An Evaluation on Residential Satisfaction in Historic Urban Quarters: The Case of the Walled City, Famagusta

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ABSTRACT

This study aims to evaluate residential satisfaction in historic urban quarters which are characterized by relatively higher architectural, cultural, and aesthetic values than non-historic areas. Nevertheless, historic urban quarters threat more by significant physical and social decay and undesirable environment, functional and physical obsolescence, and poor-quality buildings, material and constructions. These challenges lead to reduce the satisfactions' levels of residents who live in historic urban quarters as their contemporary needs are not provided and living standards are usually lower. Consequently, to achieve this aim, this study provides extensively a list of factors on the basis of social, environment, economic, and culture dimensions to evaluate residential satisfaction within the contextual provisions of historic urban quarter of Walled City, Famagusta. Besides, this study collected 245 questionnaires from households residing in the historic urban quarters of the Walled City, Famagusta and also 167 households residing outside of the quarters to assess their perception of the identified factors, as well as examine the agreement levels in the opinions of the two participant groups. This study also used the mix method including both the qualitative and quantitative approaches to identify important factors of satisfaction based on resident's perception, expectations, and experiences. Using principal component analysis (PCA), the results show that eight factors are only important from residents' perceptions. Findings show that from the economic dimension, "Cost of housing", "Tenure options" and "Cost of living within the Walled City" are the most important factors of satisfaction. From the social dimension, results showed the "Suitable management rules", "Security/safety concerns" and "Level of social mix in housing environment" are the most important factors of satisfaction. From the environment

dimension, results showed the “Open spaces and green areas” is the most important factor of satisfaction. From the culture dimension, results showed the “Suitability of housing to occupant’s culture” is the most important factor of satisfaction. The findings of this study will help to better understand the residents’ perceptions, expectations and experiences in historic urban quarter of the Walled City, Famagusta and are useful to housing policy decision-makers, urban planners, and municipalities to improve residential environments in line with the contemporary needs and expectations of residents. The results of this study also provide some insights that contribute to residential satisfaction literature as it opens a new window for further studies to test and apply the important factors in a case-study based survey of other historic houses and urban areas. Furthermore, it can be considered a crucial step in the sustainable development process, as identifying the determinants of residential satisfaction helps to satisfy the contemporary needs of residents in physically degraded and urban fabric deteriorated historical environments.

Keywords: Residential Satisfaction, Historic Urban Quarters, Walled City, Famagusta, Northern Cyprus.

ÖZ

Bu çalışma, tarihi olmayan bölgelere göre daha çok mimari, kültürel ve estetik değerlere sahip olan tarihi kentsel alanlardaki, konut memnuniyetini değerlendirmeyi amaçlamaktadır. Fiziksel ve işlevsel olarak eskimiş, düşük kalitede malzemelere sahip, yıpranmış yapıları, geçirmiş oldukları fiziksel / sosyal deformasyon ve çevre koşulları ile tarihi kentsel alanlarda tehdit unsuru oluşturmaktadırlar. Çağdaş ihtiyaçların karşılanmaması ve yaşam standartlarının genellikle düşük olmasından dolayı yaşanılan zorluklar, tarihi kentsel alanlarda ikamet eden sakinlerin memnuniyet düzeylerini düşürmeye yol açmaktadır. Bu çalışma, yukarıda belirtilen amaca ulaşmak için, Mağusa Suriçi'nin tarihi kentsel alanlarının bağlamsal koşulları içinde, konut memnuniyetini değerlendirmeye yönelik sosyal, çevresel, ekonomik ve kültürel boyutlarda kapsamlı bir faktör listesi sunmaktadır. Mağusa'nın Tarihi Suriçi'nin bölgesinde ikamet eden 245 hane ile anket yapılmıştır. Ayrıca bu semtlerin dışında ikamet eden 167 hanede de, belirlenen faktörlere ilişkin algıları değerlendirmek ve iki katılımcı grubunun görüşlerindeki uyum düzeylerini incelemek için araştırma yapılmıştır. Çalışmada, bölge sakinlerinin algısına, beklentilerine ve deneyimlerine dayalı olarak önemli memnuniyet faktörlerini belirlemek için hem nitel hem de nicel yaklaşımları içeren karma yöntemler kullanılmıştır. Temel bileşen analizinde (PCA) kullanılan sonuçlar, sekiz faktörün yalnızca bölge sakinlerinin algılarına göre önemli olduğunu göstermektedir. Sonuç olarak elde edilen bulgular ekonomik boyutta incelendiğinde, "Konut maliyeti", "Kullanım hakkı seçenekleri" ve "Suriçinde yaşam maliyeti"nin en önemli memnuniyet faktörleri olduğu anlaşılmaktadır. Sosyal boyutta, "Uygun yönetim kuralları", "Güvenlik / güvenlik endişeleri" ve "Konut ortamında sosyal karışım düzeyi"nin en önemli olduğunu; çevre boyutunda ise "Açık alanlar ve

yeşil alanlar"ın en önemli memnuniyet faktörü olduğunu göstermiştir. Kültür boyutundan ise elde edilen sonuçlara bağlı olarak, "Konutun bina sakinlerinin kültürüne uygunluğu" en önemli memnuniyet faktörü olmuştur.

Bu çalışmanın bulguları, Mağusa Suriçi'nin tarihi kentsel alanlarında yaşayanların algılarını, beklentilerini ve deneyimlerini daha iyi anlanmaya yardımcı olmaktadır. Çalışmanın bulguları ayrıca bölgede yaşayanların çağdaş ihtiyaçları ve beklentileri ışığında konut bölgesini ilerletme açısından konut politikaları üzerine karar vericiler, kent plancılar ve yerel yöneticileri için yaralı olmaktadır. Çalışmanın sonuçları, alan çalışmasına dayalı araştırma yapılacak olan farklı tarihi değeri olan evler ve kentsel alanlar üzerinde, ortaya konulmuş olan konut memnuniyet faktörlerini test etmek ve uygulamak açısından konut memnuniyeti literatürüne yeni bir pencere açma yönünden katkıda bulunmaktadır. Bunun yanında çalışmada ortaya konulan konut memnuniyeti faktörleri, hem fiziksel hem de kentsel dokusu bozulmuş tarihi çevrelerde yaşayanların, çağdaş ihtiyaçlarını karşılamaya yardımcı olduğundan sürdürülebilir kalkınma sürecinde çok önemli bir adım olarak da kabul edilebilir.

Anahtar Kelimeler: Konut Memnuniyeti, Tarihi Kentsel Alanlar, Suriçi, Mağusa, Kuzey Kıbrıs.

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Chapter 1

INTRODUCTION

Over the last decades, the concept of satisfaction has considerably garnered the interest of researchers and scholars in various disciplines and professions such as marketing (consumer satisfaction), economy (job satisfaction), and humanities (life satisfaction, community satisfaction). For instance, the definition of job satisfaction has been posited as a positive or pleasurable emotional/perceptual state emanating from an appraisal of one's work or job experiences (e.g., Locke, 1969, 1976; Pincus 1986; Cranny et al., 1992). Brown et al. (2000) conceptualized community satisfaction as a manifestation of how well residents correctly assess their situation in relation to the expectations of the larger culture at a particular time as they act them out in a particular place. Generally, satisfaction is based on the needs of an individual, expectations, and pleasures, while it is explained by others, as some sort of mental efforts, standards of behavior or emotional feelings, towards a belief or goal. Consistent with prior studies (Oliver, 1981; Diener ,1984; Galster, 1987; Cowin et al., 2008), satisfaction assesses by a person's comparison between expectations and experiences and higher level of discrepancy between a person's experiences and expectations, corresponds with the lower level of satisfaction.

