

Emotional Attachment, Residential Satisfaction, and Mobility Propensity

情感依附與居住滿意對臺灣民眾 遷移意向之影響

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Abstract

Drawing on J. Wolpert's stress-threshold notion, Speare and his associates have proposed a mobility decision-making model in which residential satisfaction serves as a mediating variable between background characteristics and mobility propensity and behavior. Several studies have employed this residential satisfaction model to further examine mobility desire, expectation, adjustment, and behavior. There is no consensus, however, about the intervening role of residential satisfaction in the mobility decision-making process. With respect to background variables, few have taken into account the influence of sentiment or emotional attachment on mobility decision making. This study attempts to examine the intervening effect of residential satisfaction on mobility propensity in Taiwan by using an island-wide sample. The following research questions are addressed: (1) To what extent and how does residential satisfaction mediate the effects of background

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characteristics on mobility propensity? (2) To what extent does the residential satisfaction model need to take emotional attachment into account?

The data for this study are drawn from a larger project titled “Image of Urban Life, Residential Environment and Residential Selection”. A total of 4,379 complete questionnaires were obtained for analysis. Ordinal and binomial logistic regressions were employed to estimate the residential satisfaction models. Results of this study indicate that residential satisfaction and emotional attachment are strong predictors of mobility propensity. The intervening role of residential satisfaction, however, was not fully supported. The individual/household characteristics of age, marital status, presence of children, educational level, and household income were found to have significant direct association with mobility propensity. These results are summarized and discussed below.

Key Words: emotional attachment, residential satisfaction, mobility propensity, residential satisfaction model

摘 要

提升居住滿意為影響遷移意向與行為之重要誘因，Speare 與其同僚發展出遷移研究之居住滿意模型，該模型假設居住滿意為影響個人及家戶背景因素與遷移之中介變項；傳統遷移研究中扮演重要角色的個人及家戶背景因素之解釋力則因居住滿意之影響而大幅降低。然而後續引用此一居住滿意模型之遷移研究結果並不一致；同時，背景變項中考慮了居住時間，社會網絡等具體社區依附事實，卻忽略了情感層面的依附性亦可能影響遷移意向與行為。本論文企圖檢視考量了情感依附因素之居住滿意模型對於臺灣地區遷移意向之影響。

本研究欲探討之問題為：(1) 居住滿意在遷移決策過程所扮演的角色為何？(2) 情感依附對於遷移意向之影響程度如何？分析之資料取自中央研究院章英華教授與臺灣大學陳東昇教授所主持之「都市意向、居住環境與居住選擇」研究計畫，以抽樣選取之臺灣地區居民為研究對象，共選取了 4,379 位受訪者的資料作為分析樣本，並採用順序性邏輯迴歸 (Ordered Logistic Regression) 以及二元邏輯迴歸 (Binomial Logistic Regression) 作為主要的統計分析方法。

研究結果指出，較高的居住滿意度減低遷移意向與規劃之可能性，而在個人及家戶背景因素方面，年齡、婚姻狀況、有無小孩、教育程度與家戶收入則對於遷移意向與規劃有顯著影響，較高的情感依附亦可能降低遷移意願。研究結果無法充分證實居住滿意可以改變個人及家戶背景因素對於遷移意向之影響效果的假設，但另一方面則指出個人特質與情感依附在遷移的決策過程中扮演較重要之角色。本研究並針對結果進行討論。

關鍵字：情感依附、居住滿意、遷移意向、居住滿意模型

I. INTRODUCTION

The desire for greater residential satisfaction is an important motive in the migration decision-making process. Greater satisfaction with housing and with the community or residential environment has been found to contribute to reducing the propensity to move (DeJong 1980; Michalos 1996; Newman and Duncan 1979; Speare *et al.* 1982; Stinner and Van Loon 1992; Varady 1983). Drawing on J. Wolpert's (1965, 1966) stress-threshold notion, Speare and his associates (Speare 1974; Speare *et al.* 1975) proposed a mobility decision-making model in which residential satisfaction serves as a mediating variable between background characteristics (hereafter called structural factors) and mobility propensity and behavior (see McHugh *et al.* 1990). Speare's model goes against tradition by discounting the effects of background variables, such as individual and household characteristics and social bonds.

Several studies employed the mobility model (also known as the residential satisfaction model) to further examine mobility desire, expectation, adjustment, and behavior (Bach and Smith 1977; Landale and Guest 1985; Lee *et al.* 1994; McHugh *et al.* 1990; Speare *et al.* 1982). There is no consensus, however, regarding the intervening role of residential satisfaction in the mobility decision-making process. Contrary to the model's predictions, background variables, such as age and education, remain influential factors affecting mobility propensity and behavior. Whether such structural factors have direct or merely indirect effect on mobility propensity when residential satisfaction serves as a mediating variable needs further examination.

