Limitations of the present study and implication for further studies

Despite the research findings which may potentially contribute to our understanding of the correlates of life satisfaction among older people in mainland China, there are a number of limitations that need to be acknowledged and addressed in the present study. The implications for further studies are also suggested.

Limitations of the study

The first limitation of the present study is related to the site where the researcher conducted his research as well as the sample of participants. The present study is only conducted in the city of Putian, Fujian, China. The older respondents in the present study are also not randomly selected. The researcher applies a non-probability sampling and chooses the places where the elderly gather to approach older participants. The respondents in the present study are also likely to be relatively healthy people living in the communities in Putian. Therefore, the generalizability of the findings in the present study is limited. Cautions should be taken for the interpretation and possible application of the present research findings. In other words, the research findings in the present study should not be generalized beyond the present sample of older respondents. However, this limitation can

be overcome in future research by drawing larger samples and applying probability sampling in different contexts and surroundings.

Second, the present study is a cross-sectional study and applies t test, ANOVA, correlation and regression analyses. The cross-sectional nature of the study and the use of correlation data and regression analysis prohibit the conclusion about the directionality of the relationships. It does not allow for the determination of cause and effect about life satisfaction among older people. For example, it cannot be definitely established whether satisfaction with social support influences life satisfaction or life satisfaction influences satisfaction with social support in the present study. It is possible that older people who are more satisfied with their lives are also more capable of getting well along with other people and report higher satisfaction with social support. Meanwhile, it is possible that older people who are more satisfied with lives participate in more leisure activity participation. There are also other difficulties to identify the directionality of relationships between the variables of leisure activity participation, satisfaction with social support, filial support, and so on and the variable of life satisfaction among older people. For instance, the perceptions of life satisfaction of older people may change over time. Therefore, future empirical studies with a qualitative design or a longitudinal design with repeated surveys may be able to establish causal relationships in the studies on the factors associated with life satisfaction among older people in mainland China.

Third, the researcher have been able to isolate only fragments of a narrow range of demographic and other characteristics gathered from research participants, which is also one of limitations of the present study. Based on the human ecological model proposed by Bronfenbrenner (1979, 2000), this research only examines a total of 17 independent

variables within three levels of ecological model. It is known that there are many other factors in the three levels examined in the present study as well as the variables in the other levels which may contribute life satisfaction of older people and are not examined in the present study. In the interests of promoting life satisfaction of older people, additional studies, which should include more factors of individual level, interpersonal level, and cultural level of ecological model and even more levels of ecological model, are needed to examine the factors associated with life satisfaction among older people in mainland China.

Fourth, in the process of data analysis, there are a few issues which may affect the statistical validity of some parts of the present data analysis. For example, the Cronbach's alpha of leisure activity participation is equal to 0.48 for the respondents with an agricultural *hukou*. This may exert a little impact on the statistical validity of regression analysis for the respondents with an agricultural *hukou*. However, given that there are a total of fifteen independent variables in the regression equation to examine the correlates of life satisfaction among older people with an agricultural *hukou*, the impact tends to not be serious. In addition, there are a total of fifteen independent variables in the regression equation to examine the correlates of life satisfaction among older people with an agricultural *hukou*; but there are a total of fourteen independent variables in the regression equation to examine the correlates of life satisfaction among older people with a non-agricultural *hukou*. This may also exert a little impact on the statistical validity of the differences of the regression coefficients between two groups of older people with different *hukous*, even though this impact tends to not be serious.