What about satisfaction in residential places and which factors impact the level of residents' satisfaction? Different researchers defined residential satisfaction in the different ways. For instance, Campbell et al. (1976) defined residential satisfaction

based on residents' needs and expectations in their residential places and residents are more satisfied by lowering the discrepancy between residents' needs and expectations. Residential satisfaction was interpreted by Canter and Rees (1982; p.185) as a reflection of the degree to which inhabitants feel that their goals are achieved by them, due to the help of their housing. McCrea et al. (2005, 2014) argued that satisfaction is a dynamic issue and strongly depends on residents' needs and expectations.

Remarkably, some studies suggested that residential satisfaction can be expatiated by evaluating of housing and or surrounding area based on the belief, perception, preferences and priorities of residents. For instance, Galster and Hesser (1981) defined residential satisfaction to be an indication of the variations between the preferred and actual housing condition of a household. Onibokun (1974) and Ogu (2002) defined housing satisfaction pertains to being satisfied with a unit of dwelling. Residential satisfaction is one's emotional response to a one's dwelling (Francescato et al., 1979). Salleh (2008) mentioned that the definition of residential satisfaction can be made by the quality of housing conditions. Besides, the works (Amérigo and Aragonés, 1997; Francescato, 1982; Cutter, 1982; Muoghalu, 1984; Galster, 1987; Mohit et al., 2010) revealed that satisfaction with residence can be considered as the appraisal of an individual's residential environmental conditions by such individual, on the basis of their expectations, achievements and needs.

Despite of defining residential satisfaction by considering only physical environment (Riemer, 1945; Kennedy, 1950; Mogey and Morris, 1960) or social environment dimension (Fried and Gleicher, 1961; Wilner et al., 1962), the works of several studies (e.g., Mesch and Manor, 1988; Ifesanya, 2003; Makinde, 2015) criticized and

suggested to use the multi- dimensional bundle of culture, social, environment, economic, and political to define residential satisfaction. Morris and Winter (1975) posited that the family and cultural norms of the individuals, provide the basis for evaluating housing conditions. The way in which people behave, and define the cultural expectations of housing conditions, is influenced by cultural norms. The woks (Hashim, 2003; Erdoğan et al., 2007; Mohit and Azim, 2012; Etminani-Ghasrodashti et al., 2017) defined residents' satisfaction by considering the quality of social and physical aspects of housing conditions. Basides, Fleury-Bahi et al. (2008) and Kahreman (2013) considered environmental aspect in the context of residential satisfaction. Moreover, the studies (Mustapha et al., 1995; Varady and Carroza, 2000; Baiden et al., 2011; Kahreman, 2013) considered the importance of economic dimension (e.g., housing finance, financial investment) on evaluating housing satisfaction.

Based on definitions mentioned-above, numerous researchers have empirically studied residential satisfaction in different countries such as Nigeria (e.g., Ibem and Aduwo, 2013), Malaysia (e.g., Mohit et al., 2010), Turkey (e.g., Kahraman, 2013), Italy (Aiello et al., 2010), Australia (Smith, 2011), and Iran (e.g., Ghafourian and Hesari, 2017). Besides, scholars have conducted studies on satisfaction with residence, mainly in low-income housing (Riazi and Emami, 2018), neighborhoods (Amerigo & Aragones, 1990; Barreira et al., 2017), public housing (e.g., Ibem and Amole, 2013), urban housing (Erdogan et al., 2007), planned community (Smith, 2011), and double-story terrace housing (Mohit and Mahfoud, 2015). Consequently, their studies underlined that satisfaction of residents depends on a bundle of social (e.g., social infrastructure), economic (e.g., cost of housing), environment (e.g., open spaces), and culture (e.g.,

cultural facilities) dimensions and discrepancy between residents' need and expectation for each dimension can impact the level of satisfaction.

While many studies have attempted to investigate residential satisfaction in non-historical areas, few studies have focused to study residential satisfaction in historic urban quarters. According to the ICOMOS Washington Charter (1987), historic urban areas are defined by small and large, and are inclusive of towns, cities, and historic quarters/centers, alongside their man-made and natural. Historic urban quarters represent historical elements' projections in form of residential environment and buildings, which are linked symbolically with other city aspects (Tiesdell et al.,1996; Doratli et al., 2007).

Traditional and ancient features of urban quarters make them historical: urban fabric, local branding features, and street patterns (Vehbi and Hoskara, 2009). The uniqueness of places occupied by these quarters are based on the parameters of hosts of the country's heritage (whether historical or cultural). Jiang et al. (2017) stressed that these quarters are the cumulation of cultural or historical buildings, that offer style and features of a particular era of history. Besides, they are evidenced by their architectural value and traditional nature (Doratli, 2005).

According to Tanrıkul and Hoskara (2019), historic urban quarters is made up of tangible and intangible heritage and physical structures of the olden days while expressing the way of living and culture of the peoples. It should also be considered that down the ages and over time, areas of historic symbolism can afford the most tangible evidence of cultural diversity, social and religious activities and wealth;

safeguarding and integrating into contemporary societal living is a basic factor in land development and town-planning (UNESCO, 1976).

As historic urban quarters have vast difference from other non-historical areas (Doratli et al., 2007; Vehbi and Hoskara, 2009; Sarıoğlu Erdoğdu and Özdemir Sari, 2017), factors and level of satisfaction with residence in historic urban quarter may vary from others such as urban public and private housing. For instance, Türkoğlu (1997) found that the residents living in both new planned city sections felt more satisfaction than those residents that reside in both traditional neighborhood squatters.

Ogu (2002) found that the environmental infrastructure services and quality indicators were, as in need and inadequate in terms of measures, required for the improvement of the situation of the resident's satisfaction, with their areas of housing is to be enhanced substantially in traditional cities in West Africa.

In a study, Jiboy (2004) found that satisfaction level is lower in traditional core area relative to developed area in Osogbo, Nigeria. Erdogan et al. (2007) discovered that there is an attitude of higher perceived satisfaction toward the inhabitant, with social relations and the feeling of satisfaction with the local authority, in contemporary neighborhoods, compared to ones that are traditional, in Edirne, Turkey.

Jiang et al. (2018) showed that the satisfaction level is impacted significantly by the gap between the aspirations for housing and the actual housing, as well as the environmental attributes, in proportion to the levels of aspiration in historical blocks of China. Adewale et al. (2019) revealed that inhabitants were predominantly satisfied

with their neighborly relationships, but felt the least satisfaction with the space sizes within the neighborhoods in the core traditional Ibadan area of Nigeria's southwest. Furthermore, the results of authors revealed that attributes of housing unit satisfaction and the social features of the neighborhood; the cleanliness and layout, and utility provision, as well as neighborhood recreational facilities, emanated as top three predictors of satisfaction with residential, amongst inhabitants. In the nexus sub-section, it shows in more details about the characteristics of the historic urban quarters, and explains how the residential satisfaction are impacted either positively or negatively by these characteristics.

1.1 Problem Statement

Residential satisfaction is important as the higher satisfaction level corresponds with increasing living standards of residents and also showcasing their attainment of residing in a particular place in relation to their perceptions, expectations, and experiences. Basically, residential satisfaction depends on several factors which identifying them help to increase satisfaction of residents in a community. Among important factors, some factors reduce the satisfaction levels while others impact satisfaction levels positively. Remarkably, the factors of residential satisfaction are selected mainly based on characteristics of a place and residents' perceptions, expectations, and experiences. Since this study spotlights historic urban quarters, in this section, it explains about the characteristics, strengths, and challenges of historic urban quarters in order to identify more accurately the related factors of residential satisfaction.

Based on the reviewed literature and observations, historic urban quarters have unique characteristics and values which impact residents' satisfaction levels. Some of its characteristics impact positively as comparing to non-historic urban quarters.

