# Personality, Psychological Pathways, and Residential Mobility Intentions

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## *Abstract*

Traditional models of residential mobility often emphasize rational economic choices, yet empirical evidence frequently reveals irrational relocation behaviours driven by psychological factors. This study investigates the influence of Big Five personality traits on residential mobility intentions across diverse spatial dimensions (intra-city and inter-city) and temporal horizons (short-, middle-, and long-term). Utilizing the Generalised Structural Equation Modeling (GSEM) approach, our findings underscore that personality traits are critical determinants of relocation intentions, with their impact being systematically exerted through specific psychological pathways. These mechanisms include emotional states such as excitement and anxiety, as well as the subjective evaluation of social costs, economic costs, and physical environment value. The results highlight that Openness, Agreeableness and Neuroticism emerge as the most prominent predictors. Specifically, Openness and Agreeableness could promote mobility intentions through excitement and economic evaluation, Neuroticism primarily drives spatial moves via increased anxiety. This study demonstrates that personality-driven migration is a key driver in the formation of spatial personality patterns, which provides a critical framework for urban planners to align regional development strategies with the psychological profiles of their populations.

**JEL Classifications:** R23, D91, J61

**Keywords:** Big Five personality traits; residential mobility intention; psychological pathways; BFI; spatial personality patterns

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## *1. Introduction*

In the traditional literature spanning demography, urban economics, and human geography, residential mobility has long been conceptualised as an economic behaviour grounded in rational choice. Classical push-pull theories and human capital models operate on a straightforward premise: individuals decide to relocate only after meticulously weighing wage differentials between their origin and destination, housing costs, and the physical toll of migration (Harris & Todaro, 1970; Lee, 1966; Sjaastad, 1962). Yet, when observing actual urban migration patterns, one frequently encounters a striking divergence from this strict economic ideal. It is more and more common in contemporary societies to see professionals willingly forgo lucrative positions due to ostensibly trivial attachments to their local communities, or conversely, uproot their lives to move to unfamiliar cities in pursuit of a vaguely defined lifestyle. These seemingly irrational choices suggest that standard economic metrics capture only a fraction of the migration narrative.

If financial gain and objective housing conditions do not exclusively dictate human movement, what hidden psychological currents drive these life-altering decisions? As psychology and spatial sciences become increasingly intertwined, scholars are beginning to recognise that migration is not merely a displacement in physical space, but a profound reconfiguration of psychological space. Within this interdisciplinary shift, the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) emerge as a powerful analytical framework. Individual dispositions do more than merely tint a person's worldview; they actively shape how individuals perceive their current residential environments, calibrate their appetite for risk and novelty, and ultimately dictate their capacity to manage the stress and uncertainty inherent in the relocation process.

Building upon this psychological perspective, this study seeks to systematically untangle the underlying mechanisms through which personality influences migration behaviour. While previous research has broadly acknowledged the role of psychological factors, we delve deeper by mapping these traits onto both diverse spatial dimensions, specifically, intra-city and inter-city moves, and distinct temporal horizons ranging from the short to the long term. Utilising a Generalised Structural Equation Modelling (GSEM) approach, our empirical analysis reveals that personality traits act as critical determinants of relocation intentions, exerting their influence through highly specific psychological pathways. Ultimately, by demonstrating how personality-driven migration contributes to the formation of distinct spatial personality patterns, this research offers a human-centric framework for urban planners seeking to align regional development strategies with the actual psychological profiles of their populations.

## *2. Literature Review*

### *2.1 Personality traits and residential mobility*

Migration is an important area of demographic research, acting as a primary driver of population dynamics and a fundamental force in shaping the socio-economic disparities between geographic regions (Jokela, 2009). While traditional migration theories have long prioritized structural factors, such as labour market fluctuations, regional infrastructure, and housing affordability (Clark & Moore, 1982; Ferreira et al., 2010; Longley et al., 1991; Rossi & Shlay, 1982), there is a growing recognition that these macro-level variables do not fully account for individual-level variance in relocation behaviour. Consequently, recent studies have undergone a "psychological turn," suggesting that personality differences are vital in understanding why certain individuals exhibit a higher propensity for residential mobility than others (Jokela, 2009, 2021; McCann, 2015; Yoshino & Oshio, 2022). By utilizing the Five-Factor Model (FFM), researchers have begun to map how stable internal traits (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) influence the cognitive process of forming a mobility intention (Cheng & Chen, 2024).

In the U.S. context, high openness and low agreeableness have been found to drive both intra- and inter-state migration, whereas extraversion primarily promotes local moves (Jokela, 2009). Building upon these individual-level findings, McCann (2015) examines the correlation between aggregate state-level personality profiles and regional residential mobility patterns, showing that higher state neuroticism and extraversion was associated with lower mobility, and conscientiousness was related to residential mobility, but only without demographic variables controlled. Comparative studies between Italian mainlanders and islanders demonstrate that both immigrants to and emigrants from isolated regions exhibit higher levels of extraversion and openness than non-mobile residents (Ciani et al., 2007). In the Finnish context, high extraversion is linked to long-distance, rural-to-urban, and international migration (Silventoinen et al., 2008), whereas high neuroticism predicts a greater overall likelihood of moving but primarily across shorter distances (Jokela et al., 2008). In the British context, higher residential mobility is also related to higher openness and neuroticism level (Jokela, 2014), which is a pattern that has been similarly observed in German populations (Décieux & Altmann, 2024; Fouarge et al., 2019). Based on this, Shuttleworth et al. (2021) emphasize how personality dictates spatial distance, addressing the geographical gap in migration research. While extraversion drives actual relocation, openness specifically facilitates long-distance moves but inhibits short-distance ones, suggesting that personality profiles are critical to understanding the geographic reach of residential mobility. In the Australian context, Campbell (2019) finds that while Extraversion and Openness consistently predict migration intentions and outcomes (Crown et al., 2020), Openness notably reduces decision certainty. Conversely, Conscientiousness aligns prior intentions with actual moves, whereas Extraversion is a key

driver of spontaneous, unintended residential relocation. Moreover, individuals with low levels of agreeableness and emotional stability (neuroticism) are more likely to migrate multiple times (Crown et al., 2020).

However, within the Chinese context, empirical research on the intersection of personality and residential mobility remains sparse. Cheng and Chen (2024) have studied the correlation between personality traits and migration, but only focus on rural-to-urban movements. This study demonstrates that both cognitive and non-cognitive factors are significant predictors of mobility: specifically, a one-standard-deviation increase in cognitive ability and openness to experience correlates with a 0.7 and 0.8 percentage point rise in migration probability, respectively.

In summary, while the positive impact of openness on residential mobility is well-established (Bernard, 2022), and the influence of extraversion is largely validated, the role of neuroticism remains contradictory (Crown et al., 2020; Décieux & Altmann, 2024; Jokela, 2014). Conversely, agreeableness and conscientiousness have been shown to positively influence residential mobility but received significantly less attention in the existing literature (Jokela, 2020; McCann, 2015; Shuttleworth et al., 2021).

### *2.2 The role of personality in residential mobility studies*

It is also important to understand the mechanisms through which the Big Five traits influence residential mobility. Following the development of the BFI, literature has described the psychological profiles associated with each trait: while openness and extraversion lead to more curiosity and social engagement, conscientiousness and agreeableness relate to self-discipline, trust, and generosity. Meanwhile, neuroticism is linked to poor stress management and constant worry (Costa & McCrae, 1995; De Raad & Mlačić, 2015; Goldberg, 1990; John, 1999; McCann, 2015).

The sense of excitement associated with moving is a recurring theme in discussions regarding the relationship between personality and residential mobility (McCann, 2015). For instance, individuals high in extraversion and openness experience a psychological need for novelty and intellectual excitement, which overcomes the fear of the unknown, thereby fueling the desire to relocate (Jokela, 2009; Tabor et al., 2015).

