



**SUBJECTIVE WELL-BEING OF CHINA'S OFF-FARM  
MIGRANTS**

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**ABSTRACT**

Existing research applying the Personal Wellbeing Index (PWI) in China is restricted to urban and rural samples. There are no studies for Chinese off-farm migrants. The specific aims of this study are (a) ascertain whether Chinese off-farm are satisfied with their lives; (b) investigate the equivalence of the PWI in terms of its psychometric properties; and (c) examine whether the responses to the PWI from participants falls within the narrow range predicted by the 'Theory of Subjective Wellbeing Homeostasis'. The PWI demonstrated good psychometric performance in terms of its reliability, validity and sensibility and was consistent with previous studies for Western and non-Western samples. The data revealed a moderate level of subjective well-being (PWI score = 62.6). While Chinese off-farm migrants lead hard lives, the PWI was within the normative range predicted for Chinese societies by the 'Theory of Subjective Wellbeing Homeostasis'. A likely explanation for this finding rests with the circular nature of migration in China. When China's off-farm migrants find it too difficult to cope in the cities, most have the fallback position that they can return to their homes in the countryside. This option provides an external buffer to minimize the inherent challenges of life which would otherwise impinge on the life satisfaction of China's off-farm migrants.

**Keywords** China, Personal Wellbeing Index, Subjective Wellbeing

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## 1. INTRODUCTION

There are estimated to be 200 million off-farm migrants in China (AFP, 2008). These people, who constitute 80 per cent of the workforce in the construction sector and 50 per cent of the workforce in the service sector, have made China the world's factory. Simply put, off-farm migrants have been the engine room that has driven China's high growth rate and positioned China to overtake the United States as the world's largest economy by 2020. However, China's off-farm migrants lead very hard lives. In the workplace off-farm migrants receive low wages, endure long hours and are often confronted with poor working conditions. A survey administered by the All-China Federation of Trade Unions (ACFTU) in 2006 found that 65 per cent off-farm migrants were working in so-called "Three D jobs" (dirty, dangerous and demeaning) with little or no prospect for career advancement (Tao, 2006).

Migrant jobs are shunned by local urban residents who consider them below their status. For example, the manager of a Shanghai construction project interviewed in the mid-1990s stated "Shanghai people do not want to do this kind of work" (Roberts, 2001). Local urban residents "look down" on the low paid service jobs in which migrants are concentrated. "They do not want to work [in these sorts of] jobs which they do not consider honorable" (Laidoff Workers, 1998 cited in Roberts, 2001). There was a shortage of female textile workers, nurses, sanitation and service personnel in Shanghai in the late 1990s while 40 per cent of females laid-off from the state-owner sector remained without jobs. According to Chang (1998, p.39) "the majority of suspended female workers would regard such work with contempt and "would rather remain unemployed at home than take on a hard and poorly remunerated job". The contempt in which local urban residents hold the occupational status of off-farm migrants is reflected in the manner in which an urban resident interviewed by Lee (1999) complained about longer worker hours introduced by a new manager - the urban resident complained that the new manager "treats us like we were migrant workers".

One study of off-farm migrant workers' working hours found that nearly twice as many off-farm migrants as urban residents worked six days a week, and almost 60 per cent of off-farm migrants worked seven days a week (ILO, 2007). Another study of the working hours of off-farm migrants in Shanghai found that the mean hours worked was 55.5 with 40 per cent working 40 to 60 hours per week; 25 per cent working 70 hours per week and 7 per cent working more than 70 hours per week (Feng *et al.*, 2002). Surveys of off-farm migrants' wages suggest that, on average, off-farm migrants earn about one-third local urban workers' wages (Bo & Cheng, 2004). There is also a growing problem of wage arrears. One survey conducted in 2003 found that 72.5 per cent of off-farm migrants have had outstanding wages owing at some stage (Beijing Review, 2003). According to the All China Federation of Trade Unions, at the end of 2003 outstanding wages owed to off-farm migrant workers totalled as much as 100 million RMB (\$US12.5 million) (Bechtel, 2004). There has been some increase in the wages of off-farm migrant workers since 2004 in a bid to address the shortage of migrant labour that first emerged in some coastal areas in that year. Between 2004 and 2008 wages of off-farm migrants increased 60-80 per cent in some areas, although the wages and working conditions of off-farm migrants still lag behind those of urban residents.

Because off-farm migrants work such long hours there is little time for leisure. Based on extensive interviews Jacka (2005) documented narratives of migrant women who were members of the Beijing Migrant Women's Club – a non-government organization with the objective of providing migrant women with "a place to get together and share experiences" (p.53). Jacka reported that despite feely constantly homesick and lonely, migrant women in Beijing have very little time for recreation or leisure activities. Li (2006) interviewed 26 off farm migrants in Tianjin about their leisure activities. Twenty interviewees in Li's sample indicated that they never went out after work because they were exhausted and wanted to rest or did not want to spend money on socializing. Nielsen and Smyth (2007) found that when migrants did engage in leisure activities, it involved going to a park or a library that attracted no charge. An important reason off farm migrants engage in few leisure activities that entail going outdoors is that urban locals do not make them welcome in public areas. Among the off-farm migrants Li (2006) interviewed in Tianjin, some of the older

workers who had come to Tianjin prior to the relaxation of rules on migrants being in the city were still haunted by police checks and remained indoors for fear of police harassment. Confronted with a city of strangers, physically demanding jobs and few comforts, migrants experience “psychological poverty” (China Daily, 2003), reflecting feelings of profound isolation and exclusion.

The prevailing belief among off-farm migrants is that the urban population “look down” on them (Nielsen *et al.*, 2007). In one of the few studies to look at Chinese urban residents’ attitudes towards the migrant population, Solinger (1999) noted that up to three-quarters of Shanghainese blame migrant workers for urban problems such as crime, transportation problems, unemployment and environmental degradation. Nielsen *et al.* (2006) reported a similar level of migrant blame for these problems in their more recent study. Li’s (2006) interviews with migrant workers in Tianjin highlighted the effects of social exclusion on reinforcing feelings of isolation among off-farm migrants. One respondent in Li’s study claimed “People in the city...think very highly of themselves. They think they are superior to us” (p.190). Another reported that “...we get nasty abuse from the locals very often” (p.190). A survey administered by the Chongqing Municipal Agricultural Bureau found that 92 per cent of off farm migrants felt that local urban residents looked down on them because of the types of work they do in the cities (Li, 2005). For example, in the service sector in Chongqing, many off farm migrants work as hotel porters. Off farm migrants congregate in the streets in Chongqing and if urban residents are unable to carry their bags, they call for a migrant porter to do the job. These migrant porters are called “Bang Bang” in the local dialect, which is actually a derogatory term referring to the pole that a migrant porter uses to carry the urbanites’ belongings. One such ‘Bang Bang’ interviewed for a press report in the Chinese media said, “I do not care about how tiring, hard and dirty the job is [but I do not like] being looked down upon” (Li, 2005). An article in the Chinese media reports Genevieve Domenach-Chich, a UNESCO project team leader, as stating: “A migrant woman in her thirties told me her dream was to enter a restaurant without being considered a *mingong* (migrant worker), but as someone else, as a decent urban resident” (China Daily, 2003).