Historic urban quarters have relatively more as follows; comparing to non-historical area, historic urban quarters have relatively more;

- Cultural and worship places. This leads to residents have more availability to cultural facilities.
- Cultural heritages, historical buildings, and monuments. This leads to residents have more place identity and place attachment.
- Narrow streets, pedestrian-friendly streets and human scale. This leads to residents have more social network.

However, unlike having the positive effect by unique characteristics on residential satisfaction, houses and environments of historical urban quarters have suffered by serious problems, which in turn, leads to reduce the satisfaction level of residents. These challenges are as follows; comparing to non-historical area, historic urban quarters have relatively more;

- Significant physical and social decay and undesirable environment due to changing social composition. This leads to decline economic and tourist activities.
- By insufficient parking areas, relatively fewer open spaces and green areas, and things to do.
- By functional and physical obsolescence such as old technical infrastructure, lack of maintenance or availability of social infrastructure, poor structural

condition, non-contemporary sanitary condition, storm water discharge and waste management systems.

- Contained very old and poor-quality buildings. This imposes more preservation and renovation costs on residents and can increase cost of housing. Also, houses in historic urban quarters are relatively smaller and have poor material and construction quality.
- Due to maintaining cultural and specific aesthetic and architectural values have relatively less flexibility, based on standard renovation rules, to modify their housing forms and designs in compliance with their culture and desires.

In summary, these challenges cause the living standards in the historical urban quarters to become relatively lower than non-historical area. Also, comparing to non-historical area, residents are relatively more dissatisfied by living in historic urban quarters as contemporary needs of residents are not provided.

1.2 Aim and Objective

Several researchers of various discipline and orientation, have studied residential satisfaction, through a variety of conceptual and theoretical approaches; hence it is a complex concept. However, despite several studies having investigated residential satisfaction determinants in numerous non-historical contexts, less attention has been shone on examining the potential factors of residential satisfaction in historical urban quarters bases on inhabitants' perceptions, expectations and experiences. Hence, the perceptions, expectations, experiences of the residents/inhabitants of historic urban quarters are not obvious and immediately identified for policymakers; neither it's not established in housing satisfaction literature. Besides, after a deeply reviewing the related-literature, it found that most of the studies of residential satisfaction have

employed either a single or combination of the multi-dimensions such as social and environment, social and culture, economic and environment in their studies. Especially, there is an insufficient amount of studies investigating the multi-dimensional evaluation residential satisfaction by considering the factors of environmental, economic, social, and cultural dimensions with residence in historic urban quarters.

Therefore, this main objective of this research study is to address and fill the momentous gap by providing extensively, a list of factors on the basis of social, environment, economic, and culture dimensions to evaluate residential satisfaction within the contextual provisions of historic urban quarters. To achieve this aim, this study proceeds as follows;

- This study selects residential historic urban quarter of Walled City, Famagusta, Northern Cyprus, to evaluate residential satisfaction, which is characterized by rich cultural heritages, traditional character and architectural value, poor living environment, dilapidating buildings, as well as outdated infrastructure systems and sanitary, and poor structural conditions (e.g., Doratli, 2000; Doratli et al., 2007).
- This study to evaluate residential satisfaction, it follows the prior studies and combines the general and specific potential factors of residential satisfaction both in non-historical and historical areas, respectively. Also, it adds some specific factors related to the characteristics of the Walled City to find the potential factors of residential satisfaction in historic urban quarters completely.

- This study uses a sustainability concept to determine the social, environment, economic, and culture dimensions. Also, it follows the prior studies and the literature to group the potential factors in the dimensions of social, environment, economic, and culture.

Moreover, this thesis study sets out to investigate perceptions of inhabitants residing in various neighborhoods (inhabitants residing in Famagusta's Walled City and others residents in adjacent districts) about important factors of residential satisfaction due to the fact that adjacent districts are relatively more provided residents' contemporary needs. Also, it aims to examine whether the potential factors of residential satisfaction differ based on respondent's ethnicity and profile of residence. In summary, the other aims of this research are as follow;

- To determine if participants residing in the Walled City, Famagusta and in districts nearby, have a variety of distinct opinions on the vital essence of the factor.
- To ascertain if there is a difference in opinions on the factor's vitality, depending on the ethnicity of the respondent local (Turkish-Cypriots) or foreign (Non-Turkish-Cypriots).
- To discover if there is a difference on opinions on the factor's vitality, depending on the resident's profile (homeowner or renter).

1.3 Research Questions

Based on the main aim of this study, the main research question is;

- What are the potential factors of residential satisfaction from social, environmental, economic, and cultural dimensions in the historic urban quarters of the Walled City, Famagusta?

Besides, based on other objectives, the research sub-questions are as follows;

- Do the perceptions of the important factors differ between local (Turkish-Cypriots) and foreign (Non-Turkish-Cypriots) residents?
- Do the perceptions of the important factors differ between homeowner and renter residents?
- Do the perceptions of the important factors differ between residents of the Walled City, Famagusta and non-residents?

1.4 Research Methodology

For investigating the potential factors of residential satisfaction from social, environmental, economic, and cultural dimensions in historic urban quarter of the Walled City, this study proceeds as follows.

This study used the mix method, which includes both the qualitative and quantitative approaches to identify factors of sustainability performance of satisfaction with residence in historic urban quarters. In the qualitative approach, this study used the content analysis which is conducted on the basis of published article and books in the related literature. Accordingly, based on the previous studies, this study firstly determines the general sustainability performance factors of residential satisfaction. Secondly, this study determines specifically the sustainability performance factors of residential satisfaction in historic areas. Thirdly, this study constructs the overall sustainability determinants of satisfaction with residential in historic urban quarter by

combining the general sustainability performance factors of residential satisfaction and sustainability performance factors of residential satisfaction in historic areas as resulting sustainability performance factors in historic urban quarters. Lastly, this study adding some specific-related factors of the Walled City, Famagusta to the sustainability performance factors in historic urban quarters.

Following the comprehensive set of sustainability performance factors of residential satisfaction in historic urban quarter, which was gathered from literature review, the initial questionnaire survey designed. However, before conducting the final questionnaire survey and data collection, this study performs the pilot study with a small sample similar to the primary questionnaire survey by pilot participants. The pilot study conducted to assure the clarity of the items and whether to add or delete some items based on the pilot participants' views. Also, it helps to identify those inquiries that the participants do not grasp, or rectify problems with the questionnaire which might result to biased answers.

After performing the pilot study, the final questionnaire survey was prepared to collected the data from the perceptions of participants who lived in the Walled City, Famagusta and adjacent districts to selected the important factors via a 5-point Likert Scale (1–5): 1 = least important; 2 = less important; 3 = slightly important; 4 = important; 5 = Very important.

After the qualitative analysis and data collection, this study used the quantitative approach by utilizing both inferential and descriptive techniques of analysis. Particularly, the descriptive-analytical tools are utilized for the extraction of core

variables from the complex multivariate data (Relative Importance Index (RII)). Also, the inferential statistics including both non-parametric test (Mann-Whitney U test) and exploratory factor analysis, is employed to test any distinction in the means of two independent samples based on local/foreigner, homeowner/renter and residents/ non-residents.

1.5 Research Limitation

This study has some limitations that could serve as suggestions for future research themes;

- This thesis is cursory of the opinions of residents, provided that residential satisfaction changes over time and is thus a dynamic process. This study only conducted a frequency analysis of the research aims, based on the questions of the research; the causes of decline in historic urban quarters were not into.
- It acknowledges the relatively small size of the sample of respondents. This shortcoming may place limitations on the survey result's representativeness.
- This study finds four main keywords such as emotional, perceptions, expectations and experiences related to residential satisfaction. However, this study excludes emotional keyword for evaluation of residential satisfaction as the questionnaires are not prepared based the feeling and emotional of respondents.
- This study explained about three main theories of residential satisfaction namely "housing need", "psychological construct" and "housing deficit theory". However, using "housing need" and "housing deficit" theories are mostly useful in explaining satisfaction with residential and mobility behavior.