Oishi and Talhelm (2012) have studied the short-term and long-term psychological reactions, especially the anxiety and anticipated loneliness during residential moves. This anxiety stems from the familiarity-liking effect (or "mere-exposure effect"), where individuals prefer familiar objects over unfamiliar ones (Zajonc, 2001). Research suggests that the prospect of moving and a mobile lifestyle actually strengthens this preference for the familiar, making the transition

more psychologically challenging (Oishi et al., 2012; Oishi & Talhelm, 2012). High levels of neuroticism and collectivism usually make individuals less ready to relocate, whereas uncertainty tolerance is positively associated with relocation readiness (Otto & Dalbert, 2012). Residential mobility for career development is often driven by the achievement motive, which is the desire to take on challenges and surpass excellence (McClelland, 1961). Because "high achievers" dislike routine and seek growth, they often become restless when their current environment limits their goals (McClelland, 1987; Sheppard & Belitsky, 1965). If a location lacks productive opportunities, these individuals are more likely to migrate to find better outlets (Boneva & Frieze, 2001).

The role of personality in residential mobility is also mediated by the ease of establishing and maintaining social ties. As early as 1936, Lewin (1936) identified fundamental differences between social ties in the United States and Germany, observing that: “Compared with Germans, Americans seem to make quicker progress toward friendly relations early in the acquaintance process and with many more persons. Yet this development often stops at a certain point and the quickly acquired friends will, after years of relatively close relations, say good bye as easily as after a few weeks of acquaintance”. Subsequent research by Yuki and Schug (2012) on relational mobility provided further empirical support, highlighting the relative ease of establishing new friendships in the U.S. context. Furthermore, GILLATH and KEEFER (2016) examined whether residential mobility fosters a "disposable" mindset toward both objects and social ties. Their findings suggest that individuals encounter varying degrees of difficulty when establishing social connections, a phenomenon that may be intrinsically linked to distinct personality traits. However, as the literature suggests, traits like extraversion, agreeableness, and conscientiousness present an ambiguous influence on migration intentions due to a dual-effect mechanism. On one hand, individuals high in extraversion possess the sociability and communication skills necessary to adapt to a new social milieu, effectively acting as an engine for mobility. On the other hand, these same qualities often lead to deep integration within their current community, creating strong social anchors that may make leaving less desirable. Similarly, agreeable individuals, characterized by trust and generosity, also face a trade-off: while their likability allows for smoother adjustment to a new neighbourhood, it also fosters powerful emotional bonds to their present environment. Thus, whether these traits promote or inhibit mobility often depends on the balance between an individual's social comfort in new settings versus the strength of their existing social capital (McCann, 2015).

In summary, while most existing literature focuses on actual residential relocation, this study

examines residential mobility intentions across two primary dimensions. First, we incorporate a spatial dimension, distinguishing between intra-city and inter-city mobility. This classification is informed by evidence that short-distance moves and long-distance migrations are driven by distinct motivations, resulting in divergent decision-making processes and outcomes (Arbabi et al., 2019; Mägi et al., 2016). Second, we introduce temporal horizons, further stratifying mobility intentions into short-, middle-, and long-term perspectives (Panori et al., 2026). By investigating both the direct impact of personality traits on mobility intention and the mediating role of psychological pathways, this research provides critical insights into the formation of spatial personality patterns. Furthermore, regarding mechanistic analysis, although many scholars have explored the psychological pathways between personality and mobility, these discussions are predominantly qualitative or theoretical (McCann, 2015; Oishi & Talhelm, 2012). This paper addresses this gap by proposing a theoretical model that formally explains the mediating roles of emotional utility, social and economic costs, and the perceived quality of the physical environment.

## *3. Theoretical Model and Hypotheses*

Building upon the above literature, we construct a structured *Discrete Choice Dynamic Programming (DCDP) model*. In this model, personality traits are treated as exogenous parameters that internalize an individual's psychological states, which ultimately determine the probability of migration. The model evaluates migration choices by calculating the utility derived from the difference between the expected total benefits and the total costs associated with relocation. The construction of the model is divided into the following three parts:

### *3.1 Construction of the Baseline Utility Function*

Assume that individual $i$ currently resides in region $o$ and faces a set of potential destinations $D$. The decision to migrate to a destination $d(d \in D)$ is based on the difference between the expected total benefits and the total costs associated with the relocation. The baseline utility function is formulated as follows:

$$U_{id} = TV_{id} - TC_{id} + \epsilon_{id}$$

Where $TV_{id}$ represents the expected total benefits obtained at destination $d$. $TC_{id}$ denotes the generalized cost of migrating from $o$ to $d$. $\epsilon_{id}$ is the stochastic error term, which is assumed to follow an extreme value distribution.

### *3.2 Mathematical Modeling of Psychological Mediating Variables*

*1. Emotional Value:*

$$Value_{Emotion} = \lambda \cdot \sum \gamma_J \cdot J_i \cdot f(Dist_{od})$$

$$\lambda = \frac{1}{\rho(J_i)} = \frac{1}{\rho_0 + \sum \alpha_J \cdot J_i}$$

$J \in \{Openness, Extraversion, Agreeableness, Conscientiousness, Neuroticism\}$

The model incorporates emotional value derived from both excitement and anxiety. Here, $\lambda$ represents the individual's risk aversion coefficient, which is intrinsically linked to anxiety levels. The coefficients $\gamma_J$ and $\alpha_J$ capture the effect of personality on emotional value, reflecting heterogeneous preferences for excitement and anxiety across different individuals. For instance, those scoring higher in Openness and Extraversion are more predisposed to perceive relocation as a hedonic experience, whereas higher levels of Neuroticism are associated with increased risk aversion (Oishi et al., 2012; Oishi & Talhelm, 2012; Otto & Dalbert, 2012). Furthermore, $f(\cdot)$ is characterized as an inverted U-shaped function regarding relocation distance; while excitement and novelty generally increase with distance, these

feelings begin to decline ($f(\cdot)$ decreases) once the relocation distance exceeds a certain threshold.

*2. Social Cost:*

$$Cost_{social} = \frac{k}{\prod J_i^{\beta_J}}$$

$J \in \{Openness, Extraversion, Agreeableness, Conscientiousness, Neuroticism\}$

Individuals' capacity to establish social ties is also associated with personality (GILLATH & KEEFER, 2016; McCann, 2015). In the model, $Cost_{social}$ represents the marginal cost of establishing a unit of social relationship. Specifically, this cost can be considered as a function of individual personality, for example, for individuals characterized by higher levels of Openness or Extraversion, the marginal cost of cultivating new social ties is probably lower. Consequently, these individuals will find it easier to build comfortable social ties and networks.

*3. Economic Cost*

$$Cost_{career} = \frac{m}{\prod J_i^{\delta_J}} + c - v(J_i)$$

$J \in \{Openness, Extraversion, Agreeableness, Conscientiousness, Neuroticism\}$

In the context of residential mobility, economic costs primarily manifest as career transition costs. In our model, $Cost_{career}$ represents the net cost of a career transition, defined as the total expenditure of changing jobs minus the associated economic gains or income growth. Specifically, we define this cost structure as follows, the coefficient $c > 0$ indicates that a fixed cost is incurred by individuals of any personality type when changing jobs. In contrast, the variable component, expressed as $\frac{m}{\prod J_i^{\delta_J}}$ and $v(J_i)$, captures the career change costs and the subjective valuation of changing jobs associated with personality traits (Otto & Dalbert, 2012). For instance, individuals with higher levels of Openness or Agreeableness may possess greater professional adaptability, thereby effectively lowering their marginal transition costs.