Fifth, this study applies self-reported measures. Given that self-report requires the respondents to answer accurately and relies heavily on recall, this method of assessment

may reflect some patterns of reporting biases or personal bias, such as the biases related to self-representation and social desirability. The studies with other kinds of measures should be conducted to examine the factors which may exert impacts on older people's life satisfaction in mainland China. For example, besides older people's self-reported information, other information based on older people's friends or family members' perceptions may be collected. Multiple sources with multiple perspectives would enable us to develop a better understanding about correlates of life satisfaction among older people. Yet these designs are not feasible given the resources available in this project. In addition, to the best of the researcher's knowledge, the measurement instruments such as Lubben social network scale, satisfaction with life scale and so on had not been previously tested with older people in Putian and other cities in Fujian. This study is also the first to explore the factors associated with life satisfaction among older people in Putian, Fujian, China. Therefore, some of the findings in the present study may be limited to sample-specific or measurement-specific. The findings of the present study will be strengthened if the study is replicated by using other measurements.

Implications for further research

Although the present study has some significant findings, these findings are in need of further elaboration and confirmation. To advance research on the correlates of life satisfaction among older people in mainland China, several implications for further research can be suggested based on the present study. These implications include (a) expanding the multifactoriality of ecological model proposed in the present study, (b) developing and improving measurement instruments, (c) conducting longitudinal,

qualitative, and cross-cultural or cross-national comparative studies on the factors associated with life satisfaction of older people, (d) making use of life satisfaction as independent variables, and (e) conducting collaborative studies on the factors associated with older people's life satisfaction among biological, psychological, social, nursing, and other gerontologists.

First, the ecological model proposed in the present study is a tentative one. More research is clearly needed to further improve and expand the mode of correlates of life satisfaction among older people. The present study only includes some variables in three systems or levels in ecological model. Besides the substantiation and generalization of the findings about significant factors examined in the present study, the identification and analysis of other factors accounting for life satisfaction of older people are clearly necessary. These factors should include measures of other systems or levels that go beyond the present measure based on only three systems or levels.

Moreover, the ecological perspective also stresses the indeterminacy in complex human phenomena and suggests that there are mutual influence among different levels or systems (Germain, 1991, 1994; Germain and Gitterman, 1996, 1995). People are influenced by the environments; at the same time, they also respond to change themselves, their environments, or both themselves and environments. The present study only looks at the variables in the three levels, which exert impacts on life satisfaction among older people. It does not examine the mutual influences among different variables and among different levels. It is undoubtedly further studies should be conducted to examine the mutual influences among different variables and among different levels. Furthermore, empirical research is also needed to look at how older people respond to change themselves, their

environments, or both themselves and environments to adjust to aging and improve their life satisfaction.

Second, future research is needed to develop and improve measurement instruments of factors that exert impacts on life satisfaction of older people in mainland China. For instance, the Cronbach's alpha for the leisure activity participation used in the present study is 0.69 for the whole sample, which indicates relatively poor psychometric properties. Furthermore, the Cronbach's alpha of the scale of leisure activity participation used in the present study is 0.48 for older respondents with an agricultural *hukou*. Future studies should be conducted to develop an emic inventory for measuring leisure activity participation for older people in mainland China. Such kind of research may eventually lead to identifying indigenous constructs of older people's leisure activity participation that are potentially more valuable for understanding and promoting the subjective well-being of older people in mainland China. Such studies would also contribute to the knowledge of human development and behaviors. At the same time, it is important that social work academics should collaborate with the statistician and social work practitioners to ensure that the resulting measurement instruments are psychometrically sound and meaningful in social work practice.

Furthermore, future empirical studies are needed to explore the nature of correlates of life satisfaction among older people in mainland China. For example, the studies on how older people in mainland China define social network, what kinds of things they refer to in relation to social network, what are prioritized by them regarding social network, and so on will enable us to gain a better understanding of social network of older people. Based on these results, a broader view on social network may be developed and the measurement

instrument of social network may be improved. Such an improved measurement instrument of social work may explain more of the variation in life satisfaction of older people in mainland China. Meanwhile, the studies on possible processes leading to the formation of perceptions of health, financial strain, and so on among older people in mainland China will also contribute to developing a better understanding of the correlates of life satisfaction among older people. This kind of studies can provide useful information to develop and improve measurement instruments, such as self-perceived health, financial strain, and filial support of older people in mainland China.

Additionally, it is useful to explore the possible psychological meanings that older people attribute to the factors which exert impacts on their life satisfaction. For example, instead of using a categorization of activity types to examine the relationship between leisure activity participation and life satisfaction of older people, a method of looking at the experiences of activities and their relevance to older people may work better in the future studies on the factors associated with life satisfaction among older people. It is also important that for future studies should adopt different scales to measure the factors which may exert impacts on life satisfaction of older people. For example, both multi-item scales and one item scales of self-rated health as well as objective health should be applied to measure the relationship between health and life satisfaction, so that we may develop a better understanding of significant factors of life satisfaction among older people in mainland China.

Third, longitudinal and qualitative studies are needed to track causal impacts of older people's life satisfaction over time in mainland China. Alwin and Campbell (2001) and Morgan and Kunkel (2001) argued that longitudinal study is one of the most productive

approaches to the study of aging and human development. The analyses of longitudinal data offer the potential to distinguish age differences from age changes and the potential for advancing the science of aging. Through the longitudinal and qualitative studies, we may develop a better understanding of the process and mechanism of aging. Therefore, longitudinal and qualitative research are needed to be conducted in mainland China to explore how the factors such as social network, leisure activity participation, and filial support exert their influence on life satisfaction throughout the life span and especially in later life. Furthermore, the present research points to the complexity of ways in which independent factors such as *hukou*, years of formal education, age, marital status, and endorsement of positive Chinese cultural beliefs about adversity are correlated one another. Future longitudinal and qualitative studies using modeling techniques are critical to explore these complex interrelationships.

In addition, through cross-cultural or cross-national comparative studies, we may find that what we take for granted is just a phenomenon conditioned by a culture or country's circumstances. The application of cross-cultural or cross-national comparative research could benefit researchers because it offers a chance for the researchers to see the limitation or boundaries of one country or culture from the other country or culture's perspective. In the studies on life satisfaction among older people, cross-cultural or cross-national comparative studies are needed to explore and examine how older people in different nations or cultures define aging and life satisfaction, what kinds of things they refer to in relation to aging and life satisfaction, what are prioritized by them regarding aging and life satisfaction, and so on. These results will enhance our understanding of aging and life satisfaction of older people in different nations and cultures. At the same time,

cross-cultural or cross-national comparative studies on the factors associated with life satisfaction among older people are also needed. For example, through cross-cultural or cross-national comparative studies on significant factors of older people's life satisfaction between individualist and collectivist societies or nations, we can explore whether having *mianzi* in social interaction and Chinese cultural beliefs about adversity are the unique factors associated significantly with life satisfaction of older people in Chinese societies.

Fourth, in the studies of life satisfaction among older people in social gerontology, academics are normally concerned about the factors which may contribute to older people's life satisfaction. Life satisfaction of older people is generally treated as a dependent variable and other factors as independent variables. The present study is one of such studies. It seems that empirical studies with life satisfaction as an independent variable should be encouraged and promoted in social gerontology. These studies will provide useful information for such questions: Are older people with higher life satisfaction more likely to participate in leisure activities? Are older people with higher life satisfaction more capable of developing social network? Are older people with higher life satisfaction better liked by others? The answers to these kinds of questions will be helpful for us to identify the directionality of the relationships between life satisfaction of older people and leisure activity participation, intergenerational relations, social support, and so on. It is undoubtedly that such research will help us get better understanding about the correlates of life satisfaction among older people.

Fifth, as already pointed out in the chapter two, aging is a complex process encompassing physiological and pathological phenomena as well as environmental, psychological, and socioeconomic influences (Atchley and Barusch, 2004;

McInnis-Dittrich, 2005; Hooyman and Kiyak, 2005; Whitbourne, 2008). Research on aging is multidisciplinary. The present research also points to the complexity of factors that exert impacts on life satisfaction among older people in mainland China. However, based on the literature review conducted by the researcher in the present study, there is little collaborative research among experts from different fields on the correlates of life satisfaction among older people in mainland China. To develop a comprehensive understanding of factors that exert impacts on life satisfaction among older people in mainland China and in other societies as well, it seems important that more efforts are needed to promote and establish collaborative studies on aging among biological, psychological, social, and other gerontologists.

Summary

This chapter discusses the research findings in the present study. The profile of the respondents, psychometric properties of the measurement instruments, the findings for the research questions and their responding hypotheses, theoretical and practical implications of the present study, and limitations of the present study and implications for the further studies are discussed. The findings of the present study are not only consistent with many research findings of the previous studies, but also add new evidence about the correlates of life satisfaction among older people. Old age is a life-stage characterized by long pasts and short futures. It is also a time of loss: the loss of spouse, friends, jobs, standard of living, health, and so on. According to the findings of the present study, life satisfaction of older people is contingent on their financial status, health status, social network, leisure activity participation, interpersonal relations, cultural values, and so on. The findings underscore

the importance of holistic intervention that address not only individual factors, but also interpersonal and cultural factors to enhance life satisfaction among older people. The findings also indicate that ecological perspective allows us to appreciate various levels of factors that exert impacts on older people's life satisfaction. On the basis of the findings in the present study, life satisfaction of older people should be addressed within a broad range of factors. Furthermore, the significance and implications of the present study are addressed. The limitations of the present study are also pointed out in this chapter. It is suggested that the findings of the present study cannot be generalized due to the non-probability sampling. The cross-sectional nature of the study also does not allow for identifying the directionality of the relationships. With limited understanding of correlates of life satisfaction among older people in mainland China, it is suggested that more studies should be carried out to examine the correlates of life satisfaction among older people in mainland China. It is suggested that future studies with longitudinal and qualitative methods are needed not only to develop and improve measurement instruments, but also to substantiate the present research findings.

Chapter eight: Conclusion

The present research is to examine the factors correlated significantly with older people's life satisfaction in Putian, Fujian, China. The study adopts quantitative research method and a non-probability or convenience sampling. A face-to-face interview approach using a questionnaire composed mainly of close-ended questions is conducted. The scales in the questionnaire are mainly from previous studies in Hong Kong and other countries and were suggested to be valid and reliable. The reliabilities of the measurement scales are carefully scrutinized in the present study.

The factors that the researcher plans to examine are organized within three levels in an ecological model. In general, the results support most of the hypothesized bivariate relationships between the various independent variables and the dependent variable of life satisfaction. However, when the relative importance of variables is examined in hierarchical regression analyses, not all proposed variables are equally important in the prediction of life satisfaction. The present study is also guided by four research questions. The main findings of each question are summarized as follows.

Research question 1: What are relationships between the variables in individual level (sex, age, marital status, *hukou*, education, finance, and health) and life satisfaction of older people?

The results of bivariate analyses indicate that male respondents have significantly higher life satisfaction than female respondents. The age of older respondents is correlated significantly and negatively with their life satisfaction. The respondents who are married

report higher life satisfaction than those who are widowed or divorced. It is also found that older respondents with a non-agricultural *hukou* have higher life satisfaction than their counterparts with an agricultural *hukou*. The years of formal education of older respondents are also correlated significantly and positively with their life satisfaction. Furthermore, the results demonstrate that older people's finance and health are correlated significantly and positively with their life satisfaction.

The results of multivariate analyses reveal that when the variables of sex, age, marital status, *hukou*, education, finance, and health are entered into regression analysis, the variables of education, finance, and health are found to be significant predictors of life satisfaction among older people. When the variables in interpersonal level (leisure activity participation, social support, and intergenerational relations) are added into regression equation, the variables of education, finance, and health are still found to be significant predictors of life satisfaction among older people. After the two cultural variables (having *mianzi* in social interactions and Chinese cultural beliefs about adversity) are further added into regression equation, only the variable of finance is found to be a significant predictor of life satisfaction among older people. The findings of hierarchical regression analysis also indicates the relative importance of the variables in individual level over the variable in interpersonal and cultural levels.

Research question 2: What are relationships between the variables in interpersonal level (leisure activity participation, intergenerational relations, and informal social support) and life satisfaction of older people?

According to the findings of bivariate analyses, older people's leisure activity participation levels are correlated significantly and positively with their life satisfaction. It is also found that the three variables of family harmony, filial support, and filial discrepancy, which are used to measure intergenerational relations, are correlated significantly and positively with life satisfaction among older people. Furthermore, both variables of perceived social network and satisfaction with social support, which are used to measure informal social support, are correlated significantly and positively with life satisfaction of older people.

Based on the results of multivariate analyses, when the variables in the individual level are controlled, the variables of leisure activity participation, satisfaction with social support, family harmony, filial support, and family discrepancy are found to be significant predictors of older people's life satisfaction. After two cultural variables of having *mianzi* in social interactions and Chinese cultural beliefs about adversity are entered into regression equation, the variables of leisure activity participation, satisfaction with social support, family harmony, and filial support are still found to be significant predictors of older people's life satisfaction. Only the variables of perceived social network and filial discrepancy are not significant predictors. The findings suggest the importance of interpersonal relations to life satisfaction among older people.

Research question 3: What are relationships between the variables in cultural level (the endorsement of positive Chinese cultural beliefs of adversity and the degree of having *mianzi* in social interactions) and life satisfaction of older people?

Both bivariate analysis and multivariate analysis are adopted to assess the relationships between two cultural variables of having *mianzi* in social interactions and the endorsement of positive Chinese cultural beliefs about adversity and the variable of life satisfaction. The results of bivariate analysis indicate that both cultural variables are correlated significantly and positively with life satisfaction among older people.

The findings of hierarchical regression analysis demonstrate that when the variables in both individual and interpersonal levels are controlled, both variables of having *mianzi* in social interactions and Chinese cultural beliefs about adversity contribute significantly to explaining the variance of life satisfaction among older people in the present study. It is evident that both variables are associated significantly with older people life satisfaction.

Research question 4: What are patterns of correlates of life satisfaction for the two groups of older people with different *hukous*?

The correlation analysis and hierarchical regression analysis are used to assess the patterns of correlates of life satisfaction for the two groups of older people with different *hukous*. Based on the results of correlation analyses, it is found that all independent variables that the researcher examines in the present study are correlated significantly with the variables of life satisfaction for both groups of older people with different *hukous*. The analysis is also conducted to compare the correlation between each independent variable and the dependent variable between two groups of older people with different *hukous*. It is found that the relative importance of education, self-perceived health status, Lubben social network, family harmony, and Chinese cultural beliefs about adversity to life satisfaction are rather different between two groups of older people with different *hukous*. After

adopting Bonferroni correction, the relationships between the variable of the endorsement of positive Chinese cultural beliefs about adversity and the variable of life satisfaction are significantly different for two groups of older people with different *hukous*.

The results of hierarchical regression analyses demonstrate that in the first step when the variables in individual level are entered into regression equation, the variables of marital status, financial strain and annual income are significant predictors for the respondents with an agricultural *hukou*. The variables of financial strain and self-perceived health are found to be significant predictors for the respondents with a non-agricultural *hukou*. In the second step when the variables in individual level are controlled and the variables in interpersonal level are entered into regression equation, the variables of annual income, activity participation, satisfaction with social support, filial support, and filial discrepancy are found to be significant predictors for the respondents with an agricultural *hukou*. The variables of financial strain, self-perceived health status, satisfaction with social support, and filial support are found to be significant predictors for the respondents with a non-agricultural *hukou*. In the third step when the variables in individual and interpersonal levels are controlled and the two cultural variables are entered into regression equation, the variables of annual income, activity participation, satisfaction with social support, filial support, filial discrepancy, having *mianzi* in social interactions, and Chinese cultural beliefs about adversity are found to be significant predictors for the respondents with an agricultural *hukou*. The variables of financial strain, self-perceived health status, filial support, having *mianzi* in social interactions, and Chinese cultural beliefs about adversity are found to be significant predictors for the respondents with a non-agricultural *hukou*. The analysis is also conducted to test the equality of regression coefficients in the three

steps of regression analyses. The findings indicate that only the regression coefficients regarding the relationship between Chinese cultural beliefs about adversity and life satisfaction are significantly different for two groups of older people with different *hukous*. This suggests that the relative importance of Chinese cultural beliefs about adversity to life satisfaction is different for two groups of older people with different *hukous*.

The present study contributes to our understanding of the correlates of life satisfaction among older people in mainland China as follow. First, the present study proposes that the variable of *hukou*, the degree of having *mianzi* in social interactions, and Chinese cultural beliefs about adversity exert impacts on life satisfaction among older people in China. The analyses of empirical data reveal that these factors are associated significantly with life satisfaction among older people. Second, many findings of the present study are consistent with the findings in the previous studies, which adds research evidence for social work practice. Third, the study demonstrates that ecological model can serve as a useful theoretical framework to organize the diverse factors associated with life satisfaction of older people in a comprehensive and unitary way. The present study can be viewed as a step toward integrating findings on the factors associated with older people's life satisfaction that can guide future empirical research.

Appendix A: Questionnaire

閱卷編號：_____

訪問地點：_____

老年人生活滿意度的調查問卷

敬愛的長者：

您好！

香港中文大學社會工作系的博士學生黃玉濃在進行一項關於老年人生活滿意度的研究，這個研究主要是為了瞭解老年人的生活滿意度，以便為更好地服務老年人提供各種建議和對策。本次研究是以莆田戶口的老年人作為訪問對象，希望能夠利用回答問卷的方法，為研究者提供寶貴的意見，希望能得到你的合作接受訪問。所有的訪問資料都是以不記名的方式進行分析，一切有關您個人的資料會絕對保密的。請您放心。謝謝！

黃玉濃

二零零八年十二月

一、個人資料

- 1、被訪者的性別？ 1. 男 2. 女
- 2、你是哪一年出生的？（以身份證的年份為準） _____年
- 3、你目前的婚姻狀況？ 1. 已婚 2. 未婚 3. 鰥/寡 4. 分居 5. 離婚
- 4、你的戶口類型？ 1. 農戶 2. 非農戶
- 5、你接受過多少年的正規教育？ _____年
- 6、 i) 你認為你有足夠的金錢來支付你在食物方面的需求嗎？
 1. 足夠 2. 剛好 3. 不夠
- ii) 你認為你有足夠的金錢來支付你在醫療服務方面的需求嗎？
 1. 足夠 2. 剛好 3. 不夠
- iii) 你認為你有足夠的金錢來維持你的日常生活開支嗎？
 1. 足夠 2. 剛好 3. 不夠
- iv) 你在支付每個月的帳單（水費，電費，電話費）方面有困難嗎？
 1. 沒有困難 2. 有點困難 3. 困難 4. 很困難
- v) 你個人去年的整體收入大約是多少元？
 1. 低於 1000 元 2. 1000 - 1999 元 3. 2000 - 2999 元 4. 3000 - 3999 元
 5. 4000 - 4999 元 6. 5000 - 5999 元 7. 6000 - 6999 元 8. 7000 - 7999 元
 9. 8000 - 8999 元 10. 9000 - 9999 元 11. 10000 以上，請指明_____

7、 i) 你覺得自己目前的健康狀況什麼樣？

1. 很差 2. 差 3. 普通 4. 好 5. 很好

ii) 在過去的一個月內，你是否有困難完成以下列這些活動？請在每一項活動後面圈出你的答案。

	無困難	有困難
洗澡	0	1
穿衣、梳頭、刷牙	0	1
飲食	0	1
上下床/ 椅凳	0	1
上落樓梯	0	1
室內活動	0	1
用廁所大小便	0	1
煮飯	0	1
簡單家務，如洗碗、洗衣服	0	1
做繁重家務，如搬重物	0	1
買雜物用品、買菜	0	1
乘搭公共交通工具	0	1
探訪親屬朋友	0	1
打電話	0	1
個人財物管理	0	1

二、 閒暇活動參與

以下是八大類別的閒暇活動，你可能有參與或沒有參與，請在每題右邊圈一個數字表示您參與的程度。

1 = 從來沒有; 2 = 幾乎沒有 (過去一個月內，出現這種情況一次或兩次)； 3 = 很少有 (過去一周內，出現這種情況有一或兩次)； 4 = 常有 (過去一周內，出現這種情況三或四次)； 5 = 幾乎一直有 (幾乎每天都有)

	從來沒有	1	2	3	4	5	幾乎一直有
1) 大眾媒體 (如：看電視，聽廣播，上網)		1	2	3	4	5	
2) 閱讀 (如：讀書、看報、或看雜誌)		1	2	3	4	5	
3) 社會活動 (如：打牌，跳舞，打麻將，聚會)		1	2	3	4	5	
4) 戶外活動 (如：釣魚，園藝，散步， 逛街)		1	2	3	4	5	
5) 體育活動 (如：打太極，打乒乓球，打門球)		1	2	3	4	5	
6) 觀看體育賽事 (如：看足球，乒乓球，門球)		1	2	3	4	5	
7) 文化活動 (如：參與祠堂或宮殿的活動)		1	2	3	4	5	
8) 個人興趣愛好 (如：做手工，畫畫， 彈奏樂器)		1	2	3	4	5	

三、社會支持

家庭網路 (注：親人指的是和你有血緣或姻親關係的人)

1) 你有多少親人你最少一個月內見面或交談一次？

0 = 沒有 1 = 1 個 2 = 2 個 3 = 3 或 4 個 4 = 5 到 8 個 5 = 9 個及以上

2) 你有多少親人你感到和他們在一起很放鬆，你可以向他們傾吐心事？

0 = 沒有 1 = 1 個 2 = 2 個 3 = 3 或 4 個 4 = 5 到 8 個 5 = 9 個及以上

3) 你有多少親人你感到很親近的，你可以找他們幫助你的？

0 = 沒有 1 = 1 個 2 = 2 個 3 = 3 或 4 個 4 = 5 到 8 個 5 = 9 個及以上

朋友網路 (注：朋友指你所有的朋友包括你的鄰居)

4) 你有多少朋友你最少一個月內見面或交談一次？

0 = 沒有 1 = 1 個 2 = 2 個 3 = 3 或 4 個 4 = 5 到 8 個 5 = 9 個及以上

5) 你有多少朋友你感到和他們在一起很放鬆，你可以向他們傾吐心事？

0 = 沒有 1 = 1 個 2 = 2 個 3 = 3 或 4 個 4 = 5 到 8 個 5 = 9 個及以上

6) 你有多少朋友你感到很親近的，你可以找他們幫助你的？

0 = 沒有 1 = 1 個 2 = 2 個 3 = 3 或 4 個 4 = 5 到 8 個 5 = 9 個及以上

支援品質

7) 對於你的家人，親戚，朋友，和鄰居給予你的支援，你是否覺得滿意？請在每一項後面圈出你認為最能夠代表你的感受的答案。

	很不滿意	不滿意	一般	滿意	很滿意
1. 家人	1	2	3	4	5
2. 親戚	1	2	3	4	5
3. 朋友	1	2	3	4	5
4. 鄰居	1	2	3	4	5

四、代際關係

1) 在過去的一年裏，你的子女對你有多少以下情況呢？請在每一項後面圈出你認為最能夠代表你的感受的答案。

	沒有或很少	頗少	一般	頗多	很多
1. 照顧你們	1	2	3	4	5
2. 在金錢上資助你們	1	2	3	4	5
3. 尊敬你們	1	2	3	4	5
4. 順從你們	1	2	3	4	5
5. 體貼和令你們開心	1	2	3	4	5
6. 經常問候你們	1	2	3	4	5

2) 在過去的一年裏，以下你子女的行為與你對他們的期望有多大的差距呢？請在每一項後面圈出你認為最能夠代表你的感受的答案。

	遠低於你的期望	有些低於你的期望	基本符合你的期望	有些高於你的期望	遠高於你的期望
1. 照顧你們	1	2	3	4	5
2. 在金錢上資助你們	1	2	3	4	5
3. 尊敬你們	1	2	3	4	5
4. 順從你們	1	2	3	4	5
5. 體貼和令你們開心	1	2	3	4	5
6. 經常問候你們	1	2	3	4	5

3) 總的來說，你覺得你的家庭和睦程度什麼樣？

1. 很不和睦； 2. 不和睦； 3. 一般； 4. 和睦； 5. 很和睦

五、社會交往中的面子

請問你和以下的熟人交往時是否覺得有面子呢？請在每一項後面圈出你認為最能夠代表你的感受的答案。

	很沒面子	沒面子	一般	有面子	很有面子
1. 和朋友的交往	1	2	3	4	5
2. 和親戚的交往	1	2	3	4	5
3. 和鄰居的交往	1	2	3	4	5

六、中國文化關於逆境的信念

以下共有 9 句你可能同意或不同意的句子。請小心閱讀每一句，並按你的感覺，在每一句句後圈出你認為最能夠代表你的感受的答案。

如果你十分不同意該句子，請圈①；如果你頗為不同意該句子，請圈②；

如果你少許不同意該句子，請圈③；如果你少許同意該句子，請圈④；

如果你頗為同意該句子，請圈⑤；如果你十分同意該句子，請圈⑥

請不要花太多時間在任何一句句子上。請回答所有問題。

	十分不同意	頗為不同意	少許不同意	少許同意	頗為同意	十分同意
1. 吃得苦中苦，方為人上人。	1	2	3	4	5	6
2. 好醜命生成。	1	2	3	4	5	6
3. 有志者事竟成。	1	2	3	4	5	6

4. 只要有恒心，鐵柱磨成針。	1	2	3	4	5	6
5. 人窮志短。	1	2	3	4	5	6
6. 要戰勝貧窮，勤奮是一個重要的因素。	1	2	3	4	5	6
7. 人定勝天。	1	2	3	4	5	6
8. 知足常樂。	1	2	3	4	5	6
9. 成功人士並不是天生的，因此我們每一個人都必須努力求進步。	1	2	3	4	5	6

七、總體生活滿意度

以下共有 5 句你可能同意或不同意的句子。請小心閱讀每一句，並按你的感覺，在每一句句後圈出你認為最能夠代表你的感受的答案。

如果你十分不同意該句子，請圈①；如果你頗為不同意該句子，請圈②；如果你少許不同意該句子，請圈③；如果你少許同意該句子，請圈④；如果你頗為同意該句子，請圈⑤；如果你十分同意該句子，請圈⑥

請不要花太多時間在任何一句句子上。請回答所有問題。

	十分不同意	頗為不同意	少許不同意	少許同意	頗為同意	十分同意
1. 在很多方面，我的生命是接近自己理想中的狀態。	1	2	3	4	5	6
2. 我的生活狀況是極好的。	1	2	3	4	5	6
3. 我對自己的生命感到滿意。	1	2	3	4	5	6
4. 到目前為止，我已經取得在生命中我想得到的重要東西。	1	2	3	4	5	6
5. 如果我能夠再活一次，幾乎沒有什麼東西是我想改變的。	1	2	3	4	5	6

(完)

多謝你接受訪問。再見。

訪問員簽名：_____

訪問日期：_____年____月____日

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