Therefore, based on the core study aims of this thesis, this research limited to the "psychological construct theory".

- This study explained previous conceptual models of residential satisfaction, to which majority of studies used only one of them in their studies. However, based on the main aim of this study, this research was limited to Marans and Rodger (1975) conceptual model.
- This research did not measure the extent of satisfaction with residential of the residents in the Walled City, Famagusta. This study just limited to the "Marginal improvement priority" approach to find the important factors based on the perceptions, expectations and experiences of residents in the Walled City, Famagusta and adjacent district.
- This study limited by comparison of residents' perceptions based on only profile (homeowner/renter), ethnicity (local/foreign) and respondents' region (inside the Walled City/ outside the Walled City) from socio-demographic characteristics.
- Moreover, this study has limits due to the sole evaluation of residential satisfaction based on the, views and perceptions of residents who are not experts, academicians and professionals.

1.6 The Structure of the Thesis

The rest of this study is structured accordingly; chapter 2 overviews existing definitions and meanings of satisfaction, Also, this chapter explains the definition from multidisciplinary perspective of satisfaction. Furthermore, it explains the main theories and conceptual models used in residential satisfaction studies. Finally, the chapter will avail an overview of the studies on residential satisfaction and explain particularly the

determinants of residential satisfaction from sustainability dimensions. Chapter 3 explains historic urban quarter meaning and characteristics. Also, clarified previous studies of residential satisfaction in historic areas. Moreover, describe the sustainability performance factors of residential satisfaction in historic urban quarter. Chapter 4 deals with the sustainability performance factors of residential satisfaction from the scale view in the Walled City of Famagusta which is considered as a historic urban quarter. Moreover, explains the characteristics of selected case study. Furthermore, it deals with the study results along the lines of the research objectives and questions. Chapter 5 deals with the conclusion. Figure 1 illustrated the structure of the thesis.

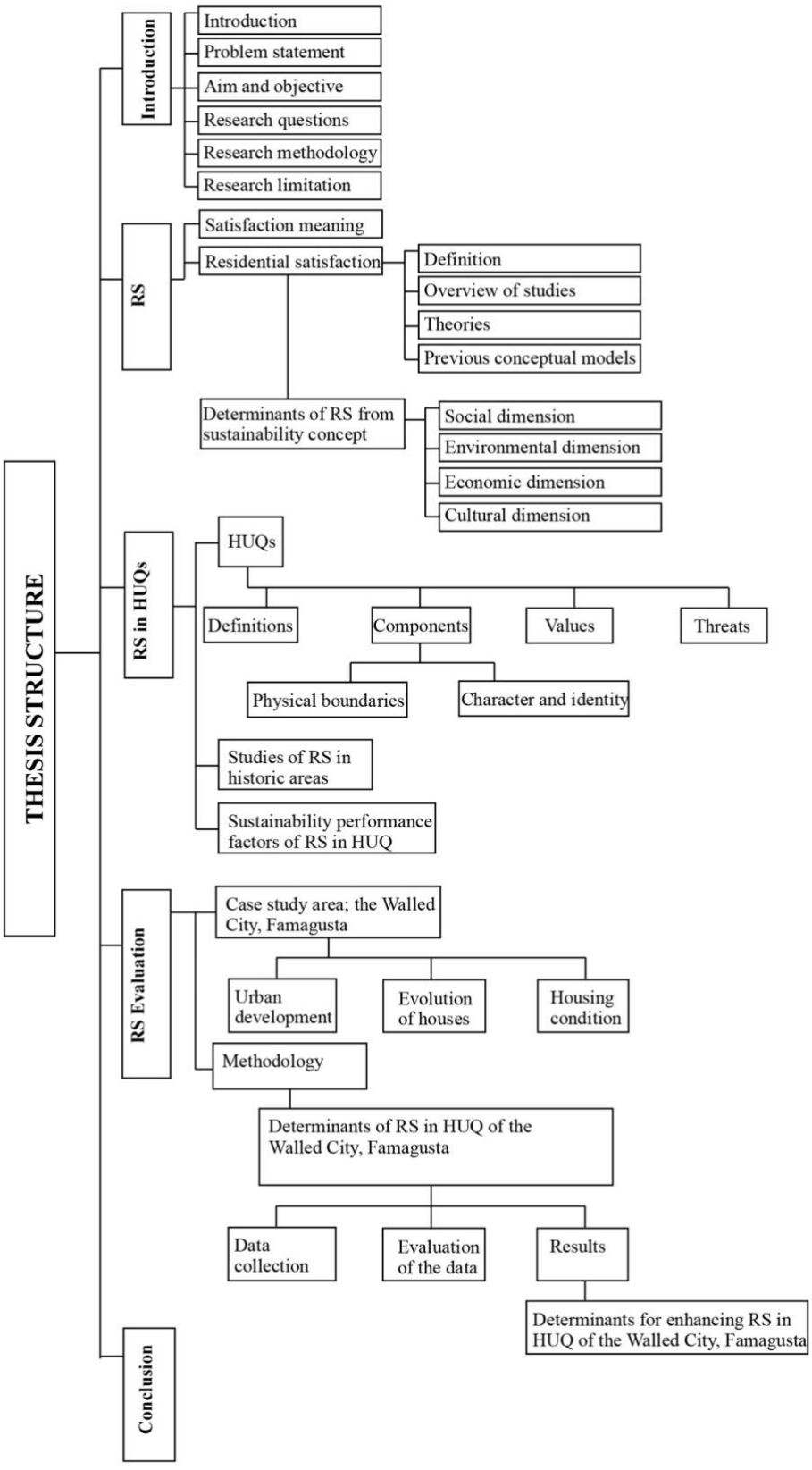


Figure 1. Structure of the Thesis.
Note. Residential satisfaction=RS and Historic Urban Quarter=HUQ

Chapter 2

DETERMINANTS OF RESIDENTIAL SATISFACTION

This chapter harmonizes the existing definitions and meanings of satisfaction on the basis of previous studies and literature review. Specifically, this chapter explains the definitions and meanings related to multidisciplinary perspective of satisfaction from social science such as marketing (e.g., consumer satisfaction), economy (e.g., job satisfaction), and humanities (e.g., life satisfaction, community satisfaction). Moreover, it explains the definitions and meanings of residential satisfaction on the basis of the existing literature review. Furthermore, it describes the main theories and important conceptual models used in the most residential satisfaction studies. Also, the chapter will engage in overview of the residential satisfaction studies and explain particularly the determinants of residential satisfaction from sustainability dimensions such as social, environment, economic and cultural. Finally, it explains the conclusion of the chapter.

2.1 Satisfaction: Definitions and Meanings

The thirteenth century witnessed the first appearance of the word ‘satisfaction’ in the English language. It is a word which emanates from ‘satis’ - the Latin word (which means ‘enough’) and a Latin ending: ‘-faction’ (from the Latin ‘facere’ which means ‘to do/make’). Early and prior usage of ‘satisfaction’ as a word, dwelled on it referring to a release of some sort from wrongdoing. Later citations, according to the Oxford Library of Words and Phrases (1993: 1258), emphasized satisfaction as a freedom

from uncertainty. More contemporary application of the word appears to have much broader usage, and is related more clearly to other words like satisfy (make contented or pleased), satisfactory (adequate) and satiation (enough).

