

A Critical Analysis of Housing Affordability Literature: Turkish Housing Experience



Dr. Şeyda EMEKÇİ
Ankara Yıldırım Beyazıt University
Department of Architecture
semekci@ybu.edu.tr
<https://orcid.org/0000-000d2-5470-6485>
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Abstract: *Measuring housing affordability is a key challenge for most communities. Housing affordability has often been described as housing expenditures-to-income ratio. But, in the housing affordability literature, “housing expenditures” still open to discussion. This article introduces the concept of “lifetime affordability” to describe the affordability of households during the housing life cycle period considering the complexity of determining realistic housing affordability. The concept will be explained through the Turkish housing experience.*

Keywords: *Affordability, housing policy, lifetime affordability.*

Konut Ödenebilirliği Literatürünün Eleştirel Bir Analizi: Türk Konut Deneyimi

Özet: *Konut edenebilirliğinin ölçülmesi çoğu topluluk için kilit bir zorluktur. Konutlarda edenebilirlik genellikle hanehalkı gelirlerinin konut giderlerine oranı olarak tanımlanmaktadır. Bununla birlikte, edenebilirlik literatüründe "konut giderleri" hala tartışılmaktadır. Bu makale, konutun yaşam ömründe, gerçekçi konut edenebilirliğinin belirlenmesinin karmaşıklığını da göz önüne alarak, hanehalklarının edenebilirliğini tanımlamak için "yaşam boyu edenebilirlik" kavramını tanıtmayı amaçlamaktadır. Bu kavram Türk konut deneyimi ile ele alınmaktadır.*

Anahtar Kelimeler: *Ödenebilirlik, konut politikası, yaşam boyu edenebilirlik.*

1. INTRODUCTION

In recent years, the housing affordability problem has become serious all over the world, especially in developing countries. Although housing affordability is perceived as the relationship between housing and its users, risks regarding housing affordability problems are borne by society. The problem has the capacity to make it more difficult to manage investments. Alternatively stated, housing affordability affects not only households but also the country's economy negatively. For these reasons, a reliable and efficient measure of housing affordability is so crucial for decision and policymakers.

It is possible to define the affordability as housing expenditures-to-income ratio. However, in the housing affordability literature, “housing expenditures” are not clearly expressed and are considered as a short-term indicator. In other words, only the initial cost of the housing is considered. The housing maintenance and operational costs are generally ignored during a housing life span. Since there is no long-term indicator, lifetime affordability cannot be determined. This article aims to discuss “housing expenditures” considering the complexity of determining realistic housing affordability and to introduce the concept of lifetime housing affordability through the Turkish housing experience. In the article, firstly housing affordability

literature is analyzed and discussed the shortcomings of the literature. Then, the concept of lifetime affordability is tried to explain through the Turkish housing experience.

2. HOUSING AFFORDABILITY

Housing as a fulfillment of the sheltering need has been one of the fundamental rights of an individual throughout civilization history. Besides being the basic human rights, it is an obvious commodity in the market due to the fact that it has some features (durability, immobility, *etc.*) and many functions for the community (shelter, investment/consumption good, *etc.*).

The public sector is an important actor in housing markets making decisions (*i.e.*, location, target population, new housing development) that is important for the housing sector. Therefore, changes most of the time in economic (unemployment, the distribution of wealth, homelessness, housing quality, unemployment, and housing affordability) affect the housing market [6]. Positive developments in the economy have influenced the demand for property ownership instead of renting. However, despite the increasing housing needs since the industrial revolution, a limited housing supply, increasing house prices, *etc.*, have prevented households, especially for the lower-income groups, from becoming homeowners. In this context, housing affordability is gaining increasing importance in solving the problem.

The terms “*affordable housing*” or “*housing affordability*” has been popularized in the past two decades and has changed the “*housing need*” at the center of the discussion on providing adequate housing for all [40, 49]. It may be that the reason for this popularity gaining is that in many countries more “market-oriented reforms” in the housing sector are being accepted [11]. As a result, increased concerns about rising levels of “*homelessness*”, “*housing costs*”, “*difficulties in accessing to credit*”, “*mortgage defaults*” have brought housing affordability to the center of housing policy discourse since the early 1990s [6, 13, 24, 49].

