



Testing the housing and transportation affordability index in a developing world context: A sustainability comparison of central and suburban districts in Qom, Iran

Ali A. Isalou^a, Todd Litman^b, Behzad Shahmoradi^{c,*}

^a Department of Urban Planning, Faculty of Art & Architecture, University of Kurdistan, Sanandaj, Iran

^b Executive Director Victoria Transport Policy Institute, Victoria, British Columbia, Canada

^c Kurdistan Environmental Health Research Center, Kurdistan University of Medical Sciences, Sanandaj, Kurdistan, Iran

ARTICLE INFO

Available online 13 March 2014

Keywords:

Housing affordability

Accessibility

Households

Qom City

ABSTRACT

Housing affordability is an important policy goal. However, housing is not truly affordable if located in an inaccessible area with high transportation costs. Increasing the supply of affordable housing in accessible locations helps achieve multiple planning objectives: it reduces transportation costs, improves economic opportunity for disadvantaged groups, reduces accident risks, conserves energy and reduces pollution emissions. In recent years researchers have developed analysis methods for measuring total housing and transportation costs for different locations within cities, called a Housing and Transportation (H+T) Affordability Index. This study applies this type of analysis in Qom City, Iran. The results indicate that suburban-area households spend more than 57% of their monthly income on housing and transport, significantly more than the 45% spent by households in the central district. This is consistent with research results in other urban areas. This illustrates the feasibility of applying housing and transportation affordability analysis in developing country cities to help identify truly affordable and sustainable development.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Governments around the world are committed to achieving sustainable development, which balances economic, environmental, and social objectives. Most governments are also committed to increasing housing affordability (Suhaida et al., 2010, 2011). Consequently, academics, professionals, and decision makers are working to develop practical housing policies that increase affordable housing supply (Aribigbola, 2011). These two issues are related. Housing design and location decisions can have various economic, social and environmental impacts. Sustainable development, therefore, requires that affordable housing be designed and located to support sustainability objectives, including energy conservation, emission reductions, economic opportunity for disadvantaged people, public safety and health, infrastructure cost efficiency, and habitat preservation (Wallbaum et al., 2012). In particular, increasing the portion of housing located in accessible communities, where residents can access necessary services and

activities with minimal automobile travel, tends to support sustainable development.

During the last four decades the government of Iran has considered various policies to increase affordable housing, including programs that renovate and improve housing within existing cities and development of new suburban communities at the urban fringe (Azizi, 2006).

There are various ways to define and measure affordability that can result in very different conclusions concerning which housing development policies are truly optimal. Housing costs are often evaluated alone, which encourages development on cheaper land at the urban fringe. However, such locations tend to have poor accessibility, they are far from services and activities such as education and employment, and often have poor walking conditions and public transit services. As a result, such locations have high transportation costs. In response to this concern many experts now recommend that affordability be measured using an index that considers both housing and transport costs, sometimes called an **H+T Affordability Index** (CNT, 2012).

This article explores these issues. It describes various ways of evaluating housing affordability, applies an **H+T Affordability Index** to Qom City, Iran, and discusses the implementation of this research for sustainable development policies.

* Corresponding author. Tel.: +98 8716131426, Mobile: +98 9187705355; fax: +98 8716625131.

E-mail addresses: bshahmoradi@gmail.com, bshahmoradi@muk.ac.ir (B. Shahmoradi).

2. Literature review

2.1. Housing affordability

Housing affordability is an important issue for developers, planners and local officials (Mulliner and Maliene, 2011; Nelson et al., 2002; O'Flynn, 2011). The term *housing affordability* refers broadly to the ability of households, particularly lower-income households, to pay for adequate housing within their limited budgets (Ndubueze, 2007; Onyike, 2007; Aribigbola, 2011; Wardrip et al., 2011; Torluccio and Dorakh, 2011; HUD, 2013). A commonly used rule-of-thumb is that housing affordability means that that household spend less than 32% of their income on housing expenses, including rents or mortgages and basic utilities (Nguyen, 2005; Ndubueze, 2007).

This type of analysis generally only considers direct housing costs (Balchin and Rhoden, 2002; Ndubueze, 2009; Hashim, 2010). For example, the British Chartered Institute of Housing (CIH, 1992) evaluates housing affordability based on rental rates, household income, type of household, and household eligibility for housing benefits. In the United States, the National Association of Realtors (NAR) evaluates housing affordability based on mortgage interest rates, median household income, and median home prices (Suhaida et al., 2010). These indicate nothing about housing quality, neighborhood environment or household transportation costs (Mulliner and Maliene, 2011; Mulliner et al., 2013).

2.2. Accessibility

Accessibility refers to people's ability to reach desired goods, services, and activities. Various factors affect both the demand for access (the types of services and activities people want to reach), and people's transportation abilities and options (how far they can walk or bicycle, their ability to drive, roadway conditions, transport costs relative to their incomes, the geographic distribution of services and activities, etc.) (Bertolini et al., 2005; Handy and Clifton, 2001; Litman, 2011; Paez et al., 2012).

Location efficiency refers to whether a particular home location access to the services and activities (shops, healthcare, parks, schools, suitable jobs, etc.) that residents demand (Fig. 1) (Henry and Goldstein, 2010). Transportation convenience and costs affects residents' ability to access education and employment, and therefore their economic opportunities, and community economic development (Henry and Goldstein, 2010).

2.3. Housing and transportation cost trade-offs

In recent years researchers have started to consider accessibility and, therefore, transportation costs when evaluating housing

affordability. This recognizes that households often make trade-offs between housing and transportation costs; more central locations tend to offer better accessibility and lower transportation costs, but higher housing costs (Irandoost, 2011; Khamr, 2011). Although the details can vary depending on various transportation, housing, and urban design factors, the basic principles apply at various geographic scales: all else being equal housing costs tend to be higher in more accessible locations (Jordaan et al., 2004; Giuliano et al., 2010).

In recognition of these trade-offs many experts now recommend that affordability be evaluated based on combined housing and transportation costs, sometimes called an *H+T Affordability Index*. The following flowchart (Fig. 2) and equation (Eq. (1)) could be used for determining housing affordability.

$$H+T \text{ Affordability Index} = \frac{(\text{housing costs} + \text{transportation costs})}{(\text{income})} \times 100 \quad (1)$$

As previously mentioned, experts often define housing affordability as households being able to spend less than 32% of their income on housing expenses. The *H+T Affordability Index* redefines housing affordability as households being able to spend less than 45% of their income on combined housing and transport costs (Arigoni, 2011; Litman, 2013a).

This has many implications and applications. For example, the *H+T Affordability Index* has been used to

- identify the appropriate locations for developing truly affordable housing;
- advise households when choosing a home how to identify the most affordable locations;
- adjust development policies and zoning codes to support affordable housing, for example, by reducing residential parking requirements in more accessible locations where vehicle ownership rates are lower;
- adjust residential lending practices to allow higher monthly mortgages for housing in more accessible locations, in recognition of their transportation cost savings;
- evaluate financial risks, such as the impacts fuel price increases would have on household budgets, and therefore the financial security they could gain by reducing automobile dependence.

Although this type of analysis is widely applied in developed countries, there are few published studies from developing countries. Since affordability is particularly important in developing countries, and many developing countries are rapidly building homes and communities, it is useful to test whether H+T Affordability analysis can be performed in developing country cities.

3. Methodology

3.1. Study area

Qom City is the center of Qom Province, located approximately 150 km southwest of Tehran. The city is divided into 8 districts: Bajk (Z-1), Niroogah (Z-2), Khakfarj (Z-3), Doreshahr (Z-4), Jamkaran (Z-5) Shah Ebrahim (Z-6), central district (Masoumyh) (Z-7), and Pardisan New Town (Z-8) (Fig. 3). During the last half-century Qom City experienced significant growth. Its population increased approximately ten fold, from 96,499 in 1946 to 959,116 in 2006 (Iran Census Center, 1956–2006). Much of this population growth consists of low- to middle-income households who demand affordable housing.

This study applied H+T Affordability analysis to two working-class areas in Qom City, the central Masoumyh area (district 7), and suburban Pardisan New Town (district 8). Central district or

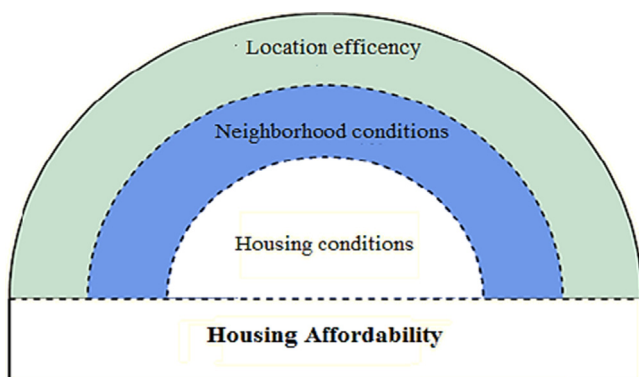


Fig. 1. Relationship between spatial suitability and housing affordability (Commission on Health, 2008).

Download English Version:

<https://daneshyari.com/en/article/1064833>

Download Persian Version:

<https://daneshyari.com/article/1064833>

[Daneshyari.com](https://daneshyari.com)