The construct of satisfaction has been defined in many distinct manners. In an earlier study by Howard and Sheth (1969) considered satisfaction as a buyer's cognitive state. According to Zaltman et al. (1973) satisfaction, in conventional usage, is both complex (world of thought) and a complex term (world of language), which is inclusive of the degree to which there is the fulfillment or accomplishment of desires, goals, and motivations. Further, satisfaction is defined by Locke (1976) and Westbrook and Reilly (1983) as a response or affection toward a target/object, which is emotional.

Similarly, Hunt (1977b; p. 39) noted that the conceptualization of "satisfaction is a kind of stepping away from an experience and evaluating it...". An individual could experience something pleasurable, which led to dissatisfaction, because, although they felt pleasured, it did not match their level of pleasure expected. Hence, satisfaction is more than just mere emotion, but is the evaluation of such emotions felt.

Similarly, Parker and Matthews (2001) mentioned that the Theory of Value-Percept Disparity perceives satisfaction to be an emotional reaction emanating as a result of a process of subjective evaluation, referring to the comparison made of an 'object' to one's values, and not to an expectation. Locke (1969) posits that users seek a perception level of zero-disparity between their values (wants, needs and desires) and that which is the object of their evaluations.

To be precise, we could define satisfaction based on Campbell et al (1976) as the perceived discrepancy that are obtainable between the aspirations had and the actual achievement, ranging from such perceptions of fulfilment, to perceptions of deprivation. Satisfaction was believed to be considered as a judgmental act, a comparison between actual and aspiration.

While many actions may have primary motivations, actions predominantly taken are efforts aimed at the maximization of satisfaction via the fulfilment of multiple motivations. A few of these have been identified by Maslow (1954). Maslow proffers the theorization that the basic needs of human are categorized into an order of relative vitality. Maslow was also of the belief that the needs of humans place themselves in 'pre-potency' order arrangement. The Theory of Needs Order further asserts that the prior satisfaction of one need which is more potent, determines the appearance of another need. Thus, the needs of humans constitute a hierarchy according to Maslow (1970), safety-security needs, the physiological needs, esteem needs, social needs, and self-actualization needs.

Francescato et al. (1986) asserted a definition of satisfaction as an attitude, and opined that responses and satisfaction to questions related to satisfaction could be deemed cognitive, conative/ behavioral, and affective. Such behavioral components are on the basis of overt actions exhibited by people in relation to the attitude object (MacKenzie and Lutz, 1989; Eagly and Chaiken, 1993). Studies conducted by Bem (1972) and Eagly & Chaiken (1993) opined that attitudes are formed through experiences – direct or indirect, derived from past behavior. People seem to infer attitudes which are in line with prior behaviors, from a self-perception account of attitude formation.

A cognitive aspect exists when information is processed by individuals about the attitude object, which then results to the formation of beliefs (Eagly and Chaiken, 1993). In similar to the attitude theory, made on the basis of the theory of reasoned action, Ajzen and Fishbein (1980) portrayed that attitudes are comprised of beliefs that individuals accumulate in their life-time. An attitude is thus the beliefs of an individual regarding whether the outcome of such action will be negative or positive.

An affective component is predicated upon emotional preferences or experiences. Both negative (e.g., anger) and positive (e.g., delight) affective impacts on products can emanate from experiences which are positive and negative pertaining to the service attributes (Derbaix and Pham 1991). Those with positive affective reactions to an experience with the services, have more likelihood to favorably evaluate an attitude object as being satisfactorily, and are unlikely to have a favorable attitude object evaluation from negative affect reactions (Oliver 1980, 1993; Westbrook 1987; Eagly and Chaiken, 1993).

A variety of the definitions by scholars of satisfaction, show consistencies with the Model of Expectancy Disconfirmation; satisfaction can be referred to as evaluating the discrepancy perceived between 'prior expectation' and the product's actual performance'; hence resonating with the conviction that satisfaction exists as a function of any discrepancies of perceptions between the prior expectations of the users (the beneficiaries) and the obtained product in its actuality (Churchill & Surprenant, 1982; Tse & Wilton, 1988; Oliver, 1993; Iacobucci & Oston, 1995). Oliver (1980) developed the Theory of Expectancy Disconfirmation, who made the proposal that the satisfaction level of a user, is an outcome of the difference between the product

performance (which is expected and perceived), and expectation (as a prediction of its future performance).

Although the broad meaning of satisfaction is known by everyone, it also does not obviously convey the same meaning for everyone (Day, 1980). From the perspectives of Poisz and van Grumbkow (1988), one can observe satisfaction as the discrepancy between what is observed and what is desired. Several researchers have argued that satisfaction can also be considered to be an outcome of an activity of consumption or experience, which is equally referred to as an evaluative process (e.g., Oliver 1980; Fornell 1992).

One could also associate satisfaction with the feelings of happiness, delight, excitement, relief and acceptance (Hoyer and MacInnis, 2001). Parker and Matthews (2001) explained that satisfaction can be further defined as an evaluation process between that which was obtained and what was expected, which tends to be the most extensively used description in the latest literature, of satisfaction. Satisfaction is extremely personal, and highly determined by past experiences and current expectations. In the same vein, researchers explained satisfaction as an expression of the fulfilment of an outcome which is expected, impacted by previously conceived expectation about the extent of quality (Ekinci 2004; cited in Eyiah-Botwe, 2015).

Two principal classifications of satisfaction exist: satisfaction as an outcome and process, respectively. However, these classifying categories often depend on each other, and so are complementary. When the definition of satisfaction is viewed as a process, this focuses on the factors before satisfaction, rather than on satisfaction in

itself. Alternatively, when it considered as an outcome, it is deemed an activity of consumption or as an experience, moderated by distinct variables (Parker & Mathew, 2001). The concept of satisfaction pertains to the varying and extensive range of desires and utilities to meet needs which are human basic and transcendental. Further, Dekker et al. (2011) defined satisfaction as a condition in which an individual's expectations are attained. Rai (2013) defined satisfaction stands for gratification, pleasure or fulfilment of desire and evaluated on the basis of what is received, against what was anticipated.

In summary, the construct of satisfaction has been defined in distinctive ways. Satisfaction has been defined by some researchers in terms of cognitive state, need fulfillment, attribute/benefit evaluation, pleasure/displeasure, and subjective experience evaluation. Later, satisfaction is deemed to be a response to an experience of a product, which is emotional. However, although researchers have employed a wide array of definitions for satisfaction, they have a general agreement that it has to do with a set of interrelated variables, and no single ones. Generally, satisfaction can be defined as the range of reaching/attaining the individuals' desire/needs, expectation, while others purport that it constitutes some sort of mental efforts, emotional feelings, or standards of behaviors towards a belief/goal.

Table 1. shows the main keywords that contributes to the definition of satisfaction. As shown, emotional response is considered as an element of assessing of satisfaction. Positive emotions, can be result in satisfaction while, negative emotions can be outcome of failing to meet a minimum standard. The dimensions detailing emotion reveal reflections of sentiments such as satisfaction and happiness, which ultimately

creates these feelings (Weidemann et al., 1982). Satisfaction is an emotional reaction to the distinction between an anticipation and outcome, or a general attitude of a user towards a service provider, on the fulfilment of some goal, need or desire. Expectation and experience are also contributed to define satisfaction (Hansemark and Albinsson, 2004). Expectation is strong beliefs about objects and can be defined as the desires and want of users. Satisfaction define by user's comparison between expectations and experiences and measure by the degree/direction of discrepancy between user expectations, perceptions and experience. The higher level of satisfaction indicates the lower discrepancy between expectations and experiences resulting the higher user's achievement and pleasure.