The literature on housing affordability is quite large. Ndubueze [28] states housing affordability simply the ability to afford to house. According to a very general definition of housing affordability in literature, housing is accepted as affordable if “*the housing cost is less than or equal to 30% of gross income*” [3]. Maclennan & Williams [24] explains that “*Affordability is concerned with securing some given standard of housing at a price or a rent, which does not impose, in the eyes of government an unreasonable burden on household incomes.*”

Stone [38] describes affordability as a difficulty for cost-balancing under income limits for households. He also states as “*an expression of the social and material experiences of people constituted as households, concerning their housing situations*” [38]. Gan and Hill [15] define affordability as “*the ratio of median house price to median income*”. Milligan *et al.* [25] explain that affordable housing is designed usually to “*meet the needs of households whose incomes are not enough to let them access convenient housing in the market without assistance*”. According to Hancock [17] who evaluates from another angle, affordability is “*any rent would be affordable if leaves the consumer with socially acceptable standards of both housing and non-housing consumption after rent is paid*”. Bramley [5] describes affordability as; “*Households should be able to occupy housing that meets well-established social sector norms of adequacy given household type and size at a net rent which leaves them enough income to live on without falling below some poverty standard*”. However, more inclusive housing affordability definition is that; “*Affordable housing is housing that is appropriate for the needs of a range of low to moderate-income households and priced so that low and moderate incomes are able to meet their other essential basic living costs*” [52].

2.1. Measurement Methods of Housing Affordability

Affordability in housing policy has become more and more important every day. However, there is no consensus in terms of measuring affordability in the literature. Measurement of housing affordability and

problem-related to housing date back to the 19th-century studies. In the 19th-century, Engel & Schwabe studied “households’ budget and affordability”. They find its expression as “one week’s wage for one month’s rent” [37]. Later, this term was often used in the United States [30]. In 1912, Kengott suggested for housing rent “at least twenty percent of the earnings of the husband in the family” [20]. The adage of a “one week’s wage ...” used in the 19th century, began to change towards the end of the 20th century. As a result of urban developments in the 20th-century, the price to income ratio was used instead of the adage of a “one week’s wage ...”. Proposed rate corresponds to approximately 25% or 30% of income [2, 18, 38]. These ratio assumptions are based on grossly generalized assumptions without specifying which households were included in the average. After the 1980s, affordability was associated with economic-based problems experienced by households [7, 16, 17, 23, 49]. The ratio of housing expenses to income has been changed at different times according to different institutions. In the 1930s, the federal housing program started by identifying a threshold of 20 percent of income to be spent on rent. Then, the threshold enhanced to 25 percent in the 1970s. Since the 1980s, the standard threshold has been 30 percent of income [26]. Kuty [21] states:

“Over time, thresholds of the housing cost-to-income ratio have been set at 25 percent, 30 percent, 40 percent, and 50 per cent. In the USA, the Housing and Community Development Act of 1974 set rents for federal rental housing assistance programs at 25 percent of income. The Omnibus Budget Reconciliation Act of 1981 increased this to 30 percent. One of these criteria was a housing cost burden in excess of 50 percent of income. The preference rules were published in 1988 (Office of the Federal Register). Households exceeding these cost burdens are identified as having an affordability problem” [21].

3. THE CRITICISM OF AFFORDABILITY LITERATURE

The affordability of housing is important for researchers and policymakers in many countries. It is also a multidimensional issue and should be tackled with many problems that are “the distribution of income, the ability of households to borrow, public policies affecting housing markets, conditions affecting the supply of new or refurbished housing, and the choices that people make about how much housing to consume relative to other goods” [33]. Although this multidimensional situation makes it hard to describe and measure it, housing affordability is generally described as housing expenditures-to-income ratio. However, in the affordability literature, “housing expenditures” still open to discussion. On the one hand, while, according to Bogdon & Can [4] and Linneman & Megbolugbe [23], housing expenditures are defined as only housing cost, in many countries around the world measuring of housing affordability has conventionally been based upon the mortgage repayment capacity. For example, the U.S. EPA (Environmental Protection Agency) states that housing is accepted as affordable if the mortgage repayment constitutes 30 percent or less of household income. In the affordability literature, this is a commonly used method [4, 8, 13, 15, 23], However, this method does not provide accurate information about the housing total cost to the buyer [36].