Attachment to a place is often an essential background variable or structural factor. Physical attachment, such as owning a house or longer duration of residence, and social bonds, such as the presence of known relatives and friends, are seen as financial and social commitments to local communities that might restrict individuals'

decisions to leave (Bach and Smith 1977; Deane 1990; Speare *et al.* 1982). Few studies, however, have taken into account the influence of sentiment or emotional attachment on mobility decision making. Attachment to a place can be understood as a sense of “insiderness” (Rowles 1990: 107), which involves “an intimate involvement with a place that is grounded in personal history and qualitatively differentiates this place from space outside.” Emotional attachments to local communities have been shown to influence mobility propensity (Beggs *et al.* 1996; Goudy 1990). It is thus meaningful to include sentiment-related measures of attachment in the mobility model.

This study uses an island-wide sample to examine the intervening effect of residential satisfaction on mobility propensity in Taiwan. Emotional attachment is included in the mobility decision-making model, in addition to measures of physical attachment to a place. The following research questions are addressed:

- (1) To what extent and how does residential satisfaction mediate the effects of background characteristics on mobility propensity?
- (2) To what extent should the residential satisfaction model take emotional attachment into account?

The following section includes a theoretical review of a residential satisfaction model. Descriptions of data sources and the measurement of variables follow. Results of multivariate analysis of evidence for the above research questions are presented. The paper concludes with a discussion of implications for mobility research.

II. THEORETICAL BACKGROUND OF RESIDENTIAL SATISFACTION MODEL

Determinants of mobility propensity have been broadly addressed in migration studies. In general, the literature has demonstrated the important impact of residential satisfaction on the mobility decision-making process (Bach and Smith 1977; DeJong 1977, 1980; DeJong and Fawcett 1981; Heaton *et al.* 1979; Landale and Guest 1985; Rhoda 1983; Speare 1974; Speare *et al.* 1982; Stinner and Van Loon 1992). Speare and his associates (1974, Speare *et al.* 1975) proposed that residential satisfaction is the proximate determinant of the decision to consider moving (Landale and Guest 1985); under this model, satisfaction serves as an intervening variable to mediate the effects of background characteristics or structural factors in the process of mobility decision making. These background or structural variables include characteristics of individual, household, and residential location, and attachment to the home and local community. Unlike the consistent relation between a wish to move and mobility behavior found in the empirical studies, background variables, such as age, income, and crowdedness were found to operate indirectly through residential satisfaction in the mobility model.

Empirical studies employing this residential satisfaction model, however, have failed to reach a consensus. Bach and Smith (1977) elaborated the residential mobility model and applied it to inter-county migration by using survey data and a mobility follow-up over eight years. Their findings generally support Speare's residential satisfaction model, when the interaction of residential satisfaction and expectation to migrate has been taken into account. Residential satisfaction in the community was found to be the dominant background characteristic.

By the same token, Speare *et al.* (1982) used panel data to examine the view

that mobility propensity is inhibited by satisfaction with one's job and place of residence, as well as by social bonds. The study, however, failed to confirm the expected strong effect of satisfaction with job and community on mobility propensity. Furthermore, contrary to the model's predictions, duration of residence and education of household head had significant direct, rather than indirect, effects on migration. Building upon the work of Speare and others, Landale and Guest (1985) assessed the extent to which satisfaction and constraints, in particular, mediate the effects of background characteristics and attachment to community on mobility. While satisfaction was found to be a strong predictor of thoughts about moving, it had only an indirect effect on actual mobility. Also, satisfaction variables had little influence in mediating the effects of background or structural variables on mobility thoughts and behavior.

Instead of using one indicator or a composite index to represent residential satisfaction, McHugh *et al.* (1990) distinguished housing and neighborhood satisfaction as intervening variables in the mobility satisfaction model, with a focus on a time-dependent perspective of home owners and renters. Unlike results in one previous study using a similar strategy (see Speare *et al.* 1975), background variables were found to have direct effects on mobility, particularly for renters. The intervening role of residential satisfaction was not consistently significant in the mobility decision-making process when short-term and long-term mobility expectations were taken into account.

The residential satisfaction model has been reconsidered by addressing the role of adjustment as an additional mediating variable in the decision-making process (Deane 1990). Adjustment is viewed as an alternative to moving, with moving generally seen as a response to residential stress. Individuals or households may reduce dissatisfaction through physical or emotional adjustment and, as a result, not consider moving (Bach and Smith 1977; Deane 1990; Landale and Guest 1985;

Speare 1974). The insignificant effect of adjustment on mobility, however, implies that it may be unrelated to residential stress. Also, employing separate indicators for housing and neighborhood aspects of residential satisfaction, Deane (1990) found that the predicted degree of mobility propensity related to neighborhood satisfaction was higher than that attributable to housing satisfaction.

Adopting a revised mobility decision-making model, Lee *et al.* (1994) used a cross-level design to examine the importance of contextual factors as well as individual/household characteristics. Their findings indicate background variables that reflect life cycle and housing circumstances are important factors influencing mobility propensity and behavior. The role of neighborhood context in individual mobility behavior appears to be limited. In a similar vein, the impact of perceptions of housing and of neighborhood problems were tested in the mobility model, in addition to satisfaction, as mediating effects between background variables and actual mobility (Newman and Duncan 1979; Varady 1983). The impact of background characteristics on mobility mediated by satisfaction, however, was not clear. Neither was the explanatory power of residential satisfaction in the mobility decision-making process.

As previous studies have indicated, background characteristics retain their influential role in the mobility decision-making process even when the intervening effects of residential satisfaction or contextual factors are considered. With respect to these background or structural variables, a network dimension of attachment, as indicated by proportions of a subject's friends and relatives in a local community and duration of residence, has been demonstrated to be an important determinant of mobility propensity and behavior. The influence of the emotional dimension of attachment to place in the process of mobility decision making, however, has seldom been examined.

Emotional attachment to local community has been found to have direct effects on migration (Heaton *et al.* 1981; Humphrey and Wilkinson 1993; Liao 2001). Emotional attachments to local communities, which reflect a sense of rootedness or feeling at home, contribute to a strong desire to live in certain places and/or reluctance to move (Beggs *et al.* 1996; Goudy 1990). In addition, emotional attachment has been associated with community satisfaction (Austin and Baba 1990; Liao 2001; St. John *et al.* 1986). In Austin and Baba's study of the relation between community satisfaction and attachment, satisfaction with residential environment was found to be positively associated with emotional attachment to the community, when controlling for sociodemographic variables. Using the neighborhood as the level of analysis, St. John *et al.* (1986) also found that satisfaction with residential environment is strongly associated with emotional attachment to a place. The results of these studies reveal a close association between community attachment and residential satisfaction.

Although residential and community satisfaction have often been viewed as indicators of community attachment (Beggs *et al.* 1996; Connerly and Marans 1985; Goudy 1982; O'Brien *et al.* 1994; St. John *et al.* 1986; Wasserman 1982) and have been used synonymously with emotional attachment, they are fundamentally different. Residential satisfaction is a cognitive dimension in which availability of medical services and economic opportunities in a local place, for example, are considered. Emotional attachment, on the other hand, is an affective dimension of community life (St. John *et al.* 1986). In this study, emotional attachment is expected to have a significant association with residential satisfaction and, in turn, influence mobility propensity.

This paper develops a residential satisfaction model that includes emotional attachment (Figure 1). Because there is often a discrepancy between desire or expectation to move and actual moving behavior (e.g. Deane 1990; Lee *et al.* 1994;

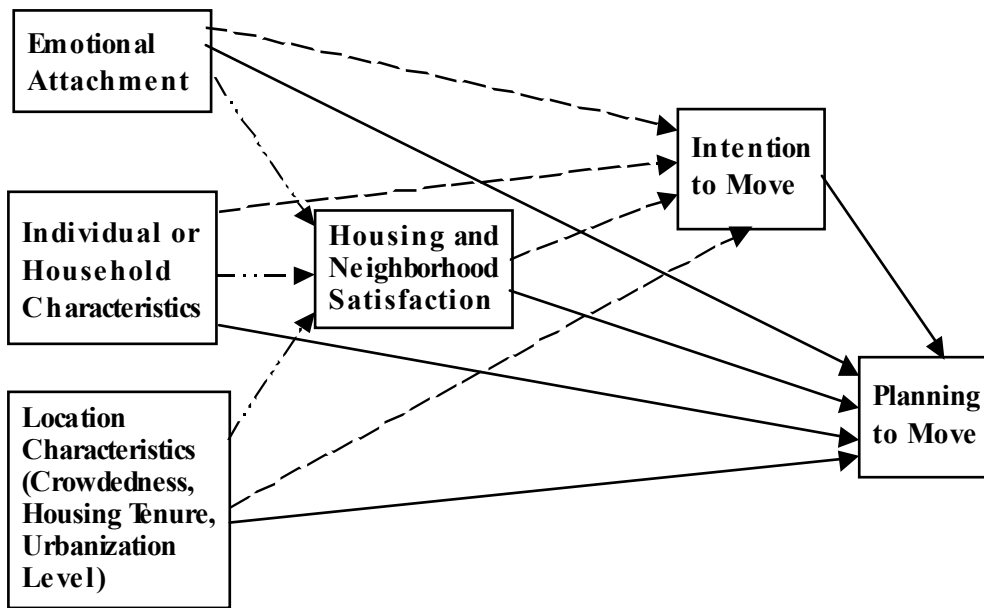


Figure 1 Residential Satisfaction Model

Speare 1974; Speare *et al.* 1982), it is reasonable to include measures of mobility propensity at distinguishable levels instead of moving behavior. Therefore, this model agrees with the residential satisfaction model in assuming that planning to move is a function of intention to move, because the making of a moving plan reflects an individual's serious thinking about moving (see Landale and Guest 1985). This paper examines the determinants of individuals' mobility propensity in Taiwan. Residential satisfaction is hypothesized as an intervening variable in the mobility decision-making process, while the direct and indirect effects of individual and household characteristics and attachment to place are examined. In Figure 1, the lighter dotted lines represent the indirect effects of background variables on mobility propensity with residential satisfaction intervening. Darker dotted lines represent the effects of background variables and residential satisfaction on planning to move,

as mediated by intention to move. Solid lines represent the direct effects of background variables, residential satisfaction, and intention to move on planning to move.

III. RESEARCH METHODS

The data for this study were drawn from a larger project titled "Image of Urban Life, Residential Environment, and Residential Selection" (Chang and Chen 1996).¹ The project addresses a number of important issues, including life history, rural-urban image, sources of life stress, evaluation of metropolitan areas, residential choice, mobility propensity, and the influence of urbanization. After selecting study sites based on the level of urbanization, household surveys were delivered in 1994 to randomly selected individuals within each selected municipality. A total of 4,379 completed questionnaires were obtained, for an overall response rate of 44 percent.

Two different types of mobility propensity served as dependent variables. *Intention to move* is measured by a question about the likelihood that the respondent will move out of his/her current residence (coded as 1=very unlikely; 2=unlikely; 3=likely; and 4=very likely), and *planning to move* by whether the respondent had plans to move out of his/her current residence (coded as 1=had been planning and 2=no such plan). Measures of residential satisfaction are included in the mobility propensity model as an intervening variable. The indicators of residential satisfaction include satisfaction with the general environment of the current neighborhood and current housing, coded as being (1) very dissatisfied; (2) dissatisfied; (3) satisfied; and (4) very satisfied.

¹ This research project was carried out by Academia Sinica's Institute of Ethnology and directed by Dr. Chang Ying-hwa and Dr. Chen Dung-sheng. The Center for Survey Research of Academia Sinica is responsible for the data distribution. The author is grateful for the aforementioned institutes' and individuals' provision of data.

Characteristics of the individual and/or household are used as background variables. Individual/household characteristics include age (1=21-30 years old; 2=31-40 years old; 3=41-50 years old; and 4=51-65 years old), gender (0=female; 1= male), marital status (0=separated/divorced/single/widowed; 1=married or living with a partner but not married), and presence of children (0=no child; 1=having one or more children). Age, marital status, and presence of children often reflect individuals' life cycle (see Harbison 1981). The categories of the respondents' educational level are coded as follows: (1) elementary school or less; (2) junior high school or equivalent; (3) senior high school or equivalent; (4) associate/college degree or equivalent; and (5) graduate or professional training beyond college. Age and educational levels are treated as dummy variables, with those between the ages of 51 and 65 and those with graduate or professional training beyond college as the reference categories. Household income categories are regrouped to indicate annual income, coded as follows: (1) US\$7,999 or under; (2) US\$8,000 to US\$11,999; (3) US\$12,000 to US\$15,999; (4) US\$16,000 to US\$23,999; (5) US\$24,000 or more.² The highest income category is used as the reference category for the dummy variables.

Because the mobility propensity of people with previous moving experience is distinguishable from that of people who never moved (DaVanzo 1983), a dummy variable was created to control nativity status (coded as 1=lifetime resident and 0= non-lifetime resident). Housing tenure is measured as a dummy variable (1=owner and 0=renter or others), which helps avoid the problem of collinearity between age and length of residence. Crowdedness is measured by three indicators. Size of current housing is measured in *ping*, a commonly used unit of space.³ Housing and neighborhood crowdedness are measured by the questions of whether small houses or crowded

² At the time, one U.S. dollar was worth 30 New Taiwan dollars. Per capita GNP in Taiwan was US\$11,613.

³ One *ping* equals 3.3058 square meters.

neighborhood made the respondent feel uncomfortable, coded as being (1) never; (2) sometimes; and (3) often. Finally, the urbanization level of residence was defined for each community.⁴ The three lowest levels of urbanization were used to represent rural communities, while the remaining communities were classified as urban in this study. A dummy variable was created to represent urbanization level (0=urban; 1=rural).

Measures of emotional attachment are included as background variables to examine their effects on mobility propensity. Responses to questions that asked how well a respondent likes his/her current residential place (coded as 1=strongly dislike; 2=dislike; 3=like; and 4=strongly like) and how much she/he would miss the place they currently live in if she/he were to move (coded as 1=not at all; 2=possibly not; 3=possibly miss it; and 4=absolutely miss it) are also used as indicators of emotional attachment.

Ordinal logistic regression is employed to estimate the models of intention to move, because of the ordinal scale of the dependent variable. Characteristics of individual, household, and location are used in an initial step. Indicators of emotional attachment are included, as well, to examine their effects on intention to move. In the second step, residential satisfaction is added to examine its mediation of the relationship between background or structural factors and intention to move. In order to further examine the determinants of a more advanced mobility propensity—planning to move—binomial logistic regression is employed. Using the same strategy, background variables are first included in the planning-to-move model. Residential satisfaction measures are added later to examine its mediating effects. Finally,

⁴ The urbanization level for each of the 309 provincial municipalities was defined by using 12 indicators from 1986 secondary data (including demographic characteristics, industry structure, public services, and fiscal condition). See Lee 1990.

intention to move is added to complete the mobility propensity model.