Table 1. Keywords That Contribute to the Definition of General Satisfaction

KEYWORDS		References
Primary Keywords	Emotional	(e.g., Locke, 1976; Westbrook and Reilly, 1983; Derbaix and Pham 1991; Parker and Matthews, 2001)
	Expectation	(e.g., Churchill and Surprenant, 1982; Tse and Wilton, 1988; Oliver, 1993; Parker and Matthews, 2001)
	Experience	(e.g., Bem, 1972; Hunt, 1977b; Derbaix and Pham, 1991; Eagly and Chaiken, 1993;)
	Perception	(e.g., Campbell et al., 1976 Churchill and Surprenant, 1982; Tse and Wilton, 1988; Oliver, 1993)
Secondary keywords	Pleasure	(e.g., Hunt, 1977b; Rai, 2013)
	Desire	(e.g., Locke, 1969; Zaltman et al., 1973; Poisz and van Grumbkow, 1988; Rai, 2013)
	Attitude	(e.g., Francescato et al., 1986; MacKenzie and Lutz, 1989; Ajzen and Fishbein, 1980; Hansemark and Albinsson, 2004)

2.1.1 Multidisciplinary Perspective on Satisfaction: Definitions and Meanings

Studies on satisfaction can be traced back to the 1940s and a more extended review of scholarly literature highlights that studies on satisfaction cut across several professions and disciplines (e.g., Canter & Rees, 1982; Weidemann & Anderson, 1985; Levy-Leboyer & Ratiu, 1993; Ge & Hokao, 2006; Hur & Morrow-Jones, 2008; Makinde, 2015). Satisfaction is a concept which is complex, with multiple application and meanings, and different conceptions and definitions of it, exists in different disciplines. Particularly, satisfaction uses in the different discipline namely social science such as marketing (e.g., consumer satisfaction), economy (e.g., job satisfaction), and humanities (e.g., life satisfaction, community satisfaction). Therefore, it will explain the variety of definitions in these disciplines in the following parts;

A) Social Science- Perspective

In the study by Kumar (2014) considered marketing as social science discipline. Also, Ross (1992) stated that economy can began in social science discipline. Furthermore, based on the works by (Swan and Combs, 1976; Rust and Oliver, 1994) considered consumer satisfaction as a marketing aspect. Moreover, Freeman (1977) examined job satisfaction from economy aspects. Therefore, the following part (a) and (b) describes the definitions and meanings of satisfaction in social science discipline such as marketing (e.g., consumer satisfaction) and economy (e.g., job satisfaction).

a) Consumer Satisfaction: Definitions and Meanings

Based on the previous study by Swan and Combs (1976), consumer satisfaction is deemed as a marketing aspect. The function of variation between the perceptions and expectation of service levels of a customer determines the perceived quality of service quality and satisfaction assessment. In the study by Howar and Sheth (1969) consumer satisfaction is considered as the point at which there is a coincidence of expectation

and reality, also related to psychological state. Anderson (1973) and Oliver (1981) defined that if expectations are not met by performance, customers will be negatively disconfirmed (dissatisfied).

Similarly, Peyton et al. (2003) stated that the customer tends to feel some degree of tension, when actual product performance and expectations are a mismatch. LaTour and Peat (1980) mentioned that a customer's satisfaction with a product is assumed to be a function of the discrepancies, which is addictive, between levels of experienced attributes and their comparison levels.

Although some authors perceive satisfaction as being a consumer's judgment of the degree to which a service or product provides fulfillment at a consumption-related level (Aga and Safakli, 2007), others make the argument that satisfaction is a construct of evaluation that consumer utilize in comparing the performance and quality of products or services, in relation to the expectations they have (Jaafar et al., 2005; Java et al., 2007; Hanif et al., 2010).

Also, Ekincia and Dawes (2009) investigates how the personality traits of service employees impact the quality of interaction and the satisfaction of the consumer from the consumers' perception. Similarly, Taylor and Baker, (1994) is to explore the correlative linkages between service quality perceptions and consumer satisfaction judgements.

The studies by (Czepiel and Rosenberg, 1977; p.73; Hansemark and Albinsson, 2004) stated that satisfaction is an overarching attitude of a customer towards one who

provides service, or an emotional reaction to the distinction between what is anticipated and received by a user, regarding the fulfilment of some goal, desire or need. They are of the argument that prior to an actual experience or consumption, an attitude cannot exist; that is, an attitude is comprised of affective components (e.g. anger, delight, satisfaction and favor), and is often reflected in behavior.

Oliver (1997; p. 13) opines on this issue of definition, by stating via the paraphrasing of the emotion literature, that satisfaction is that term which everyone seems to knows, until they are asked to provide a definition. To which nobody seems to know at that point. Kwon and Vogt (2010) examined the opinions and attitudes of local residents on the issue of place marketing and identified the roles of affective, behavioral and cognitive components in the negative or positive attitudes of residents toward place marketing.

The views in literature and of consumers of satisfaction, contains varying definitions of satisfaction, which are significant; all the definitions share certain commonalities. According to Giese and Cote (2000) examined consumer satisfaction as a whole, and there are three general components which are identified;

- Consumer satisfaction as a response (emotional or cognitive),
- One which pertains to a specific focus (consumption, expectations, experience, etc.); and,
- One which occurs at a specific time (after choice, after choice, on the basis of accumulated experience, etc.).

b) Job Satisfaction: Definitions and Meanings

Job satisfaction is defined differently by authors with different approaches. For example, the definition of job satisfaction in an earlier study by Hoppock (1935), as any mix of circumstances which are physiological, psychological, and environmental, that make one truthfully admit that one is satisfied with one's job. Job satisfaction has been considered to be a pleasurable/positive perceptual/emotional state emanating from an appraisal of one's work or experiences at a job (e.g., Locke, 1969, 1976; Pincus 1986; Cranny et. al., 1992). It proffers description about how we generally feel about an employment/work (Cowin et al., 2008) and is a positive affective orientation toward work (Ward and Cowman, 2007).

Those who conducted early research on job satisfaction portray the construct as positive and negative attitudes feelings to the job. For instance, the works by Miner (1992) and Brief (1998) mentioned that job satisfaction is an attitude toward one's job. In the study by Weiss (2002) stated that an overall attitude that a person has toward a general job, and constitutes the set of attitudes a person specifically has toward specific aspects of a job.

A considerable number of conceptualizations of job satisfaction are made on the basis of notions of a match between one's needs (Dawis et al., 1968) and goals (Smith et al., 1969). Bhardwaj et al. (2014) stated that for an employee in a business organization, this brings forth the desires, needs, and experiences which determines expectations that has been dismissed. Cranny et al. (1992) have defined job satisfaction is an affective reaction to one's job and resulting from making comparisons of real outcomes, with ones which are desired and expected.

Therefore, Job satisfaction can be representative of the extent to which expectations match and are the real awards. Thus, Hulin and Judge (2003) expressed that when the current situation and employment qualities of an employee is compared by him/her, with expectations that he/she finds ideal, he/she makes evaluations on the basis of feelings. Certain studies have demonstrated that the satisfaction derived from a job, or not, is dependent on the expectations of what the individual's perceptions of the provisions of such job are, and on the nature of the job (Lu et al., 2005; Daehlen, 2008).

Job satisfaction implies that one is happy with one's employment. Job satisfaction is the core component that results to the achievement of goals that lead to a feeling of fulfillment (Kaliski, 2007). In the studies by Skalli et al. (2008) and Dagher et al. (2011) investigated the role of emotions and feeling as a determinant factor in various job satisfaction areas, among the workers within the service sector.

B) Humanities Perspective

The humanities are another discipline that have studied satisfaction. Humanities discipline can be interpreting human experience at the individual level (Evans, 2007). Similarly, Tay et al. (2018) stated that humanities disciplines occupy a remarkable place in human life. Furthermore, they mentioned humanities discipline can be positive link to life satisfaction. Moreover, humanities disciplines can be studied from aspects of human society and community[1].