On the other hand, “housing expenditures” are not based on independent cost information [14, 29]. That is, while housing expenditures are being calculated, it is overlooked that each housing has household consumption patterns. Calculations are based on average housing expenses. The problem is a cursory “broad-brush” calculation that does not calculate all the costs of the homeownership. Hulchanski [18] comments on this problem as follows.

“There is no escaping the fact that household consumption patterns and the means by which households meet their needs are as diverse as the individual humans and their life situations who comprise these households” [18].

Chaplin and Freeman [9] supported Hulchanski.

“A single ratio is not appropriate for all households, for housing and non-housing costs vary by household type. Furthermore, the ratio does not distinguish between households with very different income levels. A single ratio does not account for regional variation in housing and non-housing costs” [9].

Stone [38] discusses that the method ignores the household size variety on most criteria, so for families with children and large households' affordability measurement is not very realistic and Mimura [26] states that the current measurement method of the housing affordability is not based on the real economic challenges facing lower-income groups.

4. HOUSING AFFORDABILITY IN TURKEY

4.1. Overview of Turkish Housing Experience

The provision of affordable housing for all segments of society is one of the most important problems facing developing countries in particular. Like the other developing countries, it is a priority to Turkey. With the continuous rise of demand for housing in urban areas, it is worthwhile to discuss producing affordable housing for society.

In Turkey, after the industrialization movement, the first signs of squatter housing began to be observed. With the outbreak of the Second World War, while industrial activity slowed down, illegal construction increased uncontrollably [10]. However, the possibility of entering the Second World War slowed down housing production. This tendency in the economy has led to housing becoming a scarce substance throughout the country. Besides, high rents for housing have become a problem during the Second World War, even if the government introduced a law to amend housing rents, the effects continued into the 1960s [53]. Between 1923-1950, the government did not make any improvements to housing policies to provide housing. Another change in the housing sector, between the years 1927-1950 is the shift from detached houses to apartments. The apartments were located in the only capital city of Istanbul during the Ottoman Empire period. In 1927, there were 1441 apartments and 89762 houses in İstanbul. Then the number of these houses was 102361, and in 1950, the number of apartments reached 5384 [19]. The main reason for the increase in apartment blocks is *“the unaffordability of individual housing provision for households”* [1].

After the 1950s, the government began designing housing policies, as well as providing housing and financing. Housing demand and squatter housing problems are also beginning to appear in government programs. Besides, the programs included information on affordable housing. However, most of these initiatives have failed. In Turkey, the housing problem has always been qualitative and quantitative [46]. Nevertheless, these problems were discussed only as a quantitative problem for governments [1]. The main reasons underlying the housing problem are population growth and rural migration.

After the industrialization movement, it began a massive migration from rural to urban areas. Housing problems have emerged over time because of this massive migration. For the housing problem, each government began to produce its solution. However, these solutions were inconclusive because they did not come to the source of the problem. Rather than designing policies to supply housing for lower-income groups, the governments allowed the construction of squatter [41]. Therefore, the housing needs of the growing population can cause irregular settlements. These settlements refer to the low-cost building.

However, the uncontrolled settlements were orderless, unhealthy, lack of infrastructure and risky in terms of life.

In 1980, the “*National Housing Policy*” was constituted by the Council of Ministers to provide housing for the people who were not homeowners. As a consequence of this policy, in 1981, the first mass housing law No.2487 was enacted. Between 750 and 1000, units of mass housing were built. This housing was financed by the state. Afterwards, the second mass housing law numbered 2985 was enacted in 1984. In addition to the law, the Housing Development Administration (TOKİ) was established. TOKİ's corporate duties are to provide housing that is suitable for those who do not have the ability to pay in market conditions. Between 1983 and 1988, a number of laws concerning the transformation of squatter houses were enacted. With these laws, the squatter houses were made legal [35].