Several studies have documented that the objective living conditions of off-farm migrants are very poor. Solinger (1999) provided extensive evidence that the living conditions of off-farm migrants, often in shanty towns on the outskirts of big cities, are inferior to those with an urban *hukou* (household registration). Guang and Zheng (2005) argued that the living conditions of off-farm migrants in China’s big cities are far inferior to off-farm workers in the countryside who are employed in township and village enterprises. There is much evidence that off-farm migrants experience poorer housing conditions than those with an urban *hukou* (Wu, 2002, 2004). In terms of future security, few off-farm migrants are enrolled in social insurance schemes because either they lack knowledge of such schemes, the schemes are not set up to meet their needs and employers discriminate against off-farm migrants when making contributions (Li, 2008; Wong & Zheng, 2008). This means that few off-farm migrants have old-age pension insurance and in times of economic uncertainty generated by pregnancy, poor health or unemployment, the main coping mechanism is to leave the cities and return to their home village (Song & Appleton, 2008; Li, 2006, 2008).

Research on subjective well-being in China is still at a fairly embryonic stage. Chen and Davey (2008a) noted that over the last decade several studies on subjective well-being in China have been published in Chinese language journals. These studies, however, are restricted to particular segments of the population, such as students, teachers, the elderly or hospital patients, and most are confined to Guangdong and Shandong provinces. Many of the studies of subjective well-being in China in the English language literature are similarly restricted to specific segments of the population such as clinical samples (e.g., Xu *et al.*, 2006; Yan & Sellick, 2004); age-specific samples, such as adolescents (e.g, Edwards *et al.*, 2005) or the elderly (e.g., Chen, 2003). While the study of subjective well-being has long been the sole domain of psychologists, over the last three decades economists have started studying the “economics of happiness”. There is now a sprinkling of studies of subjective well-being for rural residents and urban residents done by economists, which employ large datasets that are broadly representative of the general public (Appleton & Song, 2008; Knight *et al.*, 2008; Smyth & Qian, 2008; Smyth *et al.*, 2008).

There are also two studies of subjective well-being of off-farm migrants by economists (Knight, & Gunatilaka, 2007, 2008). The problem with the “economics of happiness” literature, though, is that while it employs very large datasets, it uses a single item indicator of the form: ‘All in all, how happy are you these days?’ or ‘All in all, how satisfied are you with your life?’ to measure personal well-being. The use of a single item indicator has been widely criticized in the psychology literature on two grounds. The first is that the researcher cannot estimate the internal consistency of a single item indicator, with the result being that such indicators are subject to low levels of internal reliability. The second is that single item indicators are not able to capture the multidimensionality of psychological constructs and hence construct validity is compromised.

The purpose of this study is to employ the personal well-being index (PWI) to examine the subjective well-being of a sample of Chinese off-farm migrants in Fujian province. The PWI is a multi-item indicator of subjective well-being that examines participants’ level of life satisfaction along seven domains: standard of living, personal health, achievement in life, personal relationships, personal safety, community-connectedness and future security. These areas of satisfaction should collectively indicate people’s satisfaction with their life as a whole (International Wellbeing Group, 2006). In November 2006 an eighth domain focused on religion and spirituality was added (International Wellbeing Group, 2006), but it does not form part of the current study. The PWI was first developed in Australia as part of the Australian Unity Wellbeing Index (Cummins *et al.*, 2003). As of 2005, the PWI was being used by over 100 researchers in 50 countries (International Wellbeing Group, 2006). The psychometric properties of the PWI are well established in a series of studies for Western and non-Western samples (International Wellbeing Group, 2006). The PWI has been found to have similar psychometric properties to its use in Western samples when applied in Hong Kong (Lau *et al.* 2005, 2008), Macau (Macau Inter-University Institute, 2007), urban China (Chen & Davey, 2008b; Huang & Xing, 2005; Smyth *et al.*, 2009) and rural China (Davey *et al.*, 2008). There are, however, no studies administering the PWI to off-farm migrants in China. As Chen and Davey (2008b, 2008c) noted, while research on application of the PWI to Chinese samples is encouraging, it should be seen as a work in progress. More work is needed using different samples to build on the existing limited evidence.

The theoretical underpinning for the PWI is the “Theory of Subjective Wellbeing Homeostasis” (Cummins, 1998; Cummins & Nistico, 2002; Cummins *et al.*, 2002). This theory proposes that, under normal circumstances, subjective well-being is maintained within a limited positive range by neuro-psychological mechanisms analogous to the homeostatic management of body temperature. For the Western population, the normative range has been found to be 70-80 points on a 0-100 scale distribution with a mean of 75 (Cummins *et al.*, 2003). These values are generally about 10 points lower in Chinese samples reflecting cultural bias (Lau *et al.*, 2005). One instance in which subjective well-being fell below the normative range predicted by the “Theory of Subjective Wellbeing Homeostasis” was Algeria for which the PWI was 52.30 (SD=21.10). This finding was attributed to sufficiently adverse environmental factors that defeated the homeostatic mechanism (Tiliouine *et al.*, 2006). China’s off-farm migrants represent a particularly strong test of the “Theory of Subjective Wellbeing Homeostasis” because of the harsh environmental conditions which they are forced to endure. If the PWI for Chinese off-farm migrants is found to lie within the normative range predicted for Chinese societies, this provides evidence that the homeostatic mechanism is resilient, even in relatively difficult socio-economic circumstances.

The specific aims of this research are as follows:

- (a) Ascertain whether Chinese off-farm are satisfied with their lives.
- (b) Investigate the equivalence of the PWI in terms of its psychometric properties.
- (c) Examine whether the responses to the PWI from participants falls within the narrow range predicted by the ‘Theory of Subjective Wellbeing Homeostasis’.

## 2. METHODOLOGY

### 2.1 Instrument

The PWI was used in the present study to measure domain-level representation of subjective life satisfaction. The Chinese (Mandarin) version of the PWI, which has been previously translated using a rigorous procedure to ensure it had valid meanings (Huang & Xing, 2005; Chen & Davey, 2008b) was utilized for this purpose. The PWI used in the present study consisted of seven domains, measured on an 11-point end defined Likert scale, with numerical ratings ranging from 0 (extremely dissatisfied) to 10 (extremely satisfied). An additional item was included to probe participants' satisfaction with their life as a whole. While not part of the PWI, inclusion of this item facilitated testing for construct validity.

### 2.2 Participants and Procedure

A convenience sampling method was used to recruit 525 off-farm migrants residing in four cities (Changle, Fuzhou, Quanzhou and Xiamen) in Fujian province in 2007. Of the 525 surveys, 190 were administered in a shoe manufacturer in Fuzhou; 55 were administered in a clothes manufacturer in Quanzhou, 50 were administered in a shoe manufacturer in Changle and 20 were administered in a plastics manufacturer in Changle. The remaining surveys were collected from off farm migrants working as service workers in apartment complexes, decorating companies and hotels located in Fuzhou and Xiamen.

The PWI was administered in verbal format. As many off-farm migrants are illiterate or semi-literate, an interviewer sat down with the participant, read through each survey item and the response categories, then recorded the participant's response on the form. In addition to administering the PWI information was collected on the socioeconomic characteristics of participants (age, gender, occupation marital status, and their average monthly income). Each participant was assured that individual data would remain anonymous.

The characteristics of respondents are reported in Table 1. The most frequent missing response (51) was when participants were asked about average monthly income. Some participants were generally reluctant to answer this item. This same problem was encountered by Li (2006) in her study of migrants in Tianjin and Nielsen *et al.*, (2007) in their study of off-farm migrants in Fujian. Other participants felt that because their income was not stable, it was difficult to estimate an average. For example, one participant claimed that sometimes he works continuously for a few days – and even for 24 hours a day, whereas at other time he has no work to do at all for a whole week or more. It is also possible that some participants may have refused to answer the question on income because they have wage arrears.

**Table 1: Characteristics of Respondents**

	<i>N</i>	%	Missing	Valid
Gender			13	512
Male	246	52.5		
Female	272	47.5		
Age			37	488
25 to 30	104	21.31		
31 to 35	32	6.56		
36 to 40	34	6.97		
41 to 45	18	3.69		
46 to 50	11	2.25		
51 to 55	1	0.20		
Average Monthly Income			51	474
500 or below	10	2.11		
501-1000	237	50.00		

1001-1500	140	29.54		
1501-2000	61	12.87		
2001-5000	23	4.85		
Over 5000	3	0.63		
Marital Status			21	504
Married	196	38.88		
Single	308	61.11		
Occupation			26	499
Manufacturing	137	27.45		
Construction and Mining	41	8.21		
Services	321	64.32		

**Table 2: Demographic profiles of migrants in Beijing and Shanghai**

	Beijing (2001)	Shanghai (2003)
Males		74.63%
Age Structure		
0-14	7.4%	12.23%
15-34	80.1% <sup>(a)</sup>	60.06%
35-59	10.7%	25.51%
60 and above	1.8%	2.2%
Occupation:		
Construction and Mining	20.8%	19.8%
Manufacturing	14.5%	33.9%
Services	64.7%	56.3%
Average Monthly Income		
300 RMB and Below		4.4%
301-500 RMB		19.2%
501-800 RMB		45.2%
801-1000 RMB		19.2%
1001-1500 RMB		6.6%
1501-2000 RMB		3.0%
2001-5000 RMB		2.1%
5001 RMB and above		0.3%

Notes: Income and gender data not available for Beijing

Sources: The figures for Beijing are from the National Bureau of Statistics, 2001 Beijing Migrants Survey. Available online at [http://www.stats.gov.cn/tjgb/qttjgb/dfqjtjgb/t20020404\\_16777.htm](http://www.stats.gov.cn/tjgb/qttjgb/dfqjtjgb/t20020404_16777.htm) (in Chinese, accessed November 4, 2006). The figures for Shanghai are from National Bureau of Statistics, Shanghai Yearbook 2004 (New Shanghaiese, Chapter 51). Available online at <http://www.shtong.gov.cn/node2/node19828/node71798/node71862/node71946/userobject1ai77060.html> (in Chinese, accessed May, 8, 2006).

There is no reference data for Fujian that we could use to assess the representativeness of our off-farm migrant sample. Therefore, Table 2 presents the demographic profile of off-farm migrants from the two largest migrant receiving cities in China - Beijing and Shanghai - where data on migrant characteristics are collected. Comparison of these demographic figures with those from

our sample in Table 1 indicates that in terms of age, gender and occupation, the sample in the present study is similar to the typical migrant population travelling to other major urban centres. The average monthly income of the present sample is higher than for Shanghai in 2003, but this reflects the fact that wages for off-farm migrants have increased across the board since 2004. According to a survey of 30,000 off-farm migrants by researchers at Fudan University in Shanghai in 2007, the average monthly wage was 1200 RMB (AFP, 2008). The mean average monthly wage for the current sample was 1267 RMB ( $SD=727.51$ ). Thus, in terms of age, gender, occupation and income, the sample in the present study is broadly representative of off-farm migrants in China as a whole.

### 2.3 Data Analysis

The data were checked prior to analysis to ensure that there was no response bias that could confound the results. The Likert scale data were standardized into units of %SM on a 0-100 distribution. Descriptive statistics were used to summarize satisfaction ratings and *t*-tests and one-way ANOVA were employed to examine the relationship between satisfaction ratings and age, gender and income. Cronbach  $\alpha$ , item total correlations and item domain correlations were calculated to determine the internal reliability of the PWI. Exploratory factor analysis was used to assess the structure of the PWI. Bivariate correlations and multiple regression analyses were conducted to study the inter-relationships between the PWI domains and their contributions to "satisfaction with life as a whole" to establish construct validity.

## 3. RESULTS

### 3.1 Satisfaction Ratings of the PWI

The means and standard deviations of the domains of the PWI are given in Table 3. The mean domain scores ranged from 49.7 ( $SD=25.4$ ) to 72.6 ( $SD=20.2$ ) and the PWI score was 62.6 ( $SD=14.6$ ). This score is within the normative range of 60-70 points for Chinese societies (Chen & Davey, 2008a, 2008b, 2008c; Davey *et al.*, 2008; Huang & Xing, 2005; Lau *et al.*, 2005, 2008; Macau Inter-University Institute, 2007; Smyth *et al.*, 2009). The PWI score is just a little lower than that reported for the general adult population in Macau (63.9) (Macau Inter-University Institute, 2007), urban residents in Zhuhai (64.4) (Chen & Davey, 2008b) and the general adult population in Hong Kong (65.9) (Lau *et al.*, 2008). This result implies that lower objective measures of quality of life for off-farm migrants in China relative to those with an urban *hukou* as well as those living in Hong Kong and Macau - lower wages, longer working hours and poorer living conditions - are not reflected in subjective measures. This finding is consistent with the 'Theory of Subjective Wellbeing Homeostasis'.

**Table 3: Satisfaction ratings of the PWI**

Variable	Mean	SD
<i>Satisfaction with ....</i>		
Standard of living	56.63	19.95
Health	72.62	20.19
Life achievements	58.93	21.62
Personal relationships	72.30	17.47
Personal safety	66.86	23.58
Feeling part of the community	60.60	23.15
Future security	49.70	25.41
Personal wellbeing index	62.56	14.64

Satisfaction with personal health, personal relationships and personal safety lie above the PWI score, while standard of living, life achievement, community connectedness and future security lie below the PWI score. This result is consistent with previous findings for urban China (Chen &

Davey, 2008b; Smyth *et al.*, 2009) and supports the construct validity of the PWI across different categories of individuals in Mainland Chinese. The highest mean score was for satisfaction with personal health (72.6, SD=20.2) followed by personal relationships (72.3, SD=17.5). The lowest mean score was for future security (49.70, SD=25.41).

### Gender and Wellbeing

Table 4 presents participants' satisfaction ratings broken down according to gender. There were no significant gender differences in the PWI score, which is consistent with the previous findings of Chen and Davey (2008b) and Smyth *et al.*, (2009) for urban China and Lau *et al.* (2008) for Hong Kong. The only statistically significant difference was with respect to satisfaction with standard of living, for which females scored statistically higher.

**Table 4: Wellbeing and gender**

	Males		Females		<i>t</i> -statistic	Sig
	Mean	SD	Mean	SD		
Standard of living	54.66	19.82	58.63	19.80	2.23	0.03
Health	74.24	21.03	71.29	19.14	-1.64	0.10
Life achievements	58.45	22.24	59.58	20.81	0.59	0.56
Personal relationships	73.38	17.14	71.10	17.72	-1.46	0.15
Personal safety	68.03	23.51	66.02	23.49	-0.95	0.34
Feeling part of the community	62.03	23.94	59.38	22.41	-1.27	0.20
Future security	49.29	27.69	50.19	23.10	0.39	0.69
Personal wellbeing index	62.81	14.69	62.45	14.49	-0.27	0.78

### Age and Wellbeing

Table 5 presents participants' satisfaction ratings broken down according to age. The highest mean score was reported by the age group 31 to 35: 66.0 (SD=13.5), while the lowest mean scores was reported by the oldest age groups (46-50): 56.2 (SD=8.8) and 51-55: 56.2. From 31-35 onwards, older age groups report lower mean scores, which is inconsistent with the finding from previous studies for urban and rural China that subjective well-being increases with age, at least from the mid-30s to early 40s (see eg. Appleton & Song, 2008; Knight *et al.* 2008). Evidence from interviews with migrant workers suggest that most want to save enough while they are young so that they do not have to continue to do migrant work or *dagong* as they get older (see eg. Fan & Wang, 2008). This reflects the back breaking nature of much of the work, which is better suited to younger people. Thus, if people are continuing to do *dagong* as they age this suggests they may well be forced into so doing because they lack the resources to remain in their home town, which would lower subjective well-being. Differences in the PWI scores between age groups, however, were not significant ( $F(6, 481) = 1.78$   $p=0.102$ ), similar to Chen and Davey's (2008b) for urban residents.

**Table 5: Wellbeing and age**

age group	N	%	Mean	SD
Less than 25	288	59.02	61.34	14.94
25 to 30	104	21.31	65.04	14.49
31 to 35	32	6.56	65.98	13.45
36 to 40	34	6.97	64.92	14.56
41 to 45	18	3.69	60.56	14.29
46 to 50	11	2.25	56.23	8.74
51 to 55	1	0.20	51.43	.
Total	488		62.52	14.67

$F(6, 481) = 1.775$   $p=0.102$ .

### Income and Wellbeing

Table 6 presents participants' satisfaction ratings broken down according to income. The highest income category (participants earning more than 5000 RMB per month) had the highest mean (67.6, SD=5.4). The lowest income category (participants earning 500 RMB or less per month) had the lowest mean (57.1, SD=28.1). In general, higher income earners reported higher personal wellbeing; however, a one way ANOVA found that there were no significant differences in reported wellbeing across income groups at  $p < .05$  level.

**Table 6: Wellbeing and Income**

Average monthly income (RMB)	N	%	Mean	SD
500 or below	10	2.11	57.14	28.10
501-1000	237	50.00	61.15	15.69
1001-1500	140	29.54	62.64	13.02
1501-2000	61	12.87	67.07	12.63
2001-5000	23	4.85	64.22	9.89
Over 5000	3	0.63	67.62	5.40
Total	474		62.43	14.77

Welch (5, 18.7) = 2.223 ( $p=0.095$ ).

### **3.2 Internal Reliability of the PWI**

#### Cronbach $\alpha$

The Cronbach coefficient for the PWI is 0.80. This demonstrates good reliability and is comparable to the findings of pre-existing studies for the adult population in Australia (Cummins *et al.*, 2003), Hong Kong (Lau *et al.*, 2005, 2008), urban China (Chen & Davey, 2008b; Huang & Xing, 2005; Smyth *et al.*, 2009) and rural China (Davey *et al.*, 2008).

#### Item-Total Correlations

The item-total correlations are reported in Table 7. These ranged from 0.43 to 0.61, with most having a moderate correlation of around 0.5. This finding is similar to previous studies for Chinese societies. For example, Chen and Davey (2008b) found the item-total correlations for Zhuhai ranged from 0.50 to 0.61; Smyth *et al.* (2009) found the item-total correlations ranged from 0.49 to 0.61 for six Chinese cities; Lau *et al.* (2005) found the item-total correlations ranged from 0.33 to 0.69 for Hong Kong and from 0.21 to 0.66 for Australia.

**Table 7: Item-total correlation of each domain of the PWI**

	Item-Total Correlation
Standard of living	0.56
Health	0.43
Life achievements	0.61
Personal relationships	0.51
Personal safety	0.51
Feeling part of the community	0.58
Future security	0.53
Cronbach's alpha=.798	

All the correlations are significant at  $p < .01$  level.

### Domain Inter-correlations

The domain inter-correlations reported in Table 8 ranged between 0.30 and 0.56. The highest correlations were standard of living with life achievement: 0.56; standard of living with future security: 0.45 and life achievement with future security: 0.44.

**Table 8: Domains Inter-item correlations**

	STAND	HLTH	ACH	REL	SAF	COM	SEC
STAND	1.00						
HLTH	0.33	1.00					
ACH	0.56	0.36	1.00				
REL	0.31	0.37	0.37	1.00			
SAF	0.30	0.26	0.31	0.40	1.00		
COM	0.34	0.32	0.42	0.42	0.41	1.00	
SEC	0.45	0.22	0.44	0.25	0.39	0.40	1.00

Stand – standard of living; Ach – life achievement; Rel – personal relationships; Saf – personal safety; Com – part of community; Sec – future security. All the correlations are significant at  $p < .01$  level.

### **3.3 Validity of the PWI**

#### Principal Components Analysis

To determine the coherence of the subscales, the domains were subjected to a principal components analysis. All assumptions for the performance of this analysis were met. All variables inter-correlated with at least one other variable at  $>0.30$  (see Table 8). The Kaiser-Meyer-Okin (KMO) value was 0.84, which exceeded the minimum recommended value of 0.60 (Tabachnik & Fidell, 2005). The KMO value found in this study was similar to that found by Chen and Davey (2008b) and Smyth *et al.* (2009) for Chinese residents with an urban *hukou*. The PWI was significant ( $p < 0.01$ ) for Bartlett's test of sphericity. The analysis revealed the extraction of one component. This result was similar to Australia (Cummins *et al.*, 2003), Hong Kong (Lau *et al.*, 2005, 2008), urban China (Smyth *et al.*, 2009) and rural China (Davey *et al.*, 2008). The seven items of the PWI loaded 0.64-0.75 on this component and explained 45.6 per cent of the variance (see Table 9). This is similar to the 47 per cent found by Lau *et al.* (2005) for Hong Kong and by Smyth *et al.* (2009) for urban China.

**Table 9: Factor analysis for the PWI items**

Item	Factor loading
Standard of living	0.71
Health	0.59
Life achievement	0.75
Personal relationships	0.65
Personal Safety	0.64
Feeling part of the community	0.70
Personal Security	0.67
Eigenvalue	3.19
% of variance explained	45.58

#### Shared Contributions of Domains to Life as a Whole: Bivariate Correlation

The seven domains of the PWI correlate significantly with the general item of "life as a whole". They ranged from 0.28 to 0.62 (see Table 10). This result is similar to Australia and Hong Kong, for which Lau *et al.*, (2005) found the range was 0.30 to 0.70 and residents with an urban *hukou* in China, for whom Smyth *et al.* (2009) found the range was 0.31 to 0.62.

### Shared Contributions of Domains to Life as a Whole: Multiple Regression

To determine the unique contribution of the domains of the PWI to “satisfaction with life as a whole”, the latter was regressed on the domain items of the former (see Table 10). The model explained 44 per cent of the variance, which is similar to previous studies for Australia (43 per cent) (Lau *et al.*, 2005) and urban China (46 per cent) (Smyth *et al.* 2009) and within the range of other studies for Western and Chinese societies. Five domains, namely, standard of living ( $\beta=0.44$ ), personal health ( $\beta=0.12$ ), life achievement ( $\beta=0.15$ ), personal safety ( $\beta=0.10$ ) and future security ( $\beta=0.09$ ) were found to make a significant contribution to life as a whole. Previous studies have also found standard of living and life achievement make the largest unique contribution to predicting life as a whole (Lau *et al.*, 2005; Renn *et al.*, 2009; Smyth *et al.*, 2009; Tiliouine *et al.*, 2006). The two domains that made no significant contribution to life as a whole were personal relationships and community connectedness. The latter likely reflects the fact that in China community is identified with ethnicity and place of birth and traditionally off-farm migrants do not feel part of the community in which they are temporarily living. As such, off-farm migrants do not identify with city people.

Economic and social stratification in the form of the *hukou* system institutionalises this sense of disconnectedness for many off-farm migrants. There is extensive evidence from interviews with off-farm migrants, in China supporting this conclusion. For instance, one off-farm migrant interviewed by Fan and Wang (2008) is typical of many when he stated: “My *benfen* (role) is *nongmin* (peasant). .... *Chenglire* (city people) are different from us. What they eat and wear are different. You can tell right away. *Dagong* (migrant work) won't help you become a city person. City people are those who can buy an apartment, start a business or open a shop. *Dagong* won't help you achieve all that. But they [city people] are they and we [rural people] are we. I don't compare myself to them” (p. 221). The seven domains contribute 16 per cent in unique variance, sharing 29 per cent of variance between them. The unique and shared variance explained is similar to the findings from previous studies for Chinese societies - Hong Kong (see Lau *et al.*, 2005, 2008) and urban China (Smyth *et al.*, 2009) – and Western societies - Australia (Lau *et al.*, 2005) and Austria (Renn *et al.* 2009).

**Table 10: Regression of ‘satisfaction with life as a whole’ on personal domains**

	Correlation With “life as a whole”	Regression: ‘life as a whole’ is dependent variable		
		$\beta$	Sig.	sr <sup>2</sup>
STAND	0.62	0.44	0.00	0.12
HLTH	0.36	0.12	0.00	0.01
ACH	0.50	0.15	0.00	0.01
REL	0.29	0.02	0.70	0.00
SAF	0.33	0.10	0.01	0.01
COM	0.28	-0.05	0.23	0.00
SEC	0.40	0.09	0.03	0.01
R <sup>2</sup>		.45		
Adj. R <sup>2</sup>		.44		
Unique variability		.16		
Shared variability		.29		

Stand – standard of living; Ach – life achievement; Rel – personal relationships; Saf – personal safety; Com – part of community; Sec – future security. All the correlations are significant at  $p < .01$  level.

## 4. DISCUSSION

China has had one of the highest growth rates of any country in the world over the last three decades. China's off-farm migrants have been the unsung heroes of this phenomenal growth. For decades, China's off-farm migrants have worked long hours with little or no social protection, providing the basis for China's comparative advantage in low wage manufacturing. At the same

time, based on objective measures, China's off-farm migrants experience poor living conditions, have low incomes relative to those with an urban *hukou* and confront widespread discrimination. While wages of off-farm migrants have increased a lot since 2004, the Fudan survey of 30,000 off-farm migrants administered in 2007, mentioned above, found that for a quarter of respondents incomes were just sufficient to cover living expenses (AFP, 2008). Along with Knight and Gunatilaka (2007, 2008) the present study is one of the first to examine the subjective well-being of China's off-farm migrants and the first to use an instrument with established psychometric properties to do so.

As outlined in the introduction, the main aims of the study reported here were to (a) examine whether China's off-farm are satisfied with their lives; (b) investigate the equivalence of the PWI in terms of its psychometric properties with the off-farm migrant sample; and (c) consider the applicability of the 'Theory of Subjective Wellbeing Homeostasis' to China's off-farm migrants. The findings are discussed in terms of each of these major objectives.

#### **4.1 Satisfaction with Life**

In Table 3, the highest mean score was for personal health followed by personal relationships. In previous research personal relationships and personal health are generally among the highest scoring domains (see eg. Davey *et al.*, 2008; Lau *et al.*, 2005; Smyth *et al.*, 2009), but existing studies have not found personal health to be the highest scoring domain. The results reported here have to be seen in terms of how off-farm migrant workers conceptualise satisfaction with health. Based on interviews with migrant workers in Tianjin, Li (2008) reported that off-farm migrants "have their own definition of illness, which can be quite different from the usual definition urban people use. Migrant workers define illnesses in relation to their work" (p. 107). In particular, Li (2008) found that if off-farm migrants were able to work, they were satisfied with their health. And off-farm migrants will continue to work unless seriously injured or ill, in which case they will return to their home town.

Another explanation for the high satisfaction with health is the relatively young age of the participants – 80 per cent of the participants were below 30 years old. One would expect that satisfaction with personal health would decrease as one ages. Thus, having more older participants in the sample, as previous studies of the general adult population have had, would reduce the score for the health domain. In this respect, Lau *et al.*, (2008) found that older Hong Kong residents (aged 65 and above) reported lower satisfaction levels with health than Hong Kong residents aged 35-64.

Of the seven domains, off-farm migrants were least satisfied with future security. This result is explicable in view of the casual nature of employment undertaken by off-farm migrants. Traditionally migrant stays in the city are predominantly temporary – earning them the collective name "the floating population" (*liudong renkou*) (Solinger, 1999). Most off-farm migrants remain with the same employer for only a short period – usually less than six months – before returning to their home town or moving on to another employer. The fact that off-farm migrants regularly change jobs and that social insurance benefits are not portable is an important reason why relatively few off-farm migrants are enrolled in social insurance schemes (Li, 2008; Wong & Zheng, 2008). In the absence of old-age pension insurance, many off-farm migrants pin their hopes on their children to provide for them in their old age. As Fan and Wang (2008) put it, there is a "deep-rooted tradition that grown up children are part of the social support system and are the main sources of old-age security, especially in the countryside" (p.231). However, there is evidence that, over time, more children of off farm migrants want to start a new life in the cities themselves and that they will not necessarily be available to provide for their parents as they age. This increases uncertainty about future security. For example, Fan and Wang (2008) found evidence of this trend in their interviews with off-farm migrants and their families in 2005. After discussing the case of a son whose hope was to move to the city permanently, Fan and Wang (2008) concluded: "The younger son's aspirations and desire to identify himself as an urban person, at the same time, hints

at a new generation who may be questioning their rural identity and striving more aggressively than their parents to leave the countryside" (p.234).

However, abstracting from differences in domain scores, the overall PWI score of 62.6 ( $SD=14.6$ ) is suggestive of a moderate positive level of subjective well-being (Chen & Davey, 2008b). Except for future security, the individual domain scores lie above the mid-point and even future security lies just below the mid-point. The PWI score is consistent with the normative range for the PWI for non-Western countries, which is 60-70%SM. In particular, despite differences in material living standards, the PWI score for off-farm migrants is of similar magnitude to that found for Hong Kong (Lau *et al.*, 2005, 2008), Macau (Macau Inter-University Institute, 2007), rural China (Davey *et al.*, 2008) and urban China (Chen & Davey, 2008b; Xing & Huang, 2005; Smyth *et al.*, 2009). It also conforms with Chen and Davey's (2008a, 2008c) conclusions that reported life satisfaction in studies of Chinese societies fall within a narrow range just above the midpoint on the scale. The result supports the conclusion that has emerged out of successive studies of the Australian population (Cummins *et al.*, 2003, 2004) and a growing literature for Chinese societies on the Mainland and in Hong Kong and Macau that most people are fairly satisfied with their lives.

#### **4.2 Psychometric Properties of the PWI**

A second objective of the present study was to examine the psychometric properties of the PWI in a sample of Chinese off-farm migrants. As Chen and Davey (2008b) noted: "This is important because the [PWI] remains a work in progress, especially in Chinese samples from which empirical evidence is needed". The PWI was found to exhibit good reliability, validity and sensitivity as a measure of subjective well-being. The results support the conclusions from extant studies which have applied the PWI to Mainland China (Chen & Davey, 2008b; Davey *et al.*, 2008; Xing & Huang, 2005; Smyth *et al.*, 2009); Hong Kong (Lau *et al.*, 2005, 2008) and Macau (Macau Inter-University Institute, 2007) that the instrument has good psychometric properties. This literature, in turn, reinforces similar conclusions from a growing number of studies that have applied the PWI in Western countries (International Wellbeing Group, 2006). The Cronbach  $\alpha$  value of 0.80 demonstrates good internal reliability and is comparable to existing findings of for Western and non-Western countries. The item-total correlations ranged from 0.43 to 0.61, which is similar to those found in previous studies. A coherent one-component structure emerged for the PWI which explained 46 per cent of the variance, similar to that found by Lau *et al.*, (2005) for Hong Kong and Smyth *et al.* (2009) for urban China. The shared contributions of domains to life as a whole from bivariate correlations and multiple regression were also consistent with the extant literature.

#### **4.3 Applicability of the 'Theory of Subjective Wellbeing Homeostasis'**

The 'Theory of Subjective Wellbeing Homeostasis' posits that subjective well-being will fall within a positive narrow range, unless there are adverse environmental factors that defeat the homeostatic mechanism. According to Cummins *et al.* (2002): "These may have their origins either external to the person, in terms of life events, or within the person, such as in perception of pain" (p.13). It was suggested above that China's off-farm migrants represent a strong test of the 'Theory of Subjective Wellbeing Homeostasis' because of the harsh economic and social conditions which they are forced to endure in China's cities. That the PWI was found to fall within a narrow band predicted for non-Western societies and that the PWI demonstrated good psychometric properties with the off-farm migrant sample suggests that the data obtained in the present study are consistent with the 'Theory of Subjective Wellbeing Homeostasis'. A likely explanation for this finding rests with the circular nature of migration in China. When China's off-farm migrants find it too difficult to cope in the cities, most have the fallback position that they can return to their homes in the countryside. This option provides an external buffer to minimize the inherent challenges of life which would otherwise impinge on the life satisfaction of China's off-farm migrants.

While there is some evidence that off-farm migrants are remaining for longer periods in the cities (Jacka, 2005), most studies have concluded that off-farm migrants do not desire to settle in the

cities long-term and, instead, prefer to return to their homes in the country. Zhu's (2003, 2007) surveys in Fujian conducted between 2000 and 2002 found that only a small proportion of off-farm migrants would move their whole family to the city, even if they were freely given an urban *hukou*. In the cities off-farm migrants are viewed as outside labour, rather than members of urban society (Solinger, 1999). Their social interaction with urban locals is minimal, there is a widespread perception that urban locals "look down" on them (Nielsen *et al.*, 2007) and they lack the security that provides a buffer against the possibility that subjective well-being might fall below the normative range. However, the situation is different in the countryside. As Fan and Wang (2008) noted: "Security is related to protection, safety, continuity and reliability, and a sense of future and permanence. After 20 years of massive rural-urban migration, the countryside continues to be the basis of economic security for China's peasant migrants and their families" (p. 208). If off-farm migrants experience life events that potentially threaten the homeostatic mechanism, such as falling ill, losing their jobs, suffering injuries at work or falling pregnant, in the absence of widespread social insurance, they have the option of returning to their hometown, which acts as a safety net. Evidence from interviews with off-farm migrants suggest that confronted with shocks to the homeostatic mechanism from such life events, this is the recourse that many adopt. Once they have had time to recover from life shocks, many off-farm migrants will return to the cities for further spells (Li, 2006, 2008; Wong & Zheng, 2008). Moreover, the sense of belonging and community that off-farm migrants enjoy in the countryside very likely reinforce the neuro-psychological mechanisms that underpin the homeostatic mechanism.

## 5. CONCLUSIONS

While objective indicators would suggest that off-farm migrants lead hard lives, the participants in this study appear to be fairly satisfied with their lives. The PWI demonstrated good reliability, validity and sensitivity and the PWI score fell within the normative range for non-Western societies. The PWI score is similar in magnitude to that found for local urban residents in China, Hong Kong and Macau, although on objective measures, those with an urban *hukou* in China and, *a fortiori*, those living in Hong Kong and Macau, have a higher quality of life than Chinese off-farm migrants. This finding is consistent with the 'Theory of Subjective Wellbeing Homeostasis'. It has been argued that the circular nature of migration provides a buffer to life shocks for Chinese off-farm migrants that might otherwise impede their life satisfaction and maintains the homeostatic mechanism within a narrow band.

The study contains some limitations. While it has been argued that participants are broadly representative of off-farm migrants in China, the sample is restricted to one province. Further research is needed to ascertain whether the results are generalizable to other locales. Second, Davey *et al.*, (2008) highlighted the difficulties inherent in administering surveys in China where the populace is less exposed to survey methods than participants in Western countries. These issues are compounded in studies such as the present one in which some of the sample are semi-literate or illiterate and may have different conceptions of some of the domains, such as satisfaction with health. Having said this, the PWI showed good cross-cultural equivalence in this sample. Third, the survey did not include satisfaction with religion/spirituality, which has only been one of the domains of the PWI since November, 2006 (International Wellbeing Group, 2006). Despite these limitations, this study is important as it is the first study to administer the PWI to a sample of Chinese off-farm migrants. The results provide strong evidence that the homeostatic mechanism is resilient and that it holds for a group of people who endure relatively harsh socioeconomic conditions in China's cities.

## REFERENCES

- Agence France Presse (AFP) (2008). Very few migrant workers are happy: report. Agence France Presse, 14 January, 298 words.
- Appleton, S. and Song, L. (2008). Life satisfaction in urban China: Components and determinants. *World Development* (in press).
- Bechtel, M. (2004). China's unions take on the challenge of change (part 2): Migrant workers and building the future. *The Guardian*, 29 September, 14.
- Beijing Review. (2003). Laboring Over Workers' Rights. Vol. 46, No. 52, 46-47.
- Bo, H. and Cheng, H. (2004). Wages racing to the bottom: A migrant worker's nightmare. *Southern Labour News*, 29 July.
- Chang, K. (1998). A survey and investigation of unemployment and reemployment of female employees in state-owned enterprises. *Chinese Sociology and Anthropology*, 30, 28-51.
- Chen, C. (2003). Revisiting the disengagement theory with differentials in the determinants of life satisfaction. *Social Indicators Research*, 64, 209-224.
- Chen, Z. and Davey, G. (2008a). Happiness and subjective well-being in Mainland China. *Journal of Happiness Studies*, 9, 589-560.
- Chen, Z. and Davey, G. (2008b). Subjective quality of life in Zhuhai City, South China: A public survey using the International Wellbeing Index. *Social Indicators Research* (in press).
- Chen, Z. and Davey, G. (2008c). Normative life satisfaction in Chinese societies. *Social Indicators Research* (in press).
- China Daily (2003). Helping migrants belong in cities. China Daily, 28 November.
- Cummins, R.A. (1998). The second approximation to an international standard of life satisfaction. *Social Indicators Research*, 35, 179-200
- Cummins, R.A., Eckersley, R., Lo, S.K., Okerstrom, E., Hunter, B. and Davern, M. (2004) *Australian Unity Wellbeing Index: Cumulative Psychometric Record* Cummins. Australian Centre on Quality of Life, School of Psychology, Deakin University, Australia.
- Cummins, R.A., Eckersley, R., Pallant, J., van Vugt, J. and Misajon, R. (2003). Developing a national index of subjective wellbeing. The Australian Unity Wellbeing Index. *Social Indicators Research*, 64, 159-190.
- Cummins, R.A., Gullone, E. and Lau, A. (2002). A model of subjective wellbeing homeostasis: The role of personality. In A. Michalos (ed.), *Social Indicators Research Series* 16. Kluwer Academic Publishers: Dordrecht, pp. 7-46.
- Cummins, R.A. and Nistico (2002). Maintaining life satisfaction: The role of cognitive bias. *Journal of Happiness Studies*, 3, 37-69.
- Davey, G., Chen, Z. and Lau, A. (2008). 'Peace in a thatched hut – that is happiness': Subjective wellbeing among peasants in rural China. *Journal of Happiness Studies* (in press).

- Edwards, G., Bangert, A., Cooch, G., Shinfuku, N., Chen, T., Bi, Y and Rappe, T. (2005). The impact of sibling status on Chinese college students' quality of life. *Social Behavior and Personality*, 33, 227-242.
- Fan, C. and Wang, W. (2008). The household as security: Strategies of rural-urban migrants in China. In I. Nielsen and R. Smyth (Eds.) *Migration and Social Protection in China*. Singapore: World Scientific.
- Feng, W., Zuo, X. and Ruan, D. (2002). Rural migrants in Shanghai: Living under the shadow of socialism. *International Migration Review*, 36, 520-545.
- Guang, L. and Zhang, L. (2005). Migration as the second best option: Local power and off-farm employment. *China Quarterly*, 181, 22-45.
- Huang, I, and Xing, Z. (2005). An initial research on the wellbeing index applied to citizens in China. *Chinese Journal of Behavioral Medical Science*, 114, 464-465.
- International Labour Organization (ILO) 2007. Internal labor migration in China: Features and responses. Geneva: International Labour Organization.
- International Wellbeing Group. (2006). *Personal Well-being Index* 4<sup>th</sup> Edition. Melbourne: Australian Centre on Quality of Life, Deakin University.
- Jacka, T. (2005). Finding a place: Negotiations of modernization and globalization among rural women in Beijing. *Critical Asian Studies*, 37(1), 51-74.
- Knight, J. and Gunatilaka, R. (2007). Great expectations? The subjective well-being of rural urban migrants in China. Department of Economics, University of Oxford, Discussion Paper No. 332.
- Knight, J. and Gunatilaka, R. (2008). Aspirations, adaption and subjective well-being of rural-urban migrants in China. Department of Economics, University of Oxford, Discussion Paper No. 381.
- Knight, J., Song, L. and Gunatilaka, R. (2008). Subjective well-being and its determinants in rural China. *China Economic Review* (in press).
- Laid-off Workers (1998). Face or money? That's the question for laid-off Beijing workers. China News Digest, March 18.
- Lau, A., Cummins, R.A. and McPherson, W. (2005). An investigation into the cross-cultural equivalence of the Personal Well-being Index. *Social Indicators Research*, 75, 403-430.
- Lau, A., Chi, I., Cummins, R.A., Lee, T.M.C., Chou, K.L. and Chung, L.W.M. (2008). The SARS (Severe Acute Respiratory Syndrome) pandemic in Hong Kong: Effects on the subjective wellbeing of elderly and younger people. *Aging & Mental Health*, 12, 746-760.
- Lee, C.K. (1999). From organized dependence to disorganized despotism: Changing labour regimes in Chinese factories. *China Quarterly*, 157, 44-71.
- Li, B. (2006). Floating population or urban citizens? Status, social provision and circumstances of rural-urban migrants in China. *Social Policy & Administration*, 40(2), 174-195.

- Li, B. (2008). Why do migrant workers not participate in urban social insurance schemes? The case of the construction and service sectors in Tianjin. In I. Nielsen and R. Smyth (Eds.) *Migration and Social Protection in China*. Singapore: World Scientific.
- Li, J. (2005). China Says "No" to Bias Against Migrant Farmer Workers'. *China Daily*, 24 September, p. 3.
- Macau Inter-University Institute (2007). *Macau Quality of Life Report 4*. Macau: Macau Inter-University Institute.
- Nielsen, I., Li, J.J., Shen, J. and Smyth, R., (2007). Effects of intergroup contact of Chinese off-farm migrants' attitudes to local workers. In George T. Solomon (Ed.), *Proceedings of the Sixty-Sixth Annual Meeting of the Academy of Management*, Philadelphia.
- Nielsen, I. and Smyth, R. (2007). Better city, better life: For whom? In I. Nielsen, R. Smyth and M. Vicziany (Eds.) *Globalisation and Labour Mobility in China*. Melbourne: Monash University Press.
- Nielsen, I., Smyth, R. & Zhang, M. (2006). Unemployment within China's floating population: Empirical evidence from Jiangsu survey data. *Chinese Economy*, 39, 41-56.
- Renn, D., Pfaffenberger, N., Platter, M., Mitmansgruber, H., Cummins, R.A. and Hofer, S. (2009). International Well-being Index: The Austrian version. *Social Indicators Research*, 90, 243-256.
- Roberts, K. (2001). The determinants of job choice by rural labor migrants in Shanghai. *China Economic Review*, 12(1), 15-39.
- Smyth, R., Mishra, V. and Qian, X. (2008). The environment and well-being in urban China. *Ecological Economics*, 68, 547-555.
- Smyth, R., Nielsen, I. and Zhai, Q. (2009). Personal well-being in urban China. Mimeo, Monash University, Australia.
- Smyth, R. and Qian, X. (2008). Inequality and happiness in urban China. *Economics Bulletin*, 4(23), 1-10.
- Solinger, D. (1999). *Contesting Citizenship in Urban China: Peasant Migrants, the State and the Logic of the Market*. Berkeley, CA: University of California Press.
- Song, L. and Appleton, S. (2008). Social protection and migration in China: What can protect migrants from economic uncertainty? In I. Nielsen and R. Smyth (Eds.) *Migration and Social Protection in China*. Singapore: World Scientific.
- Tao, Z. (2006). China's migrant workers. Address to the National Social Administration Workshop, Beijing, August.
- Tabachnick, B. G., & Fidell, L. (2005). *Using Multivariate Statistics* (5th edition ed.): Pearson.
- Tiliouine, H., Cummins, R.A. and Davern, M. (2006). Measuring well-being in developing countries: The case of Algeria. *Social Indicators Research*, 75, 1-30.
- Wong, L. and Zheng, G. (2008). Getting by without state-sponsored social insurance. In I. Nielsen and R. Smyth (Eds.) *Migration and Social Protection in China*. Singapore: World Scientific.

- Wu, W. (2002). Migrant housing in urban China: Choices and constraints. *Urban Affairs Review*, 38, 90-119.
- Wu, W. (2004). Sources of Migrant Housing Disadvantage in China. *Environment and Planning A*, 36, 1285-1304.
- Xu, J., Wang, M., Xiang, Y., & Hu, X. (2006). Quality of life for people with intellectual disabilities in China: A cross-culture perspectives study. *Journal of Intellectual Disability Research*, 49, 745-749.
- Yan, H. and Sellick, K. (2004). Quality of life of Chinese patients newly diagnosed with gastrointestinal cancer: A longitudinal study. *International Journal of Nursing Studies*, 41, 309-319.
- Zhu, Y. (2003). The floating population's household strategies and the role of migration in China's regional development and integration. *International Journal of Population Geography*, 9(6), 485-502.
- Zhu, Y. (2007). China's floating population and their settlement intention in the cities: Beyond the hukou reform. *Habitat International*, 31(1), 65-76.