[1] https://sites.google.com/site/wikiacademicdisciplines/humanities

Therefore, the following parts (a) and (b) describe the definitions and meanings of satisfaction in humanities discipline such as (e.g., life satisfaction and community satisfaction).

a) Life Satisfaction: Definitions and Meanings

In an earlier study by for Sumner (1966) defined life satisfaction as the evaluation of the conditions of one's life, that is positive evaluation; on balance, a judgment and perception, that at least favorably measures up against one's expectations or standards.

Andrew (1974) believes that satisfaction with life symbolizes an ultimate outcome or encompassing criterion of human experience. Such experiences possess motivational abilities that make people pursue and attain their goals (Bailey et al., 2007). In the studies by (George and Bearson, 1980; Cribb, 2000) mentioned that satisfaction with life is an assessment of the totality of conditions of one's existence, as reached through comparing one's aspiration to actual achievements.

Generally, we can describe the satisfaction with life as positive emotional interaction that people express/accord to life, often defined as leisure time, job, and other out of work time (Hong, and Giannakopoulos, 1994). Life satisfaction is defined by Buetell (2006) as a general assessment of the attitudes and feelings about specific times of a person's life, from a negative to positive range. Although small variations exist between these definitions, the silver lining is common: life satisfaction pertains to the overall feelings of individuals about their life. In other word, it refers to an evaluation that is global, rather than rooted in any peculiar domain or any point in time.

Montgomery and Johansson (1988) highlighted that satisfaction with life shares close relations to residential satisfaction. However, Veenhoven (1996) clarified that it is one of the indicators of 'apparent' life quality along with points of mental and physical health. Similarly, in the studies by Diener et al. (2002) and Chen et al. (2016) mentioned that life satisfaction proffers direct reflection of the peasants' well-being and determines their life quality. It stands as one of three principal indicators of well-being and quality of life, negative and positive effects, on the basis of one's own chosen criteria (Diener, 1984; Zika & Chamberlain, 1992).

b) Community Satisfaction: Definitions and Meanings

Logically, since Arensberg (1954) defines the community as an arena in which we experience the most life events; satisfaction with one's community should thus be linked with the perception of the individual about the overall quality of life. Conventionally, satisfaction with community has been described to be reflections which are social psychological, of perceptions about the delivery of community service and perceptions of the physical environment's quality, to a lesser extent (Marans and Rodgers, 1975; Ladewig and McCann, 1980).

Brown's (1993) explained community satisfaction can be how well one's community meets social expectations. Later Brown et al. (2000) conceptualize community satisfaction as a manifestation of how well residents correctly assess their situation in relation to the expectations of the larger culture at a particular time as they act them out in a particular place.

Miller et al. (1980) referred to satisfaction with community as an attitude and the evaluation of an object. Attitude is a model of belief-affect (Fishbein and Ajzen, 1975),

which proffers people's combination of their evaluations of beliefs regarding an object, towards arriving at a common attitude.

Community satisfaction is the subjective evaluation of people of their own well-being, often measured by how well their personal needs are met by the local community (Matarrita-Cascante, 2010). Individuals engage in their most vital day-to-day interactions in the community, and they gain many of their most essential values, beliefs and norms from it (Karp et al., 1977; Bardo and Hughey 1984).

Community satisfaction often defined by the community's subjective assessments as a place to live, the extent of attachment to the community, emotionally, or by estimations of the future of the community (White, 1985). Bernard (2014) defined community satisfaction as the general evaluation of the conditions of living by inhabitants in a community.

The concept of community satisfaction is most notably exemplified by Marans and Rogers (1975), who argued that it constitutes the subjective evaluation of objective conditions (services, ecology, and other things) in the local community and how they contribute to a person's overall quality of life. Similarly, Hughey and Bardo (1987) examined the correlation between dimensions of a perceived life quality and community satisfaction among residents. Theodori (2001) explored the effects of the satisfaction with the community, and attachment on the well-being of the individual, and found that its associated independently and positively with individual well-being.

On the other hand, Bardo (1976) and Goudy (1977) have assessed that the level of control perceived over the affairs of a community affects the satisfaction of residents with the community. However, Dekker et al. (2011) stated that community satisfaction usually considered separate elements of residential satisfaction and are therefore mostly assessed and analyzed separately (Aigbavboa and Thwala, 2016).

With the prior perspectives, we can deduce that satisfaction is overall defined as an evaluation services' and goods' performance evaluation in attaining the expectations, needs and aspirations of the consumers. Also, it can be believed to be a comparison between the customer's expectations of values and the ones received, of goods and services, by such customers. Overall, Table 2 shows the common keywords associated with the definitions of satisfaction, consumer satisfaction, job satisfaction, community satisfaction and life satisfaction on the basis of literature and mentioned-above studies. Also, Table 3 shows the references of satisfaction keywords.

Table 2. Keywords of Satisfaction

Dimensions	Keywords		
General Satisfaction	• Emotional (1,2,3,4) • Expectation (4,5,6,7) • Experience (3,8,9,10) • Perception (5,6,11,12) • Pleasure • (9,13) • Desire (13,14,15,16) • Attitude (17,18,19,20)		
A) Social Science Perspective			
a) Marketing (21)			

Consumer satisfaction (22,23)	• Emotional (24,25,26,27) • Expectation (27,28,29) • Experience (27,30) • Perception (31,32) • Attitude (24,25,33) • Desire/Aspiration (24, 25) • Need (24, 25)	→ **Common Keywords** →	• Emotional • Expectation • Experience • Perception
b) Economy (34) Job Satisfaction (35)	• Emotional (14,36,37) • Expectation • (36,38,39 • Experience (14,38,39) • Perception (14,40,41) • Attitude (42,43,44) • Desire/Aspiration (38,41) • Need (38,45) • Pleasure • (14,40,41)		
B) Humanities Perspective			
Life Satisfaction (46)	• Emotional (47,48) • Expectation (49) • Experience (50, 51) • Perception (49) • Attitude (48,52) • Desire/Aspiration (53,54) • Well-being (55,56) • Quality of life • (57)	→ **Common Keywords** →	• Emotional • Expectation • Experience • Perception

Community Satisfaction	• Emotional • (58) • Expectation (59,60) • Experience (61) • Perception (6,62) • Attitude (63) • Quality of life • (64,62)		

Table 3. References of Satisfaction keywords

1	Locke (1976)	23	Rust and Oliver (1994)	45	Dawis et al. (1968)
2	Westbrook and Reilly (1983)	24	Czepiel and Rosenberg (1977)	46	Tay et al. (2018)
3	Derbaix and Pham (1991)	25	Hansemark and Albinsson (2004)	47	Hong and Giannakopoulos (1994)
4	Parker and Matthews (2001)	26	Oliver (1997)	48	Buetell (2006)
5	Churchill and Surprenant (1982)	27	Giese and Cote (2000)	49	Sumner (1966)
6	Tse and Wilton (1988)	28	Oliver (1981)	50	Andrew (1974)
7	Oliver (1993)	29	Java et al. (2007)	51	Bailey et al. (2007)
8	Bem (1972)	30	LaTour and Peat (1980)	52	Fishbein and Ajzen (1975)
9	Hunt (1977b)	31	Ekincia and Dawes (2009)	53	George and Bearson (1980)
10	Eagly and Chaiken (1993)	32	Taylor and Baker (1994)	54	Cribb (2000)
11	Campbell et al. (1976)	33	Kwon and Vogt (2010)	55	Diener et al. (2002)
12	Oliver (1993)	34	Ross (1992)	56	Chen et al. (2016)
13	Rai (2013)	35	Freeman (1977)	57	Veenhoven (1996)
14	Locke (1969)	36	Hulin and Judge (2003)	58	White (1985)
15	Zaltman et al. (1973)	37	Cowin et al. (2008)	59	Brown's (1993)
16	Poisz and van Grumbkow (1988)	38	Bhardwaj et al. (2014)	60	(Brown et al. (2000)
17	Francescato et al. (1986)	39	Daehlen (2008)	61	Arensberg (1954)