The Turkish policymakers have begun to discuss this issue after 2000 within the framework of urban transformation. In 2002, “*open up to the world*” and “*become fully integrated into the global economic system*” are proclaimed in the government action plan. This action plan caused the urban transformation to be taken on the agenda. The aim of urban transformation is creating more attractive and competitive urban centres. Then, according to the Government program the Gecekondu (squatter housing) Transformation Projects were put into action with the aim of preventing “prevent unhealthy and ugly urbanization” in 2004. These projects have been started by the Housing Development Administration of Turkey (TOKİ) in collaboration with the local governments. In consequence, the number of housing has increased dramatically. This method was first perceived as producing affordable housing on their land by municipalities. However, the law contributed to expanding the authority of “*the metropolitan municipalities*” over “*the district municipalities*”.

Afterward, interventions to ensure the affordability of rental houses began to increase. The government has put restrictions on rent increases. To this end, to keep the rent of the housings under control, the state set a maximum rent increase percentage in 2000. After 2000, rent increases can be made according to “*the producer price index during the preceding 12 months*” at most. After 2003, the authorities given to TOKİ have increased considerably. With these authorities, TOKİ has become the sole authority in all subjects on the built environment. TOKİ has been criticized for not taking into account the user characteristics and environmental factors in producing housing. Besides inadequate payment, lack of arrangements for tenants and some shortcomings in an arrangement for homeowners have also been criticized [47]. TOKİ has become an important actor in the housing sector in a short period. TOKİ adopts the following method that they gain income from high-income projects and use them in housing construction for the middle- and low-income group. Arrangements were made in the methods of housing financing. The housing mortgage system was presented as a solution offered. However, this method was not a solution to the problem of affordability of low-income groups. Instead of this, this method facilitated housing acquisition of upper-income groups.

In the 9th five-year development plan (2007 - 2013), housing was not considered comprehensively. While, in this plan, financial resources and models for housing has been increasing, it does not offer a solution to the housing problem of lower-income groups. When these conditions were examined, while housing was perceived as an investment good for higher-income groups, it became a growing problem for lower-income groups.

In 2003, the Justice and Development Party aimed to find solutions to the housing problem of lower-income groups, beginning with the housing production and urban transformation program. However, the rate of households in 2000 was 68%, in 2007, this ratio dropped to 60% [45]. As can be understood from these ratios, the houses that are produced did not reach to people who did not have housing. The households used

housing as an investment tool. Therefore, these houses have not been a solution to the affordability problem of the lower-income group [1]. Among the identified objectives of 2023, there is an emphasis on urban transformation regarding housing. However, urban transformation activities have not gone beyond profit-oriented activities. Urban transformation, presented as a solution, cannot contribute to solving the affordability problem of lower-income groups. Although housing affordability problem is very critical for Turkey, the problem could not be managed properly.

4.2. In terms of Life-Time Housing Affordability

Although there is no consensus definition for the term, according to Gan and Hill [15], in the literature, at least three different ways of affordability are commonly encountered. They are respectively income affordability, purchase affordability, and repayment affordability. In its simplest term, affordability of housing is denoted by the house price to income ratio or the rent to income ratio known as income affordability; more sophisticated terms are repayment affordability, purchase affordability. Firstly, income affordability is expressed only by a mathematical percentage that would bring out less accurate results as discussed by Stone [38], Gan & Hill [15], (2009) and Thalmann [42]. According to this type, the affordability is primarily the problem of income inadequacy and it is desirable that the parameters are not overcrowded in the calculations in order not to become unnecessarily complex [42]. If the housing rent or expenditure is less than the household income, that housing could be considered as affordable. In this approach, the ratio of the average rent to income includes hedonic price estimates for various housing attributes, this leads to the difference between actual affordability and apparent affordability. This approach can be difficult to implement due to the luxury definitions depending on the individual. Secondly, purchase affordability considers whether a household can borrow enough funds to purchase a dwelling of the appropriate size and minimum physical and sanitary standards. In this type of affordability, first-time homebuyers are considered as the target group [39], and it is most commonly expressed by the relationship between housing price and household income [50]. Then lastly, repayment affordability considers the burden imposed on a household of repaying the mortgage. This approach focuses on the relationship between repaying the mortgage and household income. Repayment affordability does not indicate the true cost of housing at the present-state [34] and often consider factors such as loan-to-value ratio and the down payment [22]. When analysing all three types of affordability; since housing standards change from country-to-country, the ratios are the same, and locality is less meaningful. Current methods tend to target initial cost or rent of housing which can have unintended effects and omit the other housing costs over incurred in its life cycle period. These methods have not been a real indicator of the total cost for the buyer, so lifetime affordability remains uncertain. In other words, the housing which initially appears affordable after a while may not be affordable when the life cycle cost has been calculated due to energy costs, hot water costs etc. Therefore, long-term policy perspectives are required to ensure actual housing affordability. From this point of view, a new type of affordability has been added as “lifetime affordability”. This method considers not only the initial cost or rent of the housing but also the total cost incurred in housing lifecycle periods such as operational, maintenance and disposal costs.

In many countries around the World, measuring of housing affordability has conventionally been based upon the mortgage repayment capacity or price-to-income ratio. According to the U.S. EPA (Environmental Protection Agency), it is generally affordable housing, if it constitutes 30% or less of household income. This affordability measuring method is the most common in many countries around the World. Besides, in Turkey, this method is widely used [31]. However, this method does not provide any accurate information about the total costs. A single ratio is not enough to determine housing affordability for all households. Moreover, the ratio does not offer differences between households with different income levels. It also does not consider regional differences.

At end of 2014, Turkey's population is about 77.7 million inhabitants. In 2014, the rate of annual population growth in Turkey was 13.3 per-thousand [44]. The population of the country continues to increase and to urbanize. A great number of houses are built every year in Turkey. Most of them are composed of mass houses. At first, the housing may seem initially affordable when evaluated according to the price-to-income ratio. However, while evaluating their life cycle periods, they are not affordable for especially lower-income groups. In order to have affordable housing in Turkey, it is required to have the following conditions: *“the maximum income level cannot exceed to 3200 ₺”* or who have a *“Green Card”* or *“benefiting from the Social Aid and Solidarity Encouragement Fund”*, or *“benefiting from the Social Aid and Solidarity Encouragement Fund”* or *“not having been dependent on any one of the social security institutions”* or *“receive a salary within the meaning of the Law No.2022205”* or [43]. According to the definition, the presence of households with no income should also be considered in these housing. How can this ratio be applied to people who have no income? The problem is a cursory ‘broad-brush’ calculation that does not calculate all the costs of the homeownership. The price-income ratio often used 30% which has been previously set at 25 percent, 30 percent, 40 percent, and 50 percent by different institutions does not provide information on housing affordability.

In Turkey, housing affordability measurement studies are in the tendency to target housing initial costs. However, it is able to produce undesirable and unexpected problem in the long term. In housing projects, since commonly only housing initial cost is considered and the housing maintenance and operating costs are not taken into account, the housing producing after a while cannot be affordable. Besides, due to the increase in the share of housing expenses in household income, the person would have to allocate less money for healthcare, food and other expenses. It can damage society. Generally, in the early stage of the construction process, the costs including heating, electricity, water utilities *etc.* are not taken into consideration. Therefore, lifecycle cost and energy demand that belong to that housing are unclear. In the literature, it is possibly seen that the initial cost has a lower rate than the housing operational and maintenance costs in the total building life-cycle cost [27, 32, 48, 51].

A typical household must allocate a large portion of the monthly income to the operating costs of the housing such as electricity, heating and water [12]. For this reason, the operation and maintenance costs that occur during the building life cycle must be considered in the calculation of housing affordability. Therefore, in developing countries especially Turkey, housing options that appeal to different segments, integrated with life cycle costing have been needed. To ensure the lifetime affordability, long-term policy perspectives that are inclusive, systematic are required. For each housing, it is necessary to establish a system in which the housing can assess the costs incurred in its lifetime. In the housing affordability literature, it is necessary to discuss "Lifetime affordability" taking into consideration the costs specific to each housing.

Table 1. Studies on life cycle costing and their percentages

Author(s) (year)	Location	Lifespan (years) (assumed)	Initial cost (as % of the cost of lifecycle (assumed))	Cost of operational and maintenance (as % of lifecycle cost) (assumed)
Mithraratne & Vale (2004)	NA	100	42%	58%
Ive (2006)	UK	20	6%	94%
Wong <i>et al.</i> (2010)	Malaysia	60	19%	81%
Pellegrini-Masini <i>et al.</i> (2010)	NA	25	16%	84%
Kshirsagar <i>et al.</i> (2010)	NA	38	12%	88%
Tuhus-Dubrow & Krarti (2010)	US	60	34%	66%
Wang <i>et al.</i> (2014)	NA	30	31%	69%

5. CONCLUSION

The provision of affordable housing is an unanswered issue in many countries. This problem is a major challenge, particularly in developing countries. Like the other developing countries, it is a priority to Turkey. Turkey has experienced dynamic urbanization, especially during the last five decades that have increased demand significantly in urban areas. Increasing demand for housing in urban areas provides to discuss the opportunities of affordable housing. However, the problem could not be managed properly. The underlying causes of this are as followed.

Firstly, there no exist affordability housing policies regarding the institutional dimension of the housing affordability; Housing affordability has never been considered in a comprehensive manner and as a priority issue in Turkish housing policy. Although the construction sector was seen as a pioneer of economic growth in Turkey, housing production was supported without awareness as a problem of housing affordability. Besides, the number of studies that draw attention to this issue is quite limited in Turkey. Housing affordability should be an inevitable part of Turkish housing policies and addressed urgently. It is necessary to establish a comprehensive housing policy in order to develop access to more affordable, more efficient and quality housing.

Secondly, the housing affordability evaluates essentially as a short-run indicator and the ratio approach measurement can be used. Predominantly, previous research on housing affordability has concentrated on the costs of accessing housing *i.e.*, housing rent, housing purchase cost, mortgage repayment. Other ongoing costs *i.e.*, water, energy, and other and utility costs, housing maintenance costs tend to be omitted in the affordability debate. This method is not a real indicator of the total cost for the buyer, so lifetime affordability remains uncertain. Affordability issue could not be addressed in isolation from “*lifetime affordability*”.

A third issue is directly associated with the target of housing expenditure. In a small number of studies that housing expenditures are calculated, the calculations are based on average housing expenses. The problem is a cursory “*broad-brush*” calculation that does not calculate all the costs of the homeownership. A

uniform housing expenditure calculation for the whole country ignoring local differences in household, housing conditions and household consumption patterns is doomed to be unsuccessful to achieve lifetime affordability. This calculation could be designed with respect to these differences.

Systematic, detailed, and comprehensive methods and studies integrated with the life cycle are required to solve this problem properly. Long-term policy perspectives are required to ensure lifetime housing affordability. It is necessary to discuss "Lifetime affordability" taking into consideration the costs specific to each housing, not a single ratio.

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ŞEYDA EMEKCI, Ph.D.,

Seyda Emekci, studied architecture at Middle East Technical University in Ankara and graduated in 2011. After graduating, she started her master's degree in the Department of City and Regional Planning at the Faculty of Architecture. She completed her master's degree in Urban Design in 2014. She started her doctorate studies in Middle East Technical University in 2014 and graduated with a doctorate degree in 2018. She worked as Associate in Development Agency between 2011-2014 and General Directorate of Nature Conservation and National Parks between 2014-2017. In 2019, she worked as a postdoctoral researcher at East London University. She is currently working as an Assistant Professor at Ankara Yıldırım Beyazıt University Department of Architecture. Her areas of expertise include sustainability, smart homes, smart cities, urban design, affordability, and housing policies. She teaches architectural design and sustainability courses. She has referees in international indexed journals and articles published in national and international journals and conferences.