IV. RESULTS

1. Description of Mobility Propensity and the Determinants

Descriptive results of individual/household variables, location characteristics, and emotional attachment are reported in Table 1. The average age of the respondents

Table 1 Description of Determinants of Mobility Propensity

Variables	Mean/Percentage
Individual/household Characteristics	
Age (N=4,379)	39.6
- 21-30	9.5%
- 31-40	36.2%
- 41-50	41.2%
- 51-65	13.1%
Gender (N=4,379)	
- Male	47.8%
- Female	52.2%
Marital status (N=4,379)	
- Married/Living with partner	76.0%
- Single/Divorced/Separate/Widowed	24.0%
Presence of children (N=4,379)	
- Having one or more children	78.2%
- No child	21.8%
Educational level (N=4,350)	
- Elementary school or less	35.7%
- Junior high school or equivalent	16.4%
- Senior high school or equivalent	26.3%
- Associate/college degree or equivalent	20.1%
- Graduate or professional training beyond college degree	1.5%
Annual household income in U.S. dollars (N=3,924)	
- \$ 7,999 or under	21.2%
- \$ 8,000 to \$11,999	22.3%
- \$12,000 to \$15,999	23.9%
- \$16,000 to \$23,999	22.2%
- \$24,000 or more	10.4%

Table 1 Description of Determinants of Mobility Propensity (cont.)

Variables	Percentage
Nativity status (N=4,379)	
- Lifetime residents	15.4%
- Non-lifetime residents	84.6%
Urbanization level of residence (N=4,379)	
- Rural	21.4%
- Urban	78.6%
Housing tenure (N=4,362)	
- Owner	55.0%
- Renter or others	45.0%
Housing crowdedness (N=4,297)	
- Never	61.7%
- Sometimes	25.3%
- Often	13.0%
Neighborhood crowdedness (N=4,283)	
- Never	64.9%
- Sometimes	21.6%
- Often	13.5%
Housing size (N=4,269) (Mean/S.D.)	43.12 (41.9904)
Emotional attachment	
Liking current place of residence	
- Strongly dislike	1.0%
- Dislike	12.3%
- Like	71.6%
- Strongly like	15.1%
Would miss current place if moved	
- Not at all	3.3%
- Probably not	9.2%
- Probably miss it	35.1%
- Definitely miss it	52.4%
Residential satisfaction	
Housing satisfaction	
- Very dissatisfied	1.9%
- Dissatisfied	20.5%
- Satisfied	64.8%
- Very satisfied	12.8%
Neighborhood satisfaction	
- Very dissatisfied	2.9%
- Dissatisfied	26.2%
- Satisfied	62.0%
- Very satisfied	8.9%

was 39.6, while more than half of them were 41 or older. The proportion of men to women was balanced in this sample, reflecting the sampling strategy, with 47.8 percent of respondents male. With respect to life-cycle variables, 76 percent were married or living with a partner and 78 percent had one or more children. Because the educational system formerly did not require children to enroll in junior high school, more than one-third of the respondents had not completed more than elementary school education (35.7 percent) and; about 21.6 percent of the respondents had associate/college degrees or professional training. The household income levels of these respondents were evenly distributed, with slightly more than 20 percent of the respondents in each of the four income categories below US\$24,000. Higher incomes were reported by a disproportionately lower proportion of respondents, with around 10 percent indicating a household income of US\$24,000 or more.

Of the survey sample, only 15.4 percent of the respondents were lifetime residents of local communities. About one-fifth (21.4 percent) of the respondents were classified as rural residents. More than half of the respondents indicated that they owned their current residence. In addition, similar proportions of respondents reported that small houses or crowded neighborhoods never made them uncomfortable, about 62 percent and 65 percent, respectively. The average housing size indicated by these respondents was 43.12 *pings*, widely dispersed (S.D.= 41.99).

When the respondents were asked how they felt about the place in which they currently lived, only 13.3 percent indicated any degree of dislike. Indeed, about 72 percent indicated that they liked, and 15 percent strongly liked, their current residences. If they had to move to another community, 87.5 percent indicated that they would miss the places in which they currently lived. In terms of residential satisfaction, about 65 percent of respondents indicated that they were satisfied and about 13 percent that they were very satisfied with their houses. In addition, 62

percent of the respondents indicated that they were satisfied and 8.9 percent that they were very satisfied with their neighborhood.

Two measures of mobility propensity are cross-tabulated in Table 2, revealing a clear association of intention to move with having a moving plan. Respondents who reported they were likely to move were more likely to have a moving plan than those who said they were unlikely to move. Chi-square tests as well as other symmetric measures indicate a significant association between the two measures of mobility propensity.

Table 2 Cross Tabulation of Mobility Propensity (N=4,358)

Intention to Move	Moving Plan	
	Had been planning	No such plan
Very unlikely	0.5%	99.5%
Unlikely	3.7%	96.3%
Likely	28.2%	71.8%
Very likely	66.0%	34.0%
Total	941	3,417
Pearson chi-square (d.f)	1118.09*** (3)	
Phi and Cramer's V	.507***	
Gamma	.842***	

***: $p < .001$

2.Ordinal Logistic Regression of Intention to Move

To examine the moving intention model, the models began by independently testing direct effects of residential satisfaction, emotional attachment, and characteristics of individual/household and location on moving intention (Table 3). Both measures of residential satisfaction were directly associated with intention to move; less satisfaction with housing or neighborhood was found to have a significant association with the intention to move. People who liked their current places of

Table 3 Ordinal Logistic Regression Models on Intention to Move (N=3,632)

Variables	Logit Coefficients			
	(1)	(2)	(3)	(4)
Intercept 1	-4.86***	-5.82***	-2.63***	-5.71***
Intercept 2	-2.71***	-3.64***	-.10	-3.14***
Intercept 3	-.54**	-1.43***	2.35***	-.60
Residential Satisfaction				
Housing satisfaction				-.36***
Neighborhood satisfaction				-.07
Emotional Attachment				
Liking current place			-.68***	-.36***
Missing current place if moved			-.41***	-.15**
Individual/household Characteristics				
Age				
- 21-30			1.02***	.92***
- 31-40			.93***	.84***
- 41-50			.74***	.68***
- 51-65 ^a				
Gender (1=Male)			.08	.07
Marital status (1=Married/Living with partner)			.08	.03
Presence of children (1=Having one or more children)			.27*	.28*
Educational level				
- Elementary school or less			-1.02***	-.98***
- Junior high school or equivalent			-.58*	-.56*
- Senior high school or equivalent			-.17	-.16
- Associate/college degree or equivalent			.12	.15
- Graduate or professional training beyond college ^a				
Household income (in U.S. dollars)				
- \$ 7,999 or less			-.53***	-.63***
- \$ 8,000 to \$11,999			-.50***	-.57***
- \$12,000 to \$15,999			-.10	-.14
- \$16,000 to \$23,999			-.16	-.22†
- \$24,000 or more ^a				
Location Characteristics				
Nativity status (1=Lifetime resident)			-.56***	-.49***
Urbanization level of residence (1=Rural)			-.24**	-.24**
Housing tenure (1=Owner)			-.88***	-.80***
Housing crowdedness			.28***	.18**
Neighborhood crowdedness			.11†	.05
Housing size			-.00**	-.00**
Pseudo R ²	.06	.08	.23	.27

^a Reference category of the dummy variable.

†: p < .10; *: p < .05; **: p < .01; ***: p < .001.

residence were less likely to intend to move than those who did not. Also, the respondents who said they would miss the place if they moved had less propensity to move than their counterparts. These two indicators of emotional attachment explained more variance in moving intention than did residential satisfaction (by 2 percent).

The third model examined the direct effects of individual/household variables and location characteristics on intention to move. All of the variables had significant effects on moving intention except for gender and marital status. With respect to individual/household characteristics, respondents who were younger and those who had one or more children were more likely to intend to move than their counterparts. On the other hand, respondents whose education was limited to elementary school or less, and those who reported annual household incomes of US\$11,999 or less, were less likely to intend to move than their counterparts. For location characteristics, those who were lifetime residents, living in rural areas, those who owned their current residence, and those whose houses were larger, were less inclined to move than their counterparts. However, those who viewed small housing and crowded neighborhoods (significant at .10 level) as problems were more likely to intend to move than those who did not. These individual/household and location characteristics explained 23 percent of the variance in moving intention.

The full moving intention model is presented in the last column of Table 3. As an intervening variable, the measures of residential satisfaction were not a strong predictor of intention to move, although they mediated the effects of background or structural factors on moving intention slightly. The effect of neighborhood satisfaction failed to reach significance, while that of housing satisfaction became weaker in the full model. The previous model's significant association between background or structural factors and intention to move was upheld. The influence of emotional attachment on intention to move was remarkably smaller when residential satisfaction

and other background factors were taken into account.

In addition, the effects of age and educational level were slightly decreased, while that of household income was slightly increased in the full moving intention model. The effects of location characteristics decreased as well, when residential satisfaction intervened in the moving intention model. Although the intervening role of residential satisfaction was demonstrated in the full model, its predicted strong effects on mobility propensity were not fully supported. The analyses of the moving-plan models follow.

3. Binomial Logistic Regression of Moving Plans

As indicated in Figure 1, determinants of having a moving plan were examined step by step (from left to right). Because of the focus on uncovering the influence of emotional attachment on mobility propensity, the association between emotional attachment and having a moving plan was examined first. Results indicated that both measures of emotional attachment were inversely related to having a moving plan (Table 4). In other words, those who liked their current places of residence were less likely to have a plan to move than those who did not. Also, the respondents who reported they would miss the place if they moved were less likely to plan a move than their counterparts. Characteristics of individual/household and location were included in the following analysis.

With respect to the individual/household variables age, marital status, presence of children, and household income were found to have significant effects on making a moving plan. As revealed in the moving intention model, younger respondents and those who had one or more children were more likely to plan a move than their counterparts. In addition, respondents who were married or living with a partner were more likely to plan a move than their counterparts. Respondents indicating

Table 4 Binomial Logistic Regression Models on Moving Plans (N=3,632)

Variables	Logit Coefficients			
	(1)	(2)	(3)	(4)
Constant	1.88***	.01	.45	1.11†
Intention to Move				
Very unlikely				-5.07***
Unlikely				-3.49***
Likely				-1.52***
Very likely ^a				
Residential Satisfaction				
Housing satisfaction			-.46***	-.32**
Neighborhood satisfaction			.06	.10
Emotional Attachment				
Liking current place	-.77***	-.67***	-.46***	-.39***
Missing current place if moved	-.27***	-.09	-.07	.01
Individual/household Characteristics				
Age				
- 21-30		.93***	.96***	.64**
- 31-40		.75***	.75***	.42*
- 41-50		.51**	.52**	.28
- 51-65 ^a				
Gender (1=Male)		.06	.05	.03
Marital status (1=Married/Living with partner)		.49***	.48***	.54**
Presence of children (1=Having one or more children)		.45*	.46*	.37†
Educational level				
- Elementary school or less		-.60†	-.61†	-.23
- Junior high school or equivalent		.08	.07	.19
- Senior high school or equivalent		.29	.31	.37
- Associate/college degree or equivalent		.35	.36	.28
- Graduate or professional training beyond college ^a				
Household income (in U.S. dollars)				
- \$ 7,999 or less		-.60**	-.62**	-.43*
- \$ 8,000 to \$11,999		-.70***	-.71***	-.47**
- \$12,000 to \$15,999		-.37*	-.39*	-.36*
- \$16,000 to \$23,999		-.21	-.25†	-.17
- \$24,000 or more ^a				
Location Characteristics				
Nativity status (1=Lifetime resident)		-.46**	-.45***	-.27
Urbanization level of residence (1=Rural)		-.20	-.22†	-.07
Housing tenure (1=Owner)		-.62***	-.56***	-.15
Housing crowdedness		.27***	.24**	.16*
Neighborhood crowdedness		.07	.08	.09
Housing size		-.00*	-.00*	-.00
-2 Log-Likelihood	3669.17	3337.23	3305.67	2729.72
Model Chi-square ^b	180.84	512.79	544.34	1120.29

^a Reference category of the dummy variable.

^b All model chi-squares were significant at the .001 level.

†: p < .10; *: p < .05; **: p < .01; ***: p < .001.

household income of US\$15,999 or less, however, were less likely to have a moving plan than those in the highest income bracket. Location characteristics were found to be associated with moving plans, except for urbanization level and neighborhood crowdedness. People who were lifetime residents, those who were the owners of the house they currently lived in, and those who lived in larger houses were less likely to plan a move than their counterparts. On the other hand, those who perceived small housing as uncomfortable were more likely to have a moving plan than those who did not. One indicator of emotional attachment—liking the current place—remained significantly associated with moving plans, while the other—missing current place if moved—did not.

The third model in Table 4 examined the intervening effects of residential satisfaction in the process of planning to move. Similar to its effect in the moving intention model, housing satisfaction was negatively associated with moving plans, while neighborhood satisfaction failed to show a significant effect. Contrary to the prediction of the residential satisfaction model, little evidence supported the model's hypothesis that residential satisfaction serves as an intervening variable in the process of serious thinking about moving. The significant effects of background variables were slightly changed when residential satisfaction was included in the analysis, with the exception of emotional attachment. As was the case in the previous model, age, marital status, presence of children, household income, nativity status, housing tenure, housing crowdedness, and housing size were found to have significant effects on planning to move. The effect of liking the current place on planning to move declined notably, but remained negatively associated with planning to move.

The moving-plan model is completed by adding the measure of moving intention in the model to residential satisfaction and background characteristics. As revealed in Table 2, the association between intention to move and planning to move is positively

significant. Those who were less likely to intend to move were less likely to plan a move than those who intended to move. Housing satisfaction and liking the current place remained negatively associated with moving plans while their influences decreased. The effects of background variables on moving plans differed in the full model.

With respect to other background characteristics, age, marital status, and household income were found to have significant effects on moving plans in the full model, despite notable changes to some effects. The effect of the presence of children on planning to move reached significance at the .10 level. Nonetheless, the effects of location characteristics, which were significant in the previous models, disappeared, with the exception of housing crowdedness. Adding the measure of intention to move absorbed much of the effect of location characteristics on planning to move. The total number analyzed in the sample was 3,632 for both of the mobility propensity models.

V. CONCLUSION AND DISCUSSION

This study examined the intervening role of residential satisfaction in the mobility propensity model, which incorporates individual/household and location characteristics, and emotional attachment in particular. As the results indicated, the role of residential satisfaction as an intervening variable in the process of mobility decision making is not fully supported. In contrast, background or structural variables were found to have significant effects on mobility propensity. The importance of emotional attachment in the residential satisfaction model was also demonstrated

As previous studies have found, residential satisfaction does not serve as the proximate determinant of mobility (Landale and Guest 1985; McHugh *et al.* 1990;

Newman and Duncan 1979; Speare *et al.* 1982; Varady 1983). Using a national representative sample for analyses, this study indicated a strong direct effect, rather than mediating effects, of residential satisfaction on mobility propensity. Despite the discrepancy, different aspects of satisfaction may play different roles in the mobility model. Consistent with previous studies, the effect of housing satisfaction was found to be more significant than that of neighborhood satisfaction when treated as individual indicators in the analyses (Landale and Guest 1985; McHugh *et al.* 1990; Varady 1983; with an exception, see Deane 1990). Studies that identified the mediating effect of residential satisfaction (e.g. Speare 1974; Speare *et al.* 1975; Bach and Smith 1977) employed composite indices in the mobility model. Although it can not be conclusively determined whether the use of individual indicators or composite indices influences the role of residential satisfaction in the mobility propensity model, the results indicate that mobility studies should place greater attention on the various aspects of residential satisfaction.

Emotional attachment has been found to play a significant role in the process of mobility decision making. As previous studies indicate, residents who were emotionally attached to local communities were less likely to intend or expect to move (see Beggs *et al.* 1996; Connerly and Marans 1985; Lee *et al.* 1994). Although the measures of emotional attachment may vary, viewing the community as a place that is desirable to live in is found to contribute to lower propensity to move. In addition, emotional attachment has demonstrated its non-overlapping explanatory power with residential satisfaction. This finding is consistent with previous studies that viewed satisfaction and emotional attachment as two different but closely associated concepts (Austin and Baba 1990; Liao 2001; St. John *et al.* 1986). This study provides evidence of the contribution of emotional attachment to reducing mobility propensity. Mobility decision-making models that consider the importance of residential satisfaction should take emotional attachment into account.

The results indicate that, contrary to the predictions of the residential satisfaction model, individual/household characteristics play a more important role than residential satisfaction in the mobility decision-making process. Previous studies have identified the importance of personal and household characteristics in the process of migration decision making (DeJong 1977; Lichter *et al.* 1995; Rhoda 1983; Speare *et al.* 1982; Varady 1983). This paper affirms the contribution of individual/household characteristics to mobility propensity. In particular, age, marital status, presence of children, educational level, and household income were found to have significant effects on intention to move and planning to move in Taiwan, despite the mediation of residential satisfaction.

It is not surprising that younger people are more likely to move in order to pursue economic or educational opportunities (Bach and Smith 1977; Lichter *et al.* 1995; Speare *et al.* 1982). Younger respondents were more likely to intend to move than older ones. Moreover, the youngest group (21-30 years old) was also most likely to take action on planning a move than other groups, who might only think about moving (Tables 3 and 4). While it is not the main purpose of this study to distinguish the mobility propensity among age groups, the results of this study imply that the association between mobility intention and actual behavior for younger residents may be more significant than that for the elderly.

Results of this study are consistent with previous research showing background variables that reflect life cycle as important factors influencing mobility propensity and behavior (see Harbison 1981; also Bach and Smith 1977; Lee 1966; Lee *et al.* 1994; Rossi 1980). In addition to younger residents, those who were married or living with a partner, and those who had one or more children, were more likely to intend or plan to move than their counterparts. Marital status and the presence of children are considered as two distinct stages of the life cycle where migration

decisions may be made (Harbison 1981). Although the effects of life cycle varied depending upon the stage a family or household was in, because the structural and functional dimensions of family, such as family size and the age of children, need to be considered (Harbison 1981), they may vary in different stages of a mobility decision-making process as well.

With the significant effect of age in mind, the effects of educational level indicated a different pattern in the mobility propensity models. Respondents who finished junior high school or less were less likely to intend to move than those having graduate or professional training beyond college. An examination of moving plans, however, revealed no significant difference among different educational levels. Different patterns were found in household income, another indicator of human resources. Respondents whose household incomes were in the two lowest categories were less likely to intend and plan to move than those in the highest income level.

Both educational level and household income have concurrently been examined in the residential satisfaction model (Bach and Smith 1977; Landale and Guest 1985; Speare 1974; Speare *et al.*, 1982). However, there is no consensus regarding the direct or indirect effects of educational level and household income on mobility propensity. In order to remove the mediating effect of household income on educational level, the former was removed to re-analyze the moving-plan models (results not shown). However, the effect of educational level remained insignificant in the full model where intention to move was considered. Relocation of human capital or human resources has been a critical issue for Taiwan (Lin and Tsay 2000), with noticeable changes in origins and destinations in recent years. Could Taiwan be considered a single labor-market area (see Speare 1974) so that additional education that is closely related to job changes would not initiate mobility propensity? Or could Taiwanese be concerned more about pecuniary cost when taking action on planning a

move, so that affordability outweighs other reasons? This study is unable to provide an answer to such questions.

In regard to these changed/unchanged effects of individual/household characteristics in the models resulting from different measures of mobility propensity, it is estimated that inclusion of moving intention absorbed some, but not all, of their effects on plans to move. Logistic regression of moving plans on moving intention indicates a positive association similar to those in Table 4. The independent effects of moving intention explained about a quarter of the variance of moving plans. Also, as shown in Table 2, a shift from having an intention to move to planning a move may not be far for some, reflecting serious thinking about moving (see Landale and Guest 1985), in the mobility decision-making process. While background characteristics or structural factors retain their influence, intention to move may play a larger intervening role in the mobility decision-making process than residential satisfaction.

This paper confirms the importance of background characteristics, emotional attachment, and residential satisfaction for mobility propensity. The mediating role of residential satisfaction is not supported, while it is found to be equally important as emotional attachment in the mobility decision-making process. In addition, planning to move is found to be a function of intention to move. Although actual moving behavior is not tested, the results of this study imply that planning a move may be a necessary step between the shifts from moving intention to actual mobility.

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