18	MacKenzie and Lutz (1989)	40	Pincus (1986)	62	Marans and Rodgers (1975)
19	Ajzen and Fishbein (1980)	41	Cranny et al. (1992)	63	Miller et al. (1980)
20	Hansemark and Albinsson (2004)	42	Weiss (2002)	64	Matarrita-Cascante (2010)
21	Kumar (2014)	43	Brief (1998)		
22	Swan and Combs (1976)	44	Miner (1992)		

2.2 Residential Satisfaction

This section will explain the definitions of residential satisfaction based on previous studies. Second, it will review elaborately the related literature of residential satisfaction. Third, it will describe the most important theories of residential satisfaction which are used in the studies. Lastly, it will explain the important conceptual models of residential satisfaction used by prior studies. Most of the studies also related to the satisfaction of residents, explained and used one or combination of these conceptual models.

2.2.1 Residential Satisfaction: Definitions and Meanings

Campbell et al. (1976) defined residential satisfaction as the distinctions perceived between the expectations of residents and their reality. The work of McCray and Day (1977) discussed that residential satisfaction relates to the degree of satisfaction experienced by a family member or individual regarding their current residential condition.

Lu (1999) considered residential satisfaction to be a complex cognitive construct. Fornara et al. (2010) argued that residential satisfaction is comprehended as the gratification or pleasure obtained via experience, when residing in a particular place. Satisfaction can also be seen as an issue which is dynamic, since it largely depends, to

an extent, on the expectations and needs of the residents, and has minor variations among dwellers in various residences (McCrea et al., 2005, 2014).

Consequently, several studies made suggestions that housing satisfaction increases, if the gap between needs and demands decreases (Morrissy and Handal, 1981; Canter and Rees, 1982; Bardo and Hughey, 1984). In other word, these studies mentioned that the satisfaction of residents rises, with the decrease in the gap between need and demand.

While scholars argued that residential satisfaction defined as the range of meeting individuals' needs (e.g., Ukoha and Beamish, 1997; Mohit and Nazyddah, 2011; Lin and Li, 2017), several studies explained that it was some sort of mental effort, standard of behaviors or emotional feelings, towards a belief or goal (e.g., Francescato et al., 1979; Amérigo and Aragonés, 1990; Etminani-Ghasrodashti et al., 2017). The emotional dimension has to do with satisfied, sentimental and happy reflections, that then brings about these feelings (Gold, 1980; Weidemann et al., 1982). Fleury-Bahi et al. (2008) argued that such satisfaction may also be dependent on the emotional bonds with the place.

In general, one can define residential satisfaction by discrepancy between residents' need and desires from housing and or environment perspectives. Onibokun (1974) and Ogu (2002) defined housing satisfaction encompasses satisfaction with a dwelling unit. Galster and Hesser (1981) defined residential satisfaction as indication of the difference between the situation which the household actually gets and their preferred housing situation. According to Galster (1987), individuals conduct evaluations of

their housing, based on their future desires and past experiences, and not only by their actual conditions.

Sometimes, new experiences of residents and increased awareness levels might result in new expectation levels, which will result to changes in the extent of satisfaction. Francescato et al. (1979) defined satisfaction with residence as the response made emotionally, to a dwelling of a person; the negative or positive feeling that the occupants have, regarding their place of residence.

Pacione (1990) pointed out that dwellers who are unable to attain the desired satisfaction level via modification of their current living setting, will experience 'residential stress'; which might ultimately result to migration. It should be noted that the housing expectations of people are not always the same, because it depends on their different opinions.

Wiesenfeld (1992) discussed that residential satisfaction is a condition of equilibrium between the user and the design which is built, and between the aspirations and needs of the people and the actual housing situation. Salleh (2008) mentioned that residential satisfaction can be defined by the conditions of housing quality. Satisfaction with households' housing conditions can be defined as the lack of any complaints, alongside a high level of congruence between desired and actual situations (Mohit et al., 2010; Mohit and Raja, 2014). Consequently, when such congruence is not there, the aspirations and needs of individuals are redefine by them, and they modify the conditions that they find themselves or alter their evaluation of the housing (Galster and Hesser, 1981).

Further, the concept of residential satisfaction or satisfaction with housing is often assessed as the degree to which the current housing environment of residents, are liked or disliked by them. It becomes possible to study satisfactions with housing, with such a definition, through asking people, via distinct survey methods, whether they have complaints with specific aspects of their housing environment, and whether they feel happiness or not with their housing environment.

Onibokun (1974) and Ogu (2002) defined housing satisfaction encompasses satisfaction with neighborhood. Canter and Rees (1982; p.185) interpreted residential satisfaction as being a reflection of the extent to which residents believe their residential housing to be assisting the achievement of their objectives. In this sense, people are considered to have specific objectives and goals, channeled towards the achievement of such goals, and the indication of residential satisfaction emanating from the degree to which people's residential environment is perceived to be facilitating the attainment of their goals.

The works (Amérigo and Aragonés, 1997; Cutter, 1982; Francescato, 1982; Galster, 1987) mentioned that residential satisfaction can be consider as the appraisal of individuals of the state of their environment of resident, in relation to their expectations, needs, and achievements. In the behavioral aspect, residential satisfaction has to do with the attitude of dependency towards the residential environment. Similarly, Salleh (2008) and Mohit et al. (2010) stated that residential satisfaction has also been considered as an exploration of the degree to which the present residents' housing environment is tending to their expectations, needs, and aspirations.

Furthermore, despite of using one dimension such as physical environment (Riemer, 1945; Mogey and Morris, 1960) or social environment (Fried and Gleicher, 1961; Wilner et al., 1962), the works (Mesch and Manor, 1988; Ifesanya, 2003; Makinde, 2015) suggested that housing satisfaction in the expression used today has turned into a multi- dimensional bundle of social, political, economic, and culture.

They argued that it is better to define residential satisfaction from housing and environment perspectives by considering the multi-dimensions including cultural, social, economic, and environment. For instance, Morris and Winter (1975) posited that the cultural and family norms of individuals form the basis for evaluating conditions of housing. Cultural norms have impacts on the ways in which people define the expectations of their cultures for their housing conditions, and their behavior. Hardoy et al. (1992) and Thaman (2002) argued that culture influence perceptions and outlooks of residents and overall satisfaction.

Likewise, several studies considered social dimension can impact residential satisfaction (Fleury-Bahi et al., 2008; Mohit and Azim, 2012; Etminani-Ghasrodashti et al., 2017). Hashim (2003) defined residents' satisfaction by the quality of social and physical aspects of their housing conditions. Toscano and Amestoy (2008) examined housing satisfaction with social interactions. Findings of many studies highlighted that dissatisfaction with social problems impact the mobility of residents, as well as residential satisfaction (Andersen, 2008).

Besides, Fleury-Bahi et al. (2008) and Kahreman (2013) studied the importance of environment aspect in the context of residential satisfaction. Erdoğan et al. (2007)

makes the indication that environmental and social living conditions positively impact housing satisfaction. Moreover, the studies (Mustapha et al., 1995; Varady and Carroza, 2000; Baiden et al., 2011; Kahreman, 2013) considered the importance of economic dimension (e.g., housing finance or financial investment) on housing satisfaction.

Table 4 presents selected the definitions of residential satisfaction, which used in most important studies. Comparing the definitions of residential satisfaction and the common keywords extracted from multidisciