

## RESEARCH ARTICLE

## Exploring assimilation as a combination of objective and subjective processes: A case study of rural-to-urban migrants in China

Zhenxiang Chen\*

Department of Sociology, Saint Mary's University, Halifax, Nova Scotia B3H 3C3 Canada

## Abstract

This paper explores assimilation as a two-path process, in which its objective and subjective components are studied simultaneously using structural equation modeling for rural-to-urban migrants in China. This model considers the choice of reference group by the migrants themselves and the assimilation process into the reference group. Structural equation modeling results show that it can be beneficial for assimilation studies to allow migrants to choose their own reference group and to include the subjective path (i.e., assimilation into the migrants' chosen reference group) along with the objective path (i.e., assimilation into the mainstream). This can be achieved as follows: (1) The intertwining between the subjective and objective paths can disentangle assimilation into a process driven by two forces; (2) major stratification factors affecting the objective path through the subjective path may be identified; and (3) the impacts of assimilation on important migrant outcomes, such as subjective well-being, can be studied and separated into subjective and objective components.

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**\*Corresponding author:**Zhenxiang Chen  
(zhenxiang.chen@smu.ca)

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**1. Introduction**

Assimilation, defined as the process in which people with distinct cultural backgrounds adopt the cultural practice of another, has been an essential concept in studying migrants' settlement experience after migrating in the past several decades (Gan, 1973; 1992; Gordon, 1964). The general concept of assimilation has been widely studied in sociology, and the theory has been developed over time. Gordon (1964), in addition to proposing seven dimensions or stages of assimilation, established the fundamental distinction between acculturation and structural assimilation. He also suggested that assimilation is a multidimensional process. Gans (1973) further modified the theory by adding the dynamic or generational dimension to the theory and introduced the idea of "straight line assimilation," in which each successive generation of migrants assimilates further into the mainstream. However, "straight line assimilation" has been criticized, given its underlying premise of linear advancement in assimilation over generations. Recognizing this limitation, Gans (1992) proposed "bumpy line assimilation," meaning that it no longer needs to be linear. Portes and Zhou (1993) further considered the possibility of second-generation immigrants assimilating into different sectors of American society,

some of whom can experience downward assimilation if they assimilate to the bottom of the society.

The contributions of all these major modifications are significant, because they make the assimilation theories more comprehensive and have guided scholars in thinking about the assimilation process of newcomers. Nevertheless, all of these theories are based on a presumption of the reference group that the researchers have chosen for the migrants. For example, Gordon (1964) presumed that the reference group was the group with the core culture, while Gans (1973; 1992) presumed that the reference group was the parents. While not explicitly stated, these presumptions about the reference group assume that assimilation is an objective process. However, assimilation could be a combination of both subjective and objective processes (as described below). Therefore, it is important for assimilation studies to take into account the reference group chosen by the migrants themselves as well as how they assimilate into their chosen group.

This research studies assimilation as a combination of both objective and subjective processes. Specifically, it applies a subject-centered approach (Lee & Zhou, 2015; Zhou *et al.*, 2008). This research considers migrants' selected reference groups and investigates the impact of assimilation into the reference group on assimilation into the mainstream using structural equation modeling. The results show that migrants' choices of the reference group matter for their assimilation into the mainstream, suggesting that assimilation is a mixture of objective and subjective process. First, the choice of the reference group is shown to be subjective and intentional. In addition, assimilation into the mainstream (the objective path) is shown to be largely dependent on the level of assimilation into the reference group (the subjective path). The results also suggest that there are major stratification factors that affect the objective path through the subjective path. The total effects of these factors will not be captured if the subjective path is not considered. Finally, the results also show the differential impacts of both objective and subjective assimilation on subjective well-being as an application after considering and disentangling the two paths. By taking both the objective and subjective paths into account, this research significantly improves our understanding about the assimilation process, thereby contributing to the literature on assimilation.

## 1.1. A theoretical framework

### 1.1.1. The role of the reference group in assimilation

While the precise definition of assimilation can vary, the fundamental idea behind assimilation is an increasing similarity or likeness (Brubaker, 2001). Nevertheless, this

similarity or likeness is always a relative term. For example, while migrants may not be similar to the mainstream residents of the host society, they may be similar to a particular group of citizens within the host society. This is also known as segmented assimilation, in which certain groups of migrants become more similar to the mainstream society, but other groups become similar to the minority society (Porter & Zhou, 1993). Hence, segmentation applies in the sense that not all migrants are becoming similar to the mainstream, but it does not apply in the sense that all migrants are becoming similar to a particular reference group in the host society. In other words, if the researchers focus on migrants who become similar to the minority residents and select the minority residents as the reference group, the migrants are undoubtedly assimilated. However, if the mainstream residents are selected as the reference group, the migrants do not appear to be assimilated. Thus, the central question is "compared to whom?" The assimilation outcome can be significantly different depending on the chosen reference group (Kasnitz *et al.*, 2009). Therefore, the migrant reference group is an indispensable component for either understanding assimilation or even arguing for its existence.

### 1.1.2. Scholar-selected reference groups

Migrant reference groups are usually chosen by migration scholars rather than the subjects – the migrants – of the assimilation process. It is important to clarify that the scholars do not choose the reference group without any basis; to the contrary. For example, Kasnitz *et al.* (2009) argue that the most obvious reference group for the second generation is composed of other young people who share their racial backgrounds. In this case, the foundation is the racial background. However, the critical limitation is that the foundation depends on the scholars' own observations or understandings of migrants. No study on assimilation formulates the reference group by asking migrants which group that they want to choose as their reference group.

By definition, assimilation is about one group adopting the practice of another. There is no explicit statement on whether this "another" should be chosen by the "one group" or someone else. Therefore, based on the definition, scholars may choose the reference group for the migrants and observe their objective assimilation process (i.e., the simple fact that one group becomes more similar to another, whether consciously or unconsciously). This existing practice would not be an issue if assimilation was an entirely objective process. However, if assimilation includes a subjective component, this renders the process explored incomplete. In this case, the reference group chosen by the migrants and their subjective willingness to assimilate into the reference group should be taken into

account. Thus, the central question becomes: is assimilation objective or subjective?

### 1.1.3. Subjective versus objective assimilation

Before analyzing whether assimilation is subjective or objective, it is important to clarify that, here, the terms “subjective” and “objective” differ from what scholars classified as “subjective assimilation” and “external assimilation” (Feather & Rudzitis, 1974; Feather & Wasyluk, 1974; Johnston, 1963; Teske & Nelson, 1974). They defined “subjective assimilation” as similar to acculturation or assimilation in values and attitudes, while external assimilation is assimilation that can be observed. The key difference is that their definitions of “subjective” and “objective” do not depend on whether assimilation is observable or not, or whether it is internal or external. Instead, it focuses on the distinct roles that migrants play in their own assimilation process. If it is a subjective process, then assimilation will depend on who the migrants want to become similar to. If it is an objective process, then assimilation will not depend on the migrants’ choice of reference group.

However, assimilation is a mixture of both subjective and objective processes. Two main arguments support assimilation as a subjective process. The first argument is that migration itself is almost always intentional, with upward social mobility as the most common motivation. With US immigration, for instance, most migrants come with the hope of realizing the American Dream, while others come after seeing the success of their family members or friends who migrate earlier (Bates, 1997; Clark, 2003; Haug, 2008; Light & Bonacich, 1991). Those who come with the American Dream may look to middle-class residents as their reference group. However, those who come with the help of migrant social networks may take earlier migrants from the same origin as their reference group. In either case, they will have a reference group for themselves, which will serve as their target for assimilation. Essentially, migrants can aspire to their reference group and will try to be more like them, as suggested by the reference group theory (Merton, 1968). Thus, their assimilation will be affected by their own choice of reference group. This point has also been tested empirically. In particular, compared with mainstream local residents, migrants aspire to a higher degree of assimilation and achieve it by working longer (Chen, 2021).

The second argument is that how migrants think and feel about their assimilation will affect their feelings of belonging, which later affects their assimilation. People’s sense of belonging is highly determined by group memberships, which are formed by similarity (Bersheid &

Reis, 1998). They may feel that they are similar to the local residents with whom they interact and, thus, may want to have a bond with them. However, they may not feel the same if they compare themselves with another group of residents from different classes with whom they hardly interact. Kasnitz *et al.* (2009) argued that migrants would have different feelings compared to different groups. In this case, the sense of belonging may not be built up. Based on Gordon’s theory of multidimensional assimilation, these feelings of belonging can be part of the identificational assimilation stage (Gordon, 1964), so how they feel about assimilation will affect their assimilation. In fact, as Schachter (2016) argues, assimilation is a process in which what he called symbolic belonging – developing a subjective sense of social similarity with one another – is part of the outcome. This argument is also further supported by the idea that assimilation includes a subjective component based on identification with members of the host group (Frazier, 1957). In this case, *which* host group, they choose will affect their identification process and thus affect their assimilation.

Two arguments also support assimilation as an objective process. The first posits that while migration is intentional, assimilation may not be. Both acculturation and assimilation can be unintentional outcomes (Alba, 1999; Gans, 2007). When economic assimilation happens consciously with the goal of higher social mobility, cultural assimilation usually happens unconsciously through interactions (for the first generation) and education (for the second and later generations) (Gordon, 1964). Thus, a part of the assimilation can be entirely independent of whatever migrants do, think, and feel. There is a part of assimilation that occurs without subjective willingness. In the second argument, assimilation can be an objective phenomenon. Even if the process is subjective, part of the outcome can always be objective, making it possible to observe the phenomenon that migrants are becoming more similar to destination residents.

Although assimilation has an objective component, it is misleading and incomplete to rely on selecting the migrant reference group solely from the scholars’ perspective. For example, scholars may observe that migrants are becoming more similar to Group A, but the migrants may pick Group B as their reference group for assimilation and become more similar to Group B, which happens to be similar to Group A. As a result, it may not be fully accurate to argue that migrants are assimilating into Group A. In this example, assimilation into A is objective assimilation (i.e., assimilation that scholars observe), while assimilation to B is subjective assimilation (i.e., assimilation that migrants aim to realize). The potential consequences of omitting

the subjective assimilation process include the bias with the wrong comparison group, and the failure to detect the right comparison group. This raises doubts about whether this seemingly objective phenomenon is truly objective. In other words, the mere observation of migrants who are similar to Group A may not necessarily be interpreted as assimilation. Assimilation should be treated as including both objective and subjective processes, rather than a purely objective process. This is why it is important to account for the migrant-selected reference group and their assimilation into their chosen reference group. This provides a more comprehensive understanding of assimilation and makes it possible to explore how the two paths are intertwined, how factors affect assimilation through different paths, and how assimilation affects outcomes through different paths.

## 1.2. Hypotheses

The primary goal is to explore assimilation as the combination of subjective and objective paths. Based on the proposed theoretical framework, the choice of the reference group is expected to be subjective or intentional. The following hypothesis tests this idea:

*Hypothesis 1: Migrants who intend to become permanent migrants are willing to choose local residents as their reference group.*

In addition, because the migrants may consciously assimilate into the reference group while unconsciously assimilating into the mainstream, the latter (i.e., objective process) is likely affected by the assimilation into the reference group (i.e., subjective). Thus, the following hypothesis is proposed:

*Hypothesis 2: Economic assimilation into the mainstream is mainly dependent on the economic assimilation into the reference group.*

Moreover, by considering the subjective path in assimilation, there could be pathways that affect assimilation into the mainstream by affecting assimilation into the reference group. This gives rise to the following hypothesis:

*Hypothesis 3: There are major stratification factors, such as gender and education, that affect economic assimilation into the mainstream through economic assimilation into the reference group.*

Finally, after disentangling the subjective path from the objective path, their further impacts can be explored. Since economic assimilation already reflects objective well-being, it is helpful to investigate its impact on subjective well-being as well. According to the literature, assimilation or integration has a positive impact on subjective well-being (Angelini *et al.*, 2015; Herrero &

Gracia, 2011; Neto, 1995; Zheng *et al.*, 2004). Moreover, relative income compared to the reference group is more likely to affect subjective well-being than absolute income (Ferrer-i-Carbonell, 2005; Luttmer, 2005; McBride, 2001). Therefore, while both may promote subjective well-being, it is likely that the subjective path of assimilation will have a stronger impact on subjective well-being than the objective path of assimilation. The corresponding hypothesis is proposed:

*Hypothesis 4: Both economic assimilations into the mainstream and into the reference group have positive impacts on subjective well-being, but the impact of economic assimilation on the reference group is stronger.*

## 1.3. China's rural-to-urban migration: assimilation

To test the hypotheses, this paper focuses on China's rural-to-urban migration. It tests whether the concept of assimilation can be applied to China's internal migration, because internal migrants may not face the same barriers due to citizenship and significant cultural differences as international migrants.

In China, rural-to-urban migrants do face strong institutional, economic, cultural, and social barriers once they migrate to the host city, largely due to the household registration system – *Hukou* (Wang & Fan, 2012). This system restricts where people can live and which resources and benefits, they can access. Although it is not as formidable as citizenship, it does put these internal migrants in a similar position as international migrants. Moreover, rural-to-urban migrants share a key similarity with most disadvantaged international migrants – economic and social marginalization (Wong *et al.*, 2007). They usually take on low-skilled occupations that are physically demanding and dangerous (Yang & Guo, 1996). Their occupational outcomes largely depend on whether they can change their hukou status, similar to the case of changing legal status in international migration (Chen *et al.*, 2022). Furthermore, language and dialects differ significantly across regions in China. Finally, there are significant differences between rural and urban culture (Zhong *et al.*, 2016). The applicability of assimilation, integration, separation, and marginalization has been tested in China's social context and has shown that both assimilation and integration are applicable (Xie *et al.*, 2016).

## 2. Data and methods

### 2.1. Data sources

This study used the Chinese Household Income Project for the year 2013. The sample was collected using a systematic

sampling method with three layers of east, center, and west, covering 15 provinces, 126 cities, and 234 counties. In total, it includes 18,948 households and 64,777 individuals. The 18,948 households are comprised 7175 urban households, 11,013 rural households, and 760 migrant households, with 2210 migrant samples in total. However, the analyses were restricted to heads of households and their spouses, because the data on subjective well-being were only collected from them. The total eligible sample size is 726. Among these 726 respondents, only 367 provided a clear choice of their reference group who are the total valid sample size of the present study.

The sample selection procedure may raise a concern about external validity. The distribution of the basic characteristics of each sample group (selected and all) was compared (Table A1) to understand the extent that the selected samples can be representative of the entire migrant sample in the data. The distributions are almost identical between the selected samples and all migrant samples, suggesting that the selected samples are likely representative of all migrant samples in the data.

## 2.2. Reference group and assimilation measures

The survey includes a question about the respondents' reference group: "Generally speaking, when you evaluate your family's economic and life condition, with whom are you comparing mainly?" The responses include "relatives and friends, people in the same community/street/village, people in the same district/county, people in urban areas, people in rural areas, people in the country, and unsure/no answer." It is important to understand these answers based on the Chinese context. People in the same community/street/village are probably refer to the migrants' neighbors, who may include rural-to-urban migrants and local residents in the specific urban areas, where the respondents are living, given their marginalized status (Feng, *et al.*, 2002; Wong, *et al.*, 2007). People in the same district/county are most likely urban residents and may include some migrants in the specific urban areas, where the respondents live. People in urban areas are the "urban residents" only. People in rural areas most likely refer to people in the home province, because migrants were mainly exposed to rural areas in their home province. The inclusion of rural people as one of the reference groups is essential, because it is normal for migrants to form a dual frame of reference – there is a tendency for migrants to evaluate their lives in the host destination by referencing the living conditions in their home location (Waldinger & Lichter, 2003). Within this context, the variable was reconstructed and changed from categorical to ordinal, with 1 = "rural areas," 2 = "people in the same community/street/village," 3 = "people in the same district/county," and

4 = "people in urban areas." Thus, a higher value reflects a stronger willingness to become "urban residents."

Since a clear reference group must be identified to measure assimilation, the other three options were excluded, because it is difficult to identify the reference groups that the migrants are referring to. "Relatives and friends," may refer to "relatives and friends" in the host destination or the home origin. For "people in the country," the reference group is too general to make sense. Finally, for those who choose "unsure/no answer," any reference group can be a potential option, and their reference group is essentially not observed. These ambiguous reference groups were not imputed because, given the significant role of selecting the reference group, the imputation (for example, multiple imputations) on the reference group neither is appropriate nor leads to more accurate results.

This research only focuses on economic assimilation. As mentioned previously, there are other assimilation dimensions and income may be instrumental. Nevertheless, given the limitation of the data and the importance of economic assimilation in the literature, the analysis will center on economic assimilation. Exogenous variables that are highly connected with income were controlled to further alleviate the instrumental component of income in the assimilation. Economic status was measured by yearly income as suggested in the literature (Brown, 2006; Fischer-Neumann, 2014; Kalmijn, 1996; Tienda, 1980). Education is another common measure of assimilation for second-generation migrants (Brown, 2006; Fischer-Neumann, 2014; Jacob & Kalter, 2013; Kalmijn, 1996; Weller, 1974). The information on education in contracting the outcome variable was not used, because the samples are composed of mostly first-generation migrants with education levels set before migration.

The gap or "distance" between migrants and the comparison group was constructed to transform the yearly income into economic assimilation (Chen & Liu, 2018). This generated a variable to measure the gap between the respondent's yearly income and the average income of the reference group. While the average income of the reference group is not provided directly, the data include multilevel geographical information on where each respondent was residing at the time of the survey. Moreover, the data also provide the migrants' province of origin. This information was used to trace and identify people in the migrants' place of origin. For those respondents who selected "people in rural areas" as their reference group, their income was measured by the average income level of the rural residents in their province of origin. For respondents who selected "people in the community/street/village" or "people in the district/county" as their reference group, their income

was measured by the average income level of both urban residents and migrants living in the same street or in the same county. Finally, for respondents who selected “people in urban areas,” the income was measured by the average income level of urban residents (only) living in the same province.

Because “people in urban areas” represent “urban residents,” they were also used to represent the mainstream population in urban areas. Thus, the average income level of the mainstream population in urban areas is the same as that of urban residents living in the same province. All of the 64,777 individuals are included in these averages. While the National Bureau of Statistics of China (NBS) can provide the average income level for the urban population, it cannot provide this information at different levels (for example, same street or same county in an urban area). The assimilation was constructed by measuring the gap between the respondent’s yearly income and these averages. Finally, these assimilation measures were transformed into interval variables with 12 scales to deal with the few outliers.

### 2.3. Measures of subjective well-being

Subjective well-being is captured by how people experience and evaluate their lives (Stone & Mackie, 2013). The respondents were asked three questions: (1) All things considered; do you feel happy? (2) Which of the following do you think best describes the living standard of your household? and (3) Which of the following do you think best describes the economic condition of your household? The responses to this set of questions are reverse coded so that 1 = “not happy at all” and 5 = “very happy” for the first question, 1 = “does not have enough to live comfortably and cannot afford some basic things” to 3 = “lives very comfortably and can afford extra things” for the second question, and 1 = “cannot deal with some basic economic shocks to your household” to 4 = “can deal with all economic shocks to your household” for the third question.

Two adjustments were made to these three variables. First, for happiness, “not happy at all” and “not very happy” were merged as one category “not happy,” and for capable, “can deal with many economic shocks to your household” and “can deal with all economic shocks to your household” were merged as one category “capable,” because both “not happy at all” and “can deal with all economic shocks to your household” only have a handful of respondents choosing them. Second, for comfort and capable, there is one relatively neutral category, with more than 70% of respondents choosing it. For comfort, it is the option “is basically comfortable but cannot afford many extra things,” and for capable, it is the option “cannot deal with many economic shocks, but can deal with some basic economic

shocks to your household.” Both comfort and capable were adjusted based on the subjective social standing of the respondents (“Compared to the average living standards of households in your city/town/county, do you consider your household’s living standards to be...”) so that both have five scales. In particular, the options that more than 70% of respondents picked were split into two categories depending on whether their living standards are below or above the average.

These three variables then form the latent variable in structural equation modeling. This is also one of the two reasons why this paper used structural equation modeling. A more detailed justification for the structural equation modeling is presented in the Data Analytical Strategies section. Factor analysis was implemented to check for internal consistency. All of the factor loadings are above 0.45 (factor loading = 0.45 for happiness, factor loading = 0.71 for capable, and factor loading = 0.75 for comfort). The internal consistency is also verified with Cronbach’s alpha of 0.70. Although happiness has a lower factor loading, it should be included as it is the most common measurement for subjective well-being (Krueger & Schkade, 2008).

### 2.4. Control variables

The basic demographic variables include the respondents’ age, gender (male = 1), and education. Other variables include the year of migration and the motivation for permanent migration. The year of migration is not given directly; however, the number of years since the initial migration was estimated using the year the respondent left and the present year. A proxy measured permanent migration motivation: the willingness of migrants to stay in the city permanently if they were granted a local *hukou* quota. In addition, the average income for the mainstream urban population is also controlled for assimilation into the mainstream account for provincial differences.

### 2.5. Data analysis strategies

Structural equation modeling was applied to explore assimilation as a combination of objective and subjective processes, for two reasons. The first is the ability to estimate the direct, the indirect, and the total effects. This is essential to exploring assimilation as a combination of both objective and subjective processes. The second is that subjective well-being is a latent variable. The working model is shown in Figure 1. The choice of the reference group is expected to directly affect both economic assimilation into the reference group and economic assimilation into the mainstream. Nevertheless, the effect could be weak because, on the one hand, migrants are more motivated to assimilate with urban residents, while, on the other hand, their target is harder to reach. It will, then, depend on the portion

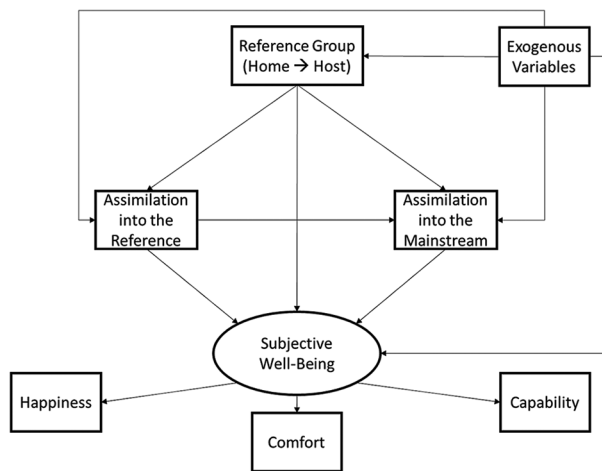


Figure 1. Framework of assimilation of rural-to-urban migration

of direct impact being canceled out by the two forces. In either case, it is important to consider this subjective choice in the process. The subjective path of economic assimilation is reflected by economic assimilation into the reference group, while the objective path of economic assimilation is reflected by economic assimilation into the mainstream. The link between economic assimilation into the reference group and economic assimilation into the mainstream is where the two paths intertwine and show the percentage of objective outcomes explained by the subjective process. The link between the reference group and subjective well-being was included since the reference group is shown to have a strong effect on subjective well-being (Knight & Gunatilaka, 2010). Some of the impacts of exogenous factors on the objective path are reflected in the subjective path. Finally, the theory of subjective well-being was combined and tested. The results show differential impacts on subjective well-being from each path.

The working model for this analysis is tested using the maximum-likelihood estimation for structural equation modeling in Stata 17. However, the multivariate normality assumption should be satisfied to apply the maximum-likelihood estimation. Mardia’s multivariate normality tests (skewness and kurtosis) were applied to test the multivariate normality assumption. The results show that the multivariate normality assumption is not satisfied. Therefore, the Satorra–Bentler estimation was applied to adjust for the non-normality (Satorra & Bentler, 1994).

The goodness of fit of models was evaluated using the Satorra–Bentler scaled Chi-square test, the Satorra–Bentler scaled comparative fit index (CFI), and the Satorra–Bentler scaled root mean square error of approximation (RMSEA). A CFI > 0.95 and an RMSEA less than 0.05 are considered a good model fit.

### 3. Results

The summary statistics of these variables based on the chosen reference group are shown in Table 1. Notably, migrants with different reference groups do differ. In particular, migrants, who selected a reference group closer to the mainstream reference group (i.e., urban people), tended to be younger or male, and had higher education levels, a longer migration duration, and a stronger intention to stay. It was observed that the economic assimilation into the reference group differed across the reference groups (Table 1). However, the economic assimilation into the mainstream is generally higher for those who chose reference groups closer to the mainstream reference group. The patterns in subjective well-being measures are less clear.

The results with unstandardized coefficients from structural equation modeling are shown in Table 2, and the results with standardized coefficients are shown in Table 3. While both standardized and unstandardized coefficients are shown, because they present different and mutually exclusive information, this research focuses on the unstandardized coefficients, given its purpose. Specifically, the goal is not to compare the size of the effects, but mostly to test whether the effects are significant or not. The model provides a good fit for the data (Chi-square test,  $P = 0.188$ ; CFI = 0.986; RMSEA = 0.026). However, alternative models may exist. These may include 1) the exclusion of the link between the subjective and objective path and 2) the traditional model, in which neither the reference group nor the subjective path is considered.

A comparison of the three models on the basis of the goodness of fit resulted in the following outcomes, as shown in Table 4: proposed model (Chi-square test,  $P = 0.188$ ; CFI = 0.986; RMSEA = 0.026); alternative model 1 (Chi-square test,  $P = 0.000$ ; CFI = 0.739; RMSEA = 0.111); and alternative model 2 (Chi-square test,  $P = 0.000$ ; CFI = 0.736; RMSEA = 0.105). These results suggest that the proposed model is the best fit for these data. This also indicates that it is important to account for both subjective and objective paths in the assimilation process since the proposed model, based on the theoretical framework, fits much better than the traditional assimilation models.

The analysis of the proposed structural equation modeling results is described below. The coefficients for age ( $\beta_{d/t} = -0.202$ ), education ( $\beta_{d/t} = 0.114$ ), and intention to permanently migrate ( $\beta_{d/t} = 0.290$ ) on the reference group indicate that the reference group choice is highly subjective and intentional. This is because the intention to permanently migrate has the strongest impact on choosing a reference group that is closer to the mainstream urban residents. These results support Hypothesis 1 that migrants

**Table 1. Sample characteristics by reference group**

Variable	Rural	Same community	Same district	Urban
Age				
17 – 40	57%	61%	70%	70%
40 – 65	41%	37%	28%	29%
65+	2%	2%	2%	1%
Gender				
Male	51%	48%	47%	47%
Female	49%	52%	53%	53%
Education				
Elementary or below	36%	30%	26%	25%
Middle school	44%	48%	35%	45%
High school	10%	12%	21%	11%
College or above	10%	10%	18%	20%
Years of Migration				
0 – 5 years	70%	73%	66%	64%
5 – 10 years	10%	10%	11%	15%
10 – 20 years	15%	11%	21%	16%
20+years	5%	7%	2%	5%
Intention to stay				
No	85%	77%	80%	68%
Yes	15%	23%	20%	32%
Economic Assimilation				
Assimilation into the reference group	0.64	-2.12	0.16	0.25
Assimilation into the mainstream	-0.12	-0.13	0.34	0.25
Subjective well-being				
Happiness	2.56	2.74	2.50	2.47
Capable	2.74	3.02	2.91	2.86
Comfort	2.48	2.71	2.40	2.54
N	86	171	61	49

Note: Few missing data were replaced using the mean at the closest geographical unit.

who intend to become permanent migrants are willing to choose local residents as their reference group. While the intention to permanently migrate may be affected by assimilation into the mainstream instead of the other way around, this potential limitation may not undermine the conclusion. The selected reference group is intentional as long as the positive correlation between the intention to permanently migrate and the reference group choice is confirmed. For example, suppose those with a stronger intention to settle are more likely to choose mainstream urban residents as their reference group. This strongly indicates that the reference group choice itself is also

intentional. In addition, the coefficient on age shows that older migrants (either temporary or permanent) may be more likely to compare themselves with people from the place of origin rather than residents in the host destination. The coefficient on education suggests that the selected reference group is also based on capability and inspiration. That is, migrants with more education may be more capable and inspired to integrate into the city.

This focus on factors that affect economic assimilation into the mainstream and especially the link between the objective and the subjective path makes it clear that economic assimilation into the mainstream is highly determined by economic assimilation into the reference group ( $\beta_{dt} = 0.350$ ). This finding supports Hypothesis 2 that economic assimilation into the mainstream is mainly dependent on the economic assimilation into the reference group. In addition, while not many factors affect economic assimilation into the mainstream through the economic assimilation into the reference group (i.e., affecting the objective path through the subjective path), the indirect coefficient for gender ( $\beta_i = 0.258$ ) on the mainstream economic assimilation suggests that the subjective path should be taken into account, not only because it directly affects the objective path but also because other factors may affect the objective path through the subjective path. This finding supports Hypothesis 3 that a major stratification factor like gender can affect the economic assimilation into the mainstream through economic assimilation into the reference group. As shown in Table 2, around 30% of the total impact may be omitted if the subjective path is not considered. This two-path approach also shows that men are more inspired to assimilate with the people to whom they compare themselves and may be more capable of assimilating into the mainstream.

Finally, an examination of the factors affecting subjective well-being shows that, economic assimilation into the mainstream ( $\beta_{dt} = 0.063$ ) and economic assimilation into the reference group ( $\beta_i = 0.022$ ), both affect subjective well-being, but in different ways. It is helpful to look at the standardized coefficients to understand better how their impacts differ in size. The standardized coefficients show that the direct or the total effect of economic assimilation into the mainstream is 0.294, while the indirect effect of economic assimilation into the reference group is 0.138. Economic assimilation into the mainstream affects it directly, while economic assimilation into the reference group produces an indirect effect. This finding rejects Hypothesis 4 and indicates that subjective well-being is affected by economic assimilation into the mainstream. This is probably because there are positive externalities accompanied by a higher level of economic assimilation into the mainstream. While testing this hypothesis is beyond the



**Table 2. Direct, indirect, and total effects: results of sem (unstandardized)**

	Reference group	Assimilation into the reference			Assimilation into the mainstream			Subjective Well-being		
	Direct/Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Exogenous variables										
Age	-0.202*	-0.002	0.007	0.005	-0.222	-0.006	-0.228	0.007	-0.009	0.002
Gender (male = 1)	0.055	0.735***	-0.002	0.733***	0.586***	0.258***	0.844***	-0.058	0.041**	-0.017
Education	0.114*	0.224	-0.004	0.220	0.117	0.081	0.199*	0.006	0.007	0.013
Years of migration	-0.015	-0.003	0.001	-0.002	0.048	-0.002	0.046	0.008	0.004	0.012
Intention to stay	0.290*	-	-0.010	-0.010	-0.245	0.007	-0.238	0.141**	-0.022	0.119*
Mainstream income	-	-	-	-	-0.093***	-	-0.093***	-	-0.006**	-0.006**
Mediating variables										
Reference group	-	-0.033	-	-0.033	0.036	-0.012	0.024	-0.025	0.002	-0.023
Assimilation into the reference group	-	-	-	-	0.350***	-	0.350***	-0.014	0.022***	0.008
Assimilation into the mainstream	-	-	-	-	-	-	-	0.063***	-	0.063***
Model fit										
Chi-square test	0.188									
RMSEA	0.026									
CFI	0.986									
N	367									

Note: \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ . Standard errors,  $P$  values, Model Fit statistics are all based on Satorra–Bentler adjustments.

**Table 3. Direct, indirect, and total effects: Results of sem (standardized)**

	Reference Group	Assimilation into the reference group			Assimilation into the mainstream			Subjective well-being		
	Direct/Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Exogenous variables										
Age	-0.114*	-0.001	0.002	0.001	-0.074	-0.002	-0.076	0.012	-0.015	-0.003
Gender (male = 1)	0.029	0.173***	-0.001	0.172***	0.184***	0.081***	0.265***	-0.086	0.061**	-0.025
Education	0.110*	0.096	-0.002	0.094	0.067	0.046	0.113*	0.015	0.017	0.032
Years of migration	-0.016	-0.002	0.001	-0.001	0.030	-0.001	0.029	0.024	0.010	0.034
Intention to stay	0.137*	-	-0.002	-0.002	-0.068	0.002	-0.066	0.186**	-0.029	0.157*
Mainstream income	-	-	-	-	-0.177***	-	-0.177***	-	-0.052**	-0.052**
Mediating variables										
Reference group	-	-0.015	-	-0.015	0.021	-0.007	0.014	-0.071	0.006	0.065
Assimilation into the reference group	-	-	-	-	0.468***	-	0.468***	-0.086	0.138***	0.052
Assimilation into the mainstream	-	-	-	-	-	-	-	0.294***	-	0.294***
Model fit										
Chi-square test	0.188									
RMSEA	0.026									
CFI	0.986									
N	367									

Note: \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ . Standard errors,  $P$ -values, model fit statistics are all based on Satorra–Bentler adjustments

**Table 4. Goodness of fit by model**

	Main model	Alternative Model 1 (Link between subjective and objective path excluded)	Alternative Model 2 (Neither reference group nor subjective path included)
Model fit			
Chi-square test (P-value)	0.188	0.000	0.000
RMSEA	0.026	0.111	0.105
CFI	0.986	0.739	0.736
N		367	

Note: \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ . Standard errors,  $P$ -values, Model Fit statistics are all based on Satorra–Bentler adjustments.

scope of this paper, this argument, as an example, shows how the inclusion of the two-path assimilation model can benefit the study of assimilation in general.

#### 4. Discussion

Using a dataset of rural-to-urban migrants in China, this study explored whether assimilation is a combination of both objective and subjective processes, with four specific hypotheses (1) migrants who intend to become permanent migrants are willing to choose local residents as their reference group, (2) economic assimilation into the mainstream is mainly dependent on the economic assimilation into the reference group, (3) there are major stratification factors that affect economic assimilation into the mainstream through economic assimilation into the reference group, and (4) both economic assimilations into the mainstream and into the reference group have positive impacts on subjective well-being, but the impact of economic assimilation on the reference group is stronger. Overall, our empirical evidence supports Hypotheses 1 to 3, whereas it rejects Hypothesis 4.

Specifically, this study shows that assimilation is not purely an objective process, as the major assimilation theories have implicitly assumed (Gans, 1973; Gordon, 1964; Portes & Zhou, 1993). From the researchers' perspective, it is important not to simply assign a reference group to a group of migrants and explore whether they are assimilated. Nevertheless, although such methodology can provide insight on objective assimilation outcomes – whether migrants are truly assimilated into the reference group selected by the researchers, this approach will blur the process of assimilation. As shown in this paper, the objective assimilation outcomes depend on the subjective assimilation process – migrants assimilating into their chosen reference group. Migrants' aspiration

and willingness, stemming from their intentional choice of reference group, could be the main force driving their outcomes (Chen, 2021; Chen & Fan, 2022; Zhou *et al.*, 2008). However, this process could be overlooked and possibly even omitted if the subjective assimilation process is not considered.

Our results of the effects of subjective and objective assimilation on subjective well-being also suggest meaningful findings in how the migrants' subjective well-being is formed. The literature suggests that the migrants' subjective well-being is highly shaped by their relative status (for example, relative income), which is affected by their choice of reference group (Knight & Gunatilaka, 2010). This paper shows that the migrants' subjective well-being is mainly influenced by their relative status compared to the mainstream host residents (in this case, urban residents), despite their relative status compared to their chosen reference group. Therefore, regardless of whether or not the migrants choose the mainstream host residents as their reference group, their subjective well-being will be affected due to their observations of or interactions with the mainstream host residents.

Finally, the empirical findings focus on economic assimilation, which may be the most important dimension of assimilation. The subjective and objective processes may differ for other dimensions of assimilation. Nonetheless, this does not mean that the value of accounting for both subjective and objective processes is only restricted to economic assimilation. This theoretical framework may apply to most, if not all, of the assimilation dimensions. For example, with cultural assimilation (acculturation), we may expect a stronger subjective process. We have learned that intrinsic acculturation (i.e., acculturation in values) could be hard for rural-to-urban migrants (Chen & Liu, 2018). Nonetheless, this could be largely due to their chosen reference group. In sum, different conclusions could have been reached by accounting for the subjective acculturation process. To fully understand the assimilation process, researchers must not simply assign a reference group to a group of migrants and explore whether they are assimilated. Assimilation is a mixture of objective and subjective processes.

When interpreting our results, following caveats should be taken into account. First and foremost, there are about half of the heads of the sample households and their spouse who did not answer the question on subjective well-being, which may bias our results. Nevertheless, we expected such biases might not be substantial in that their profiles in other key study variables are more or less the same as those who answered the question. Second, relatedly, even if all samples answered the subjective well-

being question, the sample size is still relatively small. Future relatively large sample surveys and studies are clearly warranted to verify our results. Third, due to the data limitation, characteristics of local destinations, which could shape migrants' reference group choice, are not accounted in the analyses. These may include the welfare system in the destination, neighborhood conditions in the destination, and local attitudes toward migrants. Fourth, the choice of reference group may change over time. Because this research is based on cross-sectional data, it cannot account for this dynamism. If panel data with reference group choice of migrants are available, future studies can rely on such data and explore factors that affect the change of reference group choice. That is, how migrants' choice of reference group may change and in what circumstances, they will change their choice of the reference group.

Despite of these limitations, our findings can provide some important policy implications to facilitate migrants' assimilation. By differentiating between subjective and objective paths, policymakers can efficiently target each path separately. For example, they may come up with policies that inspire migrants to assimilate into the reference group (or aspiring migrants may pick the mainstream as their reference group) and thus the mainstream through the subjective path, or come up with policies that can elevate the migrants' conditions and expand their ability to assimilate into the mainstream. This is not possible without implementing the two-path approach, given how specifically they intertwine. While the migrants' conditions are elevated, they may be more inspired to assimilate. The two-path approach can identify the complete structure, and an efficient policy can follow.

For future research, it is important to apply this two-path approach to different contexts to (1) better understand, test, and improve the model in general and (2) further explore the process of assimilation with the two-dimensional lens. For example, as shown, the role of gender is significant in the economic assimilation of rural-to-urban migrants in China. Therefore, further investigation is needed to fully understand gender differences in terms of assimilation outcomes. If men are more inspired to assimilate into the reference group and more capable of assimilating into the mainstream, what could be the reasons? Is it due to self-esteem and fewer occupational barriers or something else? Future research should also explore the different dimensions of assimilation. While this paper focuses on economic assimilation, objective and subjective processes could differ for other dimensions, such as cultural assimilation (or acculturation). Which of the two processes is more important for the other dimensions?

How are the two processes related in other dimensions? These questions will be important to explore and will be hard to answer without fully applying the lens of this dual framework to different dimensions of assimilation.

## 5. Conclusions

In sum, this research shows that assimilation is not purely an objective process, as the major assimilation theories have implicitly assumed and highlight that assimilation studies can generally benefit by allowing migrants to choose their own reference group and then including the subjective path along with the objective path in the following ways: (1) understanding assimilation as a two-force driven process which includes both objective and subjective paths; (2) identifying major stratification factors that not only directly affect objective assimilation but also indirectly affect objective assimilation through subjective assimilation; and (3) separating the impacts of assimilation on migrants outcomes such as subjective well-being into subjective and objective components.

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## Conflict of interest

The author declares no competing of interest.

## Author contributions

This is a single-authored paper.

## Ethics approval and consent to participate

Not applicable.

## Consent for publication

Not applicable.

## Availability of data

The data that support the findings of this study are openly available in "China Institute for Income Distribution" at <http://ciidbnu.org/chip/chips.asp?year=2013>.

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**Appendix**

**Table A1. Sample selection representativeness**

Variable	All migrant samples	Migrant sample used
Age		
17 – 40	64%	63%
40 – 65	34%	35%
65+	2%	2%
Gender		
Male	48%	49%
Female	52%	51%
Education		
Elementary or below	29%	30%
Middle School	43%	45%
High School	14%	12%
College or above	14%	13%
Years of Migration		
0 – 5 years	67%	70%
5 – 10 years	12%	11%
10 – 20 years	16%	14%
20+years	5%	5%
Intention to stay		
No	75%	78%
Yes	25%	22%
N	2210	367

Note: Few missing data were replaced using the mean at the closest geographical unit