*4. Physical Environment Value*

According to Kahneman and Tversky (1979), the total value of a prospect is determined by:

$$V = \sum_{i=1}^{n} \pi(p_i) v(x_i)$$

$$v(x) = \begin{cases} x^{\alpha} & if \ \ x \geq 0 \\ -\lambda(-x)^{\beta} & if \ \ x < 0 \end{cases}$$

Here, $x_i$ denotes the outcomes (gains or losses) measured relative to a reference point. $v(x_i)$ is the value function, which assigns a subjective value to each outcome and typically exhibits a characteristic S-shaped: concave in the domain of gains (reflecting risk aversion) and convex in the domain of losses (reflecting risk seeking). $\pi(p_i)$ is the decision weight function, which transforms objective probabilities into subjective weights. When evaluating physical environment value, $x_i$ represents the objective quality of the new residential environment relative to the original residence. We use $\lambda$ to represent the coefficient of loss aversion (typically $\lambda > 1$, making losses more impactful). Additionally, the sensitivity parameters $\alpha$ and $\beta$ are modeled as functions of individual personality traits. This specification captures how distinct personality traits lead to different risk attitudes (Lauriola & Levin, 2001), thereby accounting for heterogeneous perceptions of environmental change. Based on these assumptions, our model is specified as follows:

$$Value_{Environment} = \sum_{i=1}^{n} \pi(p_i) v(x_i)$$

$$v(x) = \begin{cases} x^{\frac{1}{\sum \varepsilon_J \cdot J_i}} & if \ \ x \geq 0 \\ -\lambda(-x)^{\frac{1}{\sum \epsilon_J \cdot J_i}} & if \ \ x < 0 \end{cases}$$

$$J \in \{Openness, Extraversion, Agreeableness, Conscientiousness, Neuroticism\}$$

### *3.3 Construction of the Adjusted Utility Function*

Based on the above derivations, we substitute each component into the baseline utility function. The adjusted utility function is as follows:

$$U_{id} = TV_{id} - TC_{id} + \epsilon_{id}$$

$$= \omega_1 \cdot Value_{Emotion} + \omega_2 \cdot Value_{Environment} - \omega_3 \cdot Cost_{social} - \omega_4 \cdot Cost_{career} + \epsilon_{id}$$

$$= \ \omega_1 \cdot \lambda \cdot \sum \gamma_J \cdot J_i \cdot f(Dist_{od}) + \omega_2 \cdot \sum_{i=1}^{n} \pi(p_i) v(x_i) - \omega_3 \cdot \frac{k}{\prod {J_i}^{\beta_J}} - \omega_4 \cdot \left( \frac{m}{\prod {J_i}^{\delta_J}} + c - v(J_i) \right) + \epsilon_{id}$$

$$J \in \{Openness, Extraversion, Agreeableness, Conscientiousness, Neuroticism\}$$

Where $\omega_i$ $(1 = 1,2,3,4)$ represents the varying weights that individuals assign to different psychological pathways (including emotional value, physical environment value, social cost and economic cost) depending on the specific purpose of residential mobility.

### *3.4 Hypotheses*

Based on these theoretical considerations, we propose the following hypotheses regarding the direct effects of Big Five Inventory (BFI) traits on residential mobility intention, as well as four corresponding mediating hypotheses. The theoretical framework of the direct and indirect effects of personality traits on residential mobility intentions is shown in Figure 1.

***1. Direct effects of personality on residential mobility intention***

*H1a*: Openness predicts residential mobility intention.

*H1b*: Neuroticism is associated with residential mobility intention.

*H1c*: Extraversion predicts residential mobility intention.

*H1d*: Agreeableness relates to residential mobility intention.

*H1e*: Conscientiousness is associated with residential mobility intention.

***2. Indirect effects of personality on residential mobility intention through psychological pathways***

*H2a*: Personality traits indirectly influence residential mobility intention by affecting the subjective evaluation of emotional value. Excitement is anticipated to exert a positive impact on residential mobility intention. Increased anxiety is anticipated to exert a negative impact on residential mobility intention.

*H2b*: Personality traits indirectly influence residential mobility intention by affecting social cost associated with relocation.

*H2c*: Personality traits indirectly influence residential mobility intention by affecting economic cost, particularly those related to career development and professional adaptation in a new labour market.

*H2d*: Personality traits indirectly influences residential mobility intention by affecting the evaluation of physical environment value.

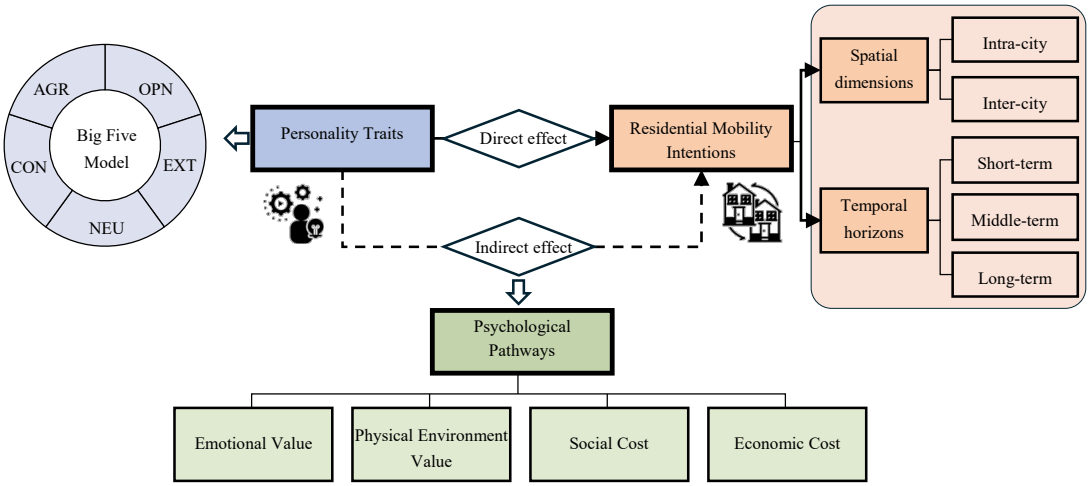


Figure 1. Theoretical framework of the direct and indirect effects of personality traits on residential mobility intentions

## *4. Data and method*

### *4.1 Data and samples*

To empirically examine the impact of the Big Five personality traits on residential mobility, this study utilizes a primary dataset consisting of 2,000 samples collected in Hangzhou, Zhejiang, China. The survey instrument was specifically designed to capture multidimensional information, including a standardized Big Five personality inventory[1] and a comprehensive battery of questions regarding residential mobility intentions and their underlying psychological determinants. In addition to these core outcome variables, we incorporated the demographic and socioeconomic control variables, such as age, gender, education level, and household income, to ensure a robust estimation of the relationship between personality profiles and residential mobility behaviour (See Table 1).

The internal consistency of the Big Five personality traits was evaluated using Cronbach's alpha (See Appendix 1). The results indicate that most dimensions exhibit robust reliability, with coefficients for Extraversion, Agreeableness, and Neuroticism all hovering around 0.75, and Openness showing the highest internal consistency at 0.82. Although the coefficient for Conscientiousness is slightly lower at 0.66[2], it remains within the acceptable threshold (0.60 - 0.70) commonly cited for short-form psychological inventories like the BFI-20. Therefore, we can conclude that these reliability scores demonstrate sufficient internal consistency for further empirical analysis. The personality traits are also measured using the BFI-10. Internal consistency between the two BFI measures is assessed using Cronbach's alpha. Cronbach's alpha coefficients for the five BFI dimensions range from 0.92 to 0.96, indicating high reliability.

[1] Here we use the BFI-20 (Big Five Inventory-20), a validated short-form version of the original BFI-44.

[2] The lower Cronbach's alpha for Conscientiousness may be attributed to the high heterogeneity of this construct. In short-form inventories like the BFI-20, items are designed to capture diverse aspects of conscientiousness, such as self-discipline, order, and dutifulness. This inherent breadth often leads to lower inter-item correlations compared to more homogenous dimensions.

**Table 1 Descriptive Statistics**

| Category | Variable | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| BFI | extraversion | 0 | 1 | -3.228 | 2.051 |
| | agreeableness | 0 | 1 | -4.192 | 1.533 |
| | conscientiousness | 0 | 1 | -3.923 | 1.877 |
| | neuroticism | 0 | 1 | -2.122 | 2.783 |
| | openness | 0 | 1 | -3.724 | 1.708 |
| control variables | age | 32.346 | 9.589 | 21 | 71 |
| | education | .942 | .235 | 0 | 1 |
| | gender | .414 | .493 | 0 | 1 |
| | income | .333 | .471 | 0 | 1 |
| | Hangzhou | .462 | .499 | 0 | 1 |
| | marriage | .409 | .492 | 0 | 1 |
| | health | .957 | .203 | 0 | 1 |
| psychological pathways | excitement | 3.443 | 1.063 | 1 | 5 |
| | anxiety | 3.059 | 1.098 | 1 | 5 |
| | social cost | 3.309 | .964 | 1 | 5 |
| | economic cost | 3.905 | .968 | 1 | 5 |
| | physical environment value | 3.765 | 1.052 | 1 | 5 |
| outcome variables | intra-city residential mobility intention | 0 | 1.461 | -5.152 | 1.921 |
| | inter-city residential mobility intention | 0 | 1.525 | -4.246 | 2.143 |
| | long-term residential mobility intention | 3.088 | 1.139 | 1 | 5 |
| | middle-term residential mobility intention | 3.709 | 1.057 | 1 | 5 |
| | short-term residential mobility intention | 3.521 | 1.094 | 1 | 5 |

Note: BFI traits are reported as Z-scores in this table.

### *4.2 Econometric Model*

#### *4.2.1 The direct effect of personality traits*

Because the dependent variables take multinomial ordered values, this study employs Ordered Logit models (Wooldridge, 2010) to measure the effect[3]. To simplify the empirical framework, the models are estimated in a linear index form. The specific specifications of the Ordered Logit models are given in Equation (1).

$$
\begin{aligned}
&Y^* \\
&= \alpha_0 + \alpha_1 Extraversion + \alpha_2 Agreeableness + \alpha_3 Conscientiousness + \alpha_4 Neuroticism \\
&+ \alpha_5 Openness + \delta X \\
&+ \mu_1
\end{aligned} \tag{1}
$$

$Y^*$ are our dependent variables, including outcome variables related to residential mobility intentions. Based on Ebert et al. (2022) and Rentfrow et al. (2008), the independent variables in Equation (1) are defined as the Z-scores of the Big Five personality traits, calculated from the BFI-20 questionnaire. The vector $X$ includes several control variables: age, health, education, and marital status. $\alpha_i$ $(i = 1, \cdots, 5)$ are the coefficients to be estimated. $\mu_1$ is the random error terms assumed to follow a normal distribution.

#### *4.2.2 The mediating effect of psychological pathways*

To capture the indirect effects operating through psychological mediators, we use Generalized Structural Equation Modeling (GSEM). Unlike traditional stepwise regression, GSEM allows for the simultaneous estimation of multiple pathways while accommodating different distributional assumptions for the dependent variables (i.e., continuous and ordinal variables) within a unified framework. Specifically, the mediator equation (first stage) is given in Equation (2) and the outcome equation (second stage) is given in Equation (3).

$$
\begin{aligned}
&Y^* \\
&= \beta_0 + \beta_1 Extraversion + \beta_2 Agreeableness + \beta_3 Conscientiousness + \beta_4 Neuroticism \\
&+ \beta_5 Openness + \delta X \\
&+ \mu_2
\end{aligned} \tag{2}
$$

[3] All models are estimated using Ordered Logit regressions, except for intra-city and inter-city residential mobility intentions, which are estimated using OLS models.

$$
\begin{aligned}
&Y^* \\
&= \gamma_0 + \gamma_1 Excitement + \gamma_2 Anxiety + \gamma_3 Social\_cost + \gamma_4 Economic\_cost + \gamma_5 Physical\_value \\
&+ \theta_1 Extraversion + \theta_2 Agreeableness + \theta_3 Conscientiousness + \theta_4 Neuroticism + \theta_5 Openness \\
&+ \eta X \\
&+ \mu_3
\end{aligned}
$$

$Y^*$ represents the psychological pathways in Equation (2), specifically excitement, anxiety, social cost, economic cost and physical value. In Equation (3), $Y^*$ refers to the outcome variables related to residential mobility. The independent variables in Equation (2) are defined as the Z-scores of the Big Five personality traits, same as Equation (1). The independent variables in Equation (3) represent both the underlying psychological pathways, which serve as the mediators and the Z-scores of the Big Five personality traits. The vector $X$ includes the control variables. $\beta_i$ $(i = 1, \cdots, 5)$, $\theta_i$ $(i = 1, \cdots, 5)$ and $\gamma_i$ $(i = 1, \cdots, 4)$ are the coefficients to be estimated. $\mu_2$ and $\mu_3$ are the random error terms assumed to follow a normal distribution.

## *5. Empirical Results*

### *5.1 Direct Effect*

#### *5.1.1 Intra-city residential mobility intention*

For the outcome variables, we differentiated between residential mobility patterns and temporal intentions. Principal Component Analysis (PCA) was employed to derive two continuous indices: intra-city mobility and inter-city mobility, representing the spatial intensity of relocation behaviour. Specifically, the intra-city mobility index was derived from three items, measured on a 5-point Likert scale: (1) "I am willing to move to a different neighbourhood in the same city if it improves my quality of life"; (2) "I would consider relocating within the city for better educational opportunities"; and (3) "I am open to moving to another area of the city for more affordable housing." The high factor loadings observed in the PCA results justified the aggregation of these items into a single latent dimension. Similarly, the inter-city mobility index was also derived from three items: (1) "I am willing to move to another city for a better job opportunity"; (2) "I would consider moving to a different city if the overall living conditions are better"; and (3) "I am open to living in a city with a different climate or culture than where I currently live."

In contrast, short-term, middle-term, and long-term mobility intentions were treated as ordinal variables, measured on a 5-point Likert scale to preserve their inherent categorical hierarchy. Specifically, these temporal dimensions of relocation propensity were operationalized as follows: (1) long-term residential mobility intention was measured by the item "I am willing to relocate to another city if my employer requires it"; (2) middle-term intention was captured by "I would consider moving to a different region or province for a promotion or career advancement"; and (3) short-term intention was assessed via "I am open to temporary relocation for short-term work assignments (e.g., 3-12 months)."

Table 2 presents the regression results examining the impact of the Big Five personality traits on five distinct types of residential mobility intentions. The models account for both spatial dimensions (intra-city and inter-city) and temporal horizons (long-term, middle-term, and short-term).

A major discovery is that openness shows a significantly positive impact in all models, aligning with our expectations and previous literatures (Ciani et al., 2007; Jokela, 2009; McCann, 2015). For intra-city migration, individuals with high openness actively seek aesthetic appeal, a vibrant cultural atmosphere, and psychological novelty beyond basic functional requirements. Consequently, they exhibit a heightened propensity to relocate between neighbourhoods as a means of lifestyle optimization. Inter-city migration requires adapting to entirely new cultures, dialects, and lifestyles, which places high demands on an individual's adaptability. Highly open

individuals do not fear these differences; instead, they view them as opportunities for self-growth. This is also consistent across all temporal horizons. Notably, Openness reaches its highest value in short-term residential mobility intention (0.4192 in Model 5), this indicates that the psychological preference for novelty is most acutely manifested in low-commitment transitions. For highly open individuals, short-term relocation, such as temporary work assignments or brief seasonal stays, serves as an ideal "trial-and-error" mechanism. It allows them to satisfy their craving for freshness and environmental variety without incurring the significant social lock-in effects or the high sunk costs associated with permanent, long-term migration.

Neuroticism shows a significant positive correlation with almost all mobility types (except short-term). This finding initially appears counterintuitive, as Neuroticism is typically associated with avoidant behaviour and heightened stress reactivity, which would theoretically diminish migration propensity. However, a plausible explanation for this positive association is that individuals scoring high in Neuroticism often exhibit chronic dissatisfaction with their residential environment, including neighbourhood and housing quality. Such persistent discontent serves as a psychological driver, prompting frequent relocation in an effort to secure improved living conditions, educational resources, or better well-being (Jokela, 2009, 2014).

Interestingly, Extraversion displays a heterogeneous effect. It is significantly and negatively associated with intra-city mobility intentions, yet it positively predicts long-term relocation intentions. This runs counter to the traditional view that extraverts prefer mobility (Campbell, 2019; Jokela, 2009). One possible explanation is that extraverts satisfy their need for novelty through frequent social activities (such as parties or travel). Because they can achieve stimulation through social interaction without changing their physical residence, highly extraverted individuals may feel less pressure to make minor local moves.

Agreeableness also serves as a strong predictor, particularly for intra-city and inter-city mobility. This might reflect a higher adaptability or a desire to move to environments that better facilitate social harmony and interpersonal connections. Highly agreeable individuals possess stronger affinity and confidence in their ability to integrate into new communities quickly, leading to lower psychological resistance toward moving. In contrast, conscientiousness is positively linked to long-term and middle-term intentions. Given that conscientious individuals are typically goal-oriented and plan-driven, their higher mobility intention likely reflects a strategic choice for career advancement or long-term stability.

Regarding other control variables, the coefficients for marriage are significantly negative in most models, indicating that married individuals have a lower propensity for residential mobility compared to single individuals. In the Chinese context, marriage often signifies the establishment of a stable household and is frequently tied to homeownership and deep family

obligations. These social and economic ties create a strong anchoring effect that makes relocation more difficult. This provides empirical support for life cycle theory: marriage represents a major life stage that increases life stability and significantly raises the total cost of relocation.

**Table 2 Results of BFI on residential mobility intention**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | intra-city | inter-city | long-term | middle-term | short-term |
| extraversion | -0.1388*** | -0.0226 | 0.1306** | -0.0165 | 0.0939 |
| agreeableness | 0.5392*** | 0.3453*** | -0.0051 | 0.3186*** | 0.2811*** |
| conscientiousness | 0.1568*** | -0.0240 | 0.2068*** | 0.1549** | 0.0817 |
| neuroticism | 0.0689** | 0.1075*** | 0.2990*** | 0.1281*** | 0.0558 |
| openness | 0.1913*** | 0.2052*** | 0.2852*** | 0.3184*** | 0.4192*** |
| age | -0.0001 | -0.0058 | -0.0100* | -0.0169*** | 0.0035 |
| education | 0.3654** | -0.0059 | -0.0816 | -0.0368 | 0.1616 |
| gender | -0.1606*** | -0.0653 | 0.1305 | -0.0496 | 0.1102 |
| income | 0.0474 | -0.1524** | -0.3366*** | -0.2836*** | -0.0912 |
| marriage | 0.0283 | -0.2495*** | -0.1330 | -0.4264*** | -0.5088*** |
| health | -0.2133 | 0.0270 | 0.6005*** | 0.0682 | -0.0196 |
| District | Yes | Yes | Yes | Yes | Yes |
| N | 2000 | 2000 | 2000 | 2000 | 2000 |
| r2 | 0.242509 | 0.109328 | | | |
| r2_p | | | 0.032459 | 0.056760 | 0.060744 |
| chi2 | | | 195.563850 | 316.480739 | 351.005696 |
| F | 26.974016 | 11.563102 | | | |
| p | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

### *5.2 Indirect effect*

Building on the analysis of direct effects, we further explore whether the relationship between the Big Five personality traits and residential mobility intentions is mediated by specific psychological pathways. Based on our questionnaires, several items were developed to capture the psychological processes underlying relocation decisions. These mediators were operationalized as follows:

1. Emotional Value: This construct is defined by the dual dimensions of Excitement and Anxiety. Excitement is measured by the item: "The thought of starting a new life in a different city makes me feel excited." Conversely, Anxiety is captured by: "The thought of adapting to a new environment makes me feel anxious."

2. Social Cost: This reflects the perceived difficulty of rebuilding social capital. It is measured by the degree of comfort with establishing new connections: "I feel comfortable with the idea of building a new social network after moving."

3. Economic Cost: To assess the economic rationale behind moving, we evaluate the perceived return on investment regarding professional growth: "I feel that moving is worth it if it promotes my personal or career development."

4. Physical Environment Value: This item measures the minimum requirement for environmental improvement as a prerequisite for relocation: "I would only move if the new place clearly offers better conditions than my current one."

Rather than relying on a series of stepwise regressions (Cohen et al., 2013; Draper & Smith, 1998), which may overlook the simultaneous interdependencies between variables, we utilized Generalized Structural Equation Modeling (GSEM) to estimate the entire mediation system in a single framework (Cain, 2021). Unlike traditional SEM, GSEM allows for the specification of different families and link functions for various equations. Ordered Logit links were applied to the equations where psychological mediators (excitement, anxiety, social cost, economic cost and physical environment value) and temporal intentions (short, middle, and long-term) served as dependent variables. Identity links (Linear regression) were utilized for the equations predicting the continuous PCA-derived mobility scores (intra-city and inter-city). The model was estimated using robust standard errors to account for potential heteroscedasticity. The GSEM results are reported in Table 3.

#### *5.2.1 Associations between personality traits and proposed mediators*

For the associations between personality traits and proposed mediators, In Model 1, the coefficient for Openness (0.6531) is the most significant and largest positive predictor of

*Excitement* compared to other personality traits. This suggests that for individuals with high openness, the main driver of relocation is not just economic gain, but "experience arbitrage." This means they move to gain new sensory, cultural, and intellectual stimulation. Openness includes a natural urge to try new things. For these people, leaving their comfort zone is a benefit rather than a cost. It is also worth noting that Extraversion has a significant positive effect, but its coefficient is only about one-quarter of Openness. This positive result matches the common idea that extraverts move more easily because they enjoy building new social circles. However, our data shows that the desire for "new knowledge" (Openness) is a stronger driver for starting a move than the desire for "new social connections" (Extraversion).

In Model 2, the coefficient for Neuroticism (0.8152) is the most significant and largest positive predictor of *Anxiety* compared to other personality traits. This result shows that individuals with high neuroticism are more likely to feel anxious about the uncertainties of moving. For them, relocation is not just a physical change, but a challenge to their psychological security. In contrast, Extraversion has a significant negative coefficient. This suggests that extraverts are more confident about adapting to new environments and are less prone to anxiety. Notably, the coefficient for Agreeableness is positive and significant. We usually expect agreeable people to be adaptable and easygoing, which should reduce anxiety. However, the data shows that high agreeableness significantly increases anxiety about adapting to a new environment. This may be because agreeable people highly value deep and harmonious social relationships. Moving means cutting strong ties with existing social networks. Therefore, their anxiety may not come from a fear of the new environment itself (such as safety or getting lost), but from social separation distress (Watt, 2023). They may worry about being unable to build similarly deep emotional connections in a new place or feel they are letting down friends and family back home. This "relational anxiety" is a unique psychological burden for highly agreeable movers.

In Models 3, the coefficients for Extraversion, Agreeableness, Neuroticism, and Openness are all positive and significant. This indicates that a wide range of personality traits supports the psychological adaptation required for relocation, specifically regarding *social cost*. For instance, high scorers in Extraversion and Agreeableness may feel comfortable because they naturally enjoy and excel at social interaction. Meanwhile, those with high Openness may view building a new network as an interesting challenge rather than a burden. Interestingly, even the positive coefficient for Neuroticism suggests that for some individuals, the desire to establish a fresh, supportive social environment may outweigh their anxiety about the move.

In Model 4, the coefficients for Agreeableness, Conscientiousness, and Openness are

consistently positive and statistically significant. These findings align with our hypothesis regarding economic cost, suggesting that these personality dimensions play an important role in job transitions. Specifically, the results imply that individuals characterized by higher levels of Conscientiousness, Agreeableness, and Openness encounter lower career change costs: the organized and goal-oriented nature of conscientious individuals enhances their professional adaptability; the cooperative spirit of agreeable individuals helps them build social capital in new workplaces; and the inherent flexibility of those high in openness reduces the cognitive and psychological barriers to entering new fields.

In Model 5, the coefficients for Agreeableness, Conscientiousness, Neuroticism, and Openness are consistently positive and statistically significant. This suggests that these personality traits generally act as drivers for seeking better living conditions. Regardless of the specific psychological profile, individuals with these traits are all more likely to choose relocation when the new residence offers a clear upgrade in quality of life. However, Extraversion is the notable exception in this model. A potential explanation is that highly extraverted individuals focus more on external stimulation and social interactions outside the home. For them, the physical environment of the residence may be less important because they derive most of their life satisfaction from social networks and public activities. This results in a lower sensitivity to residential upgrades compared to other personality types.

### *5.2.2 Associations between proposed mediators and residential mobility intentions*

Associations between proposed mediators and residential mobility intentions are reported in Models 6 - 10. The results indicate that the coefficients for *excitement* is significantly positive across all models, providing empirical support for the hypothesis that feeling of excitement increase residential relocation intentions.

Beyond the effect of excitement, the coefficients for economic cost are also significantly positive across all models. This indicates that whether for intra-city or inter-city moves, individuals consistently prioritize professional growth when making relocation decisions. This finding aligns with classical labour migration theory, which suggests that people may cross geographical boundaries in pursuit of better employment opportunities and career advancement.

The coefficients for social cost are significantly positive only in a subset of the models. This suggests that for the majority of moves driven by experiential utility (excitement) and material gains (career development), the ability to forge new social ties is not a decisive factor.

Meanwhile, the coefficients for anxiety are significantly positive in both intra-city and inter-city residential mobility intentions, which contradicts the hypothesis that anxiety inhibits relocation. A possible explanation is that anxiety is positively associated with "High

Involvement." An individual with no intention to move is unlikely to experience relocation-related anxiety. Conversely, those who are seriously considering or willing to relocate may experience higher anxiety precisely because they are deeply engaged in evaluating the consequences of such a move. Therefore, anxiety may function as a byproduct of strong relocation intentions rather than a barrier to them (Jokela, 2014).

Regarding the physical environment value, the coefficients are also positive and significant in both intra-city and inter-city residential mobility intentions. This indicates that an upgrade in housing quality and neighbourhood amenities serves as a universal motivator for both intra-city and inter-city relocation. However, this effect is notably absent in the models estimating intentions over different temporal horizons. A possible explanation is that the survey items capturing short-, middle-, and long-term mobility intentions are primarily anchored in career-oriented considerations. In the context of employment-driven migration, a high-quality physical environment is likely viewed merely as a baseline prerequisite, rather than the decisive catalyst that dictates the actual timing of the move.

In conclusion, the first-stage and second-stage regression indicate that openness and agreeableness promote residential mobility intention via excitement and perceived economic utility. Neuroticism drives intra-city and inter-city intentions by increasing feelings of anxiety. Lastly, conscientiousness bolsters residential mobility intentions through both the evaluation of economic benefits and physical environment.

**Table 3 Effects of Personality Traits on Psychological Mediators and Effects of Mediators on Residential Mobility Outcomes**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| | excitement | anxiety | social cost | economic cost | physical environment | intra-city | inter-city | long-term | middle-term | short-term |
| extraversion | 0.1681** | -0.2339*** | 0.2736*** | -0.1386** | -0.2322*** | -0.0912** | 0.0006 | 0.0763 | -0.0051 | 0.0952 |
| agreeableness | 0.1408** | 0.2802*** | 0.3464*** | 0.5850*** | 0.5253*** | 0.3699*** | 0.1624*** | 0.1625** | 0.0817 | -0.1618** |
| conscientiousness | 0.0157 | -0.0474 | -0.0556 | 0.1272* | 0.1620** | 0.1234*** | -0.0537 | 0.0654 | 0.1415** | 0.2148*** |
| neuroticism | 0.1562*** | 0.8152*** | 0.1845*** | -0.0011 | 0.1842*** | 0.0214 | 0.0522 | 0.0329 | 0.0894 | 0.2478*** |
| openness | 0.6531*** | -0.0347 | 0.4573*** | 0.4927*** | 0.3172*** | 0.0482 | -0.0159 | 0.2327*** | 0.0627 | 0.0619 |
| excitement | | | | | | 0.0845*** | 0.3108*** | 0.2225*** | 0.3944*** | 0.4719*** |
| anxiety | | | | | | 0.0690** | 0.0593* | -0.0036 | 0.0153 | 0.0422 |
| social cost | | | | | | -0.0336 | -0.0006 | 0.1735*** | 0.0408 | 0.2892*** |
| economic cost | | | | | | 0.4660*** | 0.4907*** | 0.4186*** | 0.7835*** | 0.2685*** |
| physical environment | | | | | | 0.1847*** | 0.1448*** | 0.0030 | 0.0450 | -0.0123 |
| age | 0.0002 | -0.0129** | -0.0093 | -0.0004 | 0.0088 | -0.0003 | -0.0060 | 0.0036 | -0.0187*** | -0.0102* |
| education | -0.2339 | -0.2011 | -0.0527 | 0.2989 | 0.0734 | 0.2633** | -0.0878 | 0.1388 | -0.1584 | -0.0964 |
| gender | 0.2086** | -0.2187** | 0.2535*** | -0.2234*** | -0.2093** | -0.0843 | -0.0185 | 0.1274 | 0.0170 | 0.1061 |
| income | -0.0494 | -0.1113 | -0.2036** | -0.0720 | 0.0069 | 0.0667 | -0.1270* | -0.0708 | -0.2740*** | -0.3144*** |
| marriage | -0.2745** | 0.1272 | 0.2089* | -0.2233** | -0.0543 | 0.0923 | -0.1470* | -0.4568*** | -0.3440*** | -0.0677 |
| health | 0.5747** | -0.0731 | 0.3257 | -0.4785** | 0.0050 | -0.1451 | 0.0186 | -0.0443 | 0.0448 | 0.4305* |
| District | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 |
| AIC | | | | | 55270.17 | | | | | |
| BIC | | | | | 56900.04 | | | | | |

Note: Standard errors are omitted. Models include both Linear and Ordered Logit. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

### *5.3 Robustness check*

#### *5.3.1 Different method (o-Probit model)*

To further verify the robustness of our results, we re-estimated the model using an ordered Probit (o-Probit) specification to examine both the direct and indirect effects of Big Five personality traits on residential mobility intentions. The o-Probit results are highly consistent with the baseline ordered Logit (o-logit) estimates (See Tables 4 and 5). The signs and statistical significance of all primary paths, including the direct influence of personality and the indirect psychological mediation pathways, remain unchanged. While the magnitudes of the o-Probit coefficients are slightly smaller than those in the o-logit model, this discrepancy is expected due to the differing variance assumptions of the underlying error distributions. These findings confirm that our conclusions regarding the personality-driven mechanisms of residential mobility are robust and not sensitive to the choice of the link function.

**Table 4 Results of BFI on Residential Mobility using O-Probit Model**

| | (1) intra-city | (2) inter-city | (3) long-term | (4) middle-term | (5) short-term |
|---|---|---|---|---|---|
| extraversion | -0.1388*** | -0.0226 | 0.0837** | 0.0070 | 0.0495 |
| agreeableness | 0.5392*** | 0.3453*** | 0.0040 | 0.1689*** | 0.1524*** |
| conscientiousness | 0.1568*** | -0.0240 | 0.1134*** | 0.0744** | 0.0467 |
| neuroticism | 0.0689** | 0.1075*** | 0.1658*** | 0.0715*** | 0.0318 |
| openness | 0.1913*** | 0.2052*** | 0.1489*** | 0.1673*** | 0.2265*** |
| age | -0.0001 | -0.0058 | -0.0064* | -0.0098*** | 0.0017 |
| education | 0.3654*** | -0.0059 | -0.0466 | -0.0461 | 0.0950 |
| gender | -0.1606*** | -0.0653 | 0.0825* | -0.0224 | 0.0675 |
| income | 0.0474 | -0.1524** | -0.1976*** | -0.1502*** | -0.0598 |
| marriage | 0.0283 | -0.2495*** | -0.0872 | -0.2672*** | -0.3123*** |
| health | -0.2133 | 0.0270 | 0.3611*** | 0.0717 | 0.0185 |
| District | Yes | Yes | Yes | Yes | Yes |
| N | 2000 | 2000 | 2000 | 2000 | 2000 |
| r2 | 0.242509 | 0.109328 | | | |
| r2_p | | | 0.031881 | 0.051431 | 0.056277 |
| chi2 | | | 192.084285 | 286.771625 | 325.190337 |
| F | 27.504839 | 10.545616 | | | |
| p | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

Note: Models (1) and (2) are estimated using OLS. Models (3) - (5) are estimated using Ordered Probit regressions. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table 5 Effects of Personality Traits on Psychological Mediators and Effects of Mediators on Residential Mobility Outcomes using O-Probit Model**

| | (1) excitement | (2) anxiety | (3) social cost | (4) economic cost | (5) physical environment | (6) intra-city | (7) inter-city | (8) long-term | (9) middle-term | (10) short-term |
|---|---|---|---|---|---|---|---|---|---|---|
| extraversion | 0.0764** | -0.1175*** | 0.1341*** | -0.0531 | -0.1194*** | -0.0912** | 0.0006 | 0.0430 | 0.0120 | 0.0646* |
| agreeableness | 0.0816** | 0.1513*** | 0.1913*** | 0.2983*** | 0.2823*** | 0.3699*** | 0.1624*** | 0.0864** | 0.0622 | -0.0775* |
| conscientiousness | -0.0037 | -0.0287 | -0.0369 | 0.0638* | 0.0754** | 0.1234*** | -0.0537 | 0.0409 | 0.0628 | 0.1204*** |
| neuroticism | 0.0705** | 0.4377*** | 0.0953*** | -0.0045 | 0.1139*** | 0.0214 | 0.0522 | 0.0230 | 0.0567* | 0.1424*** |
| openness | 0.3538*** | -0.0312 | 0.2520*** | 0.2682*** | 0.1702*** | 0.0482 | -0.0159 | 0.1302*** | 0.0231 | 0.0181 |
| excitement | | | | | | 0.0845*** | 0.3108*** | 0.1170*** | 0.2138*** | 0.2524*** |
| anxiety | | | | | | 0.0690** | 0.0593* | -0.0050 | 0.0129 | 0.0219 |
| social cost | | | | | | -0.0336 | -0.0006 | 0.0941*** | 0.0218 | 0.1528*** |
| economic cost | | | | | | 0.4660*** | 0.4907*** | 0.2281*** | 0.4148*** | 0.1562*** |
| physical environment | | | | | | 0.1847*** | 0.1448*** | -0.0055 | 0.0161 | -0.0033 |
| age | 0.0004 | -0.0078** | -0.0060* | -0.0006 | 0.0047 | -0.0003 | -0.0060 | 0.0022 | -0.0106*** | -0.0061* |
| education | -0.1344 | -0.1036 | 0.0010 | 0.2264* | 0.0698 | 0.2633** | -0.0878 | 0.0589 | -0.1249 | -0.0518 |
| gender | 0.1122** | -0.1051** | 0.1377*** | -0.1313*** | -0.1170** | -0.0843 | -0.0185 | 0.0733 | -0.0002 | 0.0663 |
| income | -0.0225 | -0.0813 | -0.1011* | -0.0604 | -0.0134 | 0.0667 | -0.1270* | -0.0466 | -0.1470*** | -0.1867*** |
| marriage | -0.1826*** | 0.0891 | 0.1133* | -0.1304** | -0.0245 | 0.0923 | -0.1470* | -0.2901*** | -0.2200*** | -0.0492 |
| health | 0.3522*** | -0.0492 | 0.1938 | -0.2735* | 0.0256 | -0.1451 | 0.0186 | 0.0124 | 0.0944 | 0.3030** |
| District | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 |
| AIC | | | | | 55543.60 | | | | | |
| BIC | | | | | 57173.46 | | | | | |

Note: Standard errors are omitted. Models include both Linear and Ordered Logit. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

*5.3.2 Replacement of key independent variables (BFI-10)*

We also conducted a robustness check by replacing the 20-item Big Five Inventory (BFI-20) with the abbreviated 10-item version (BFI-10). The results remain largely consistent with the baseline model, reinforcing the stability of our primary conclusions (see Tables 6 and 7). Regarding direct effects, the signs and statistical significance of the personality traits show negligible variation. Notably, when using the BFI-10, the coefficients for Conscientiousness become significantly positive across all specifications, strengthening the patterns observed in the original model.

In the mediation analysis, the results demonstrate even greater robustness. The coefficients for Openness and Neuroticism are now consistently significant across both spatial dimensions (intra-city and inter-city) and all temporal horizons (short-, middle-, and long-term). This suggests that the BFI-10, despite its brevity, effectively captures the core psychological constructs relevant to mobility. These findings not only support the overall robustness of our model but also align more closely with theoretical expectations, confirming that the psychological mechanisms linking personality to mobility intentions are well-captured across different measurement scales.

**Table 6 Results of BFI on Residential Mobility Intention using BFI-10 (o-logit model)**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | intra-city | inter-city | long-term | middle-term | short-term |
| extraversion | -0.0160 | 0.0526 | 0.1736*** | 0.0967* | 0.1834*** |
| agreeableness | 0.2640*** | 0.1861*** | 0.0758 | 0.2019*** | 0.1561*** |
| conscientiousness | 0.4077*** | 0.1819*** | 0.2056*** | 0.3099*** | 0.2963*** |
| neuroticism | 0.0671** | 0.1363*** | 0.2419*** | 0.1219*** | 0.0723* |
| openness | 0.1119** | 0.0974** | 0.1191** | 0.1560*** | 0.2785*** |
| age | 0.0007 | -0.0063 | -0.0113** | -0.0168*** | 0.0023 |
| education | 0.4570*** | 0.0629 | -0.0791 | 0.0627 | 0.2419 |
| gender | -0.1810*** | -0.0829 | 0.1246 | -0.0582 | 0.0982 |
| income | 0.0509 | -0.1467** | -0.3290*** | -0.2707*** | -0.0894 |
| marriage | 0.0029 | -0.2839*** | -0.1551 | -0.4619*** | -0.5414*** |
| health | -0.3468* | -0.0694 | 0.5002** | -0.0383 | -0.1147 |
| District | Yes | Yes | Yes | Yes | Yes |
| N | 2000 | 2000 | 2000 | 2000 | 2000 |
| r2 | 0.216644 | 0.097911 | | | |

| | | | | | |
|---|---|---|---|---|---|
| r2_p | | | 0.032010 | 0.053232 | 0.060294 |
| chi2 | | | 192.856335 | 296.814352 | 348.404850 |
| F | 21.287759 | 9.572626 | | | |
| p | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

Note: $^{*}$ $p < 0.10$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$.

**Table 7 Effects of Personality Traits on Psychological Mediators and Effects of Mediators on Residential Mobility Outcomes using BFI-10**

| | (1) excitement | (2) anxiety | (3) social cost | (4) economic cost | (5) physical environment | (6) intra-city | (7) inter-city | (8) long-term | (9) middle-term | (10) short-term |
|---|---|---|---|---|---|---|---|---|---|---|
| extraversion | 0.2630*** | -0.1195* | 0.3682*** | -0.0018 | -0.0671 | -0.0120 | 0.0216 | 0.1294** | 0.0435 | 0.0772 |
| agreeableness | 0.1295* | 0.0553 | 0.3199*** | 0.3007*** | 0.1839*** | 0.1819*** | 0.0907** | 0.0781 | 0.0732 | -0.0158 |
| conscientiousness | 0.1236** | 0.0750 | 0.0805 | 0.4254*** | 0.4975*** | 0.2661*** | 0.0358 | 0.2146*** | 0.1710*** | 0.1360** |
| neuroticism | 0.1739*** | 0.8826*** | 0.1682*** | 0.0374 | 0.2582*** | -0.0039 | 0.0621* | 0.0429 | 0.0613 | 0.1871*** |
| openness | 0.4279*** | -0.0928 | 0.2796*** | 0.3705*** | 0.1972*** | 0.0056 | -0.0568 | 0.1476** | -0.0357 | -0.0165 |
| excitement | | | | | | 0.0920*** | 0.3114*** | 0.2292*** | 0.3998*** | 0.4696*** |
| anxiety | | | | | | 0.0785** | 0.0594* | -0.0164 | 0.0129 | 0.0308 |
| social cost | | | | | | -0.0288 | 0.0007 | 0.1696*** | 0.0399 | 0.2740*** |
| economic cost | | | | | | 0.4836*** | 0.4995*** | 0.4245*** | 0.7902*** | 0.2520*** |
| physical environment | | | | | | 0.1955*** | 0.1489*** | -0.0031 | 0.0431 | -0.0369 |
| age | -0.0012 | -0.0133** | -0.0108* | 0.0000 | 0.0089 | 0.0005 | -0.0063 | 0.0028 | -0.0186*** | -0.0109* |
| education | -0.1421 | -0.2172 | 0.0503 | 0.4428** | 0.1842 | 0.3166** | -0.0653 | 0.1757 | -0.1334 | -0.1373 |
| gender | 0.2030** | -0.2476*** | 0.2162** | -0.2339*** | -0.2113** | -0.0964* | -0.0289 | 0.1197 | 0.0146 | 0.1015 |
| income | -0.0356 | -0.1422 | -0.1956** | -0.0680 | -0.0013 | 0.0710 | -0.1239* | -0.0734 | -0.2691*** | -0.3138*** |
| marriage | -0.3321*** | 0.1199 | 0.1377 | -0.2592** | -0.0743 | 0.0822 | -0.1598* | -0.4729*** | -0.3574*** | -0.0686 |
| health | 0.5147** | -0.3522 | 0.2183 | -0.5840** | -0.1793 | -0.2275 | -0.0218 | -0.1077 | -0.0172 | 0.3655 |
| District | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 |
| AIC | | | | | 55406.44 | | | | | |
| BIC | | | | | 57036.30 | | | | | |

Note: Standard errors are omitted. Models include both Linear and Ordered Logit. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

## *6. Conclusion and Policy Implications*

### *6.1 Conclusion*

Our findings reveal distinct patterns regarding the influence of personality on residential mobility intentions across both **spatial dimensions** (intra-city and inter-city) and **temporal horizons** (short-, middle-, and long-term). The results underscore that personality traits are critical determinants of relocation intentions, exerting their influence through various **psychological pathways**, including emotional excitement, anxiety, perceived social and economic costs, and the valuation of the physical environment.

Specifically, regarding direct effects, Openness is the only trait that demonstrates a consistently significant positive impact on residential mobility intention across both spatial dimensions and all temporal horizons, a finding robustly supported by previous studies (Ciani et al., 2007; Fouarge et al., 2019; Jokela, 2009, 2014). Neuroticism proved significant in most models, consistent with Jokela (2014), suggesting that individuals with high Neuroticism tend to experience chronic dissatisfaction with various residential factors, driving individuals to relocate more frequently in hopes of attaining a more ideal living environment. Although the significant positive results for Agreeableness diverge from Crown et al. (2020) and Jokela (2009), they remain interpretable, as Agreeableness is theoretically recognized as a "contradictory" trait in mobility research that can yield varied outcomes depending on the context. Conscientiousness emerged as a key driver specifically for intra-city residential mobility intention and middle-term and long-term relocation intentions. Extraversion failed to exhibit a consistent direction of influence in this study, suggesting its role may be less stable.

For indirect effect, while openness and agreeableness promote mobility intentions through excitement and economic evaluation, neuroticism primarily drives spatial moves via increased anxiety (Jokela, 2014). Notably, the positive impact of conscientiousness, mediated by the evaluation of economic benefits and physical environment, remains consistent across both intra-city and inter-city relocations. These findings underscore the heterogeneous roles of psychological mediators in shaping individual residential mobility intentions.

### *6.2 Policy Implications*

This research offers valuable insights for urban planning and regional development by elucidating how personality-driven migration shapes spatial personality patterns. The following policy implications are proposed:

#### *6.2.1 Leveraging "growth catalysts" in rapidly developing cities*

The findings suggest that cities experiencing rapid economic growth naturally attract individuals with high levels of Openness, who are drawn by the pursuit of novelty and hedonic excitement. As these traits aggregate, these cities form a unique local "spatial personality" characterized by creativity and risk-taking. Therefore, policymakers in Tier-1 and emerging "New Tier-1" Chinese cities, such as Shanghai, Guangzhou, Shenzhen, and Hangzhou, etc. should prioritize the expansion of creative industries and the establishment of advanced Science and Technology Parks. By fostering environments that reward experimentation, these cities can effectively "lock in" the human capital that matches their developmental trajectory.

#### *6.2.2 Mitigating "Psychological Push Factors" through the Enhancement of Community Well-being*

Our findings reveal that individuals with high Neuroticism exhibit a heightened propensity for residential mobility, driven largely by chronic dissatisfaction with their residential environment, including neighbourhood atmosphere and housing quality. This persistent discontent acts as a powerful psychological push factor, prompting frequent relocations in a pursuit of superior living conditions or educational resources. Crucially, given that anxiety functions as a positive catalyst for relocation rather than a deterrent, policy interventions should shift their focus from purely economic incentives to the promotion of psychological well-being. By fostering "psychological safety" within communities and providing targeted mental health support for highly mobile populations, urban planners can mitigate the disruptive social effects of anxiety-driven migration. Such a shift in governance would not only stabilize residential patterns but also promote more harmonious spatial personality distributions within urban environments.

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*Appendix 1*

| Item | Obs | Sign | item-test correlation | item-rest correlation | average interitem covariance | alpha |
|---|---|---|---|---|---|---|
| **Extraversion-1** | 2000 | + | 0.781 | 0.595 | 0.382 | 0.620 |
| **Extraversion-2** | 2000 | + | 0.837 | 0.651 | 0.304 | 0.574 |
| **Extraversion-3** | 2000 | + | 0.761 | 0.573 | 0.406 | 0.634 |
| **Extraversion-4** | 2000 | - | 0.593 | 0.285 | 0.574 | 0.796 |
| **Test scale** | | | | | **0.416** | **0.725** |

| Item | Obs | Sign | item-test correlation | item-rest correlation | average interitem covariance | alpha |
|---|---|---|---|---|---|---|
| **Agreeableness-1** | 2000 | + | 0.717 | 0.477 | 0.431 | 0.790 |
| **Agreeableness-2** | 2000 | + | 0.824 | 0.666 | 0.346 | 0.691 |
| **Agreeableness-3** | 2000 | + | 0.829 | 0.678 | 0.344 | 0.685 |
| **Agreeableness-4** | 2000 | + | 0.750 | 0.550 | 0.408 | 0.750 |
| **Test scale** | | | | | **0.382** | **0.783** |

| Item | Obs | Sign | item-test correlation | item-rest correlation | average interitem covariance | alpha |
|---|---|---|---|---|---|---|
| **Conscientiousness-1** | 2000 | + | 0.715 | 0.473 | 0.306 | 0.574 |
| **Conscientiousness-2** | 2000 | + | 0.742 | 0.535 | 0.288 | 0.539 |
| **Conscientiousness-3** | 2000 | - | 0.631 | 0.263 | 0.404 | 0.739 |
| **Conscientiousness-4** | 2000 | + | 0.768 | 0.560 | 0.261 | 0.516 |
| **Test scale** | | | | | **0.314** | **0.661** |

| Item | Obs | Sign | item-test correlation | item-rest correlation | average interitem covariance | alpha |
|---|---|---|---|---|---|---|
| **Neuroticism-1** | 2000 | + | 0.757 | 0.534 | 0.462 | 0.654 |
| **Neuroticism-2** | 2000 | - | 0.541 | 0.258 | 0.714 | 0.796 |
| **Neuroticism-3** | 2000 | + | 0.820 | 0.638 | 0.385 | 0.588 |
| **Neuroticism-4** | 2000 | + | 0.832 | 0.660 | 0.371 | 0.574 |
| **Test scale** | | | | | **0.483** | **0.726** |

| Item | Obs | Sign | item-test correlation | item-rest correlation | average interitem covariance | alpha |
|---|---|---|---|---|---|---|
| **Openness-1** | 2000 | + | 0.798 | 0.634 | 0.451 | 0.771 |
| **Openness-2** | 2000 | + | 0.829 | 0.678 | 0.420 | 0.751 |
| **Openness-3** | 2000 | + | 0.821 | 0.661 | 0.423 | 0.759 |
| **Openness-4** | 2000 | + | 0.765 | 0.578 | 0.478 | 0.797 |
| **Test scale** | | | | | **0.443** | **0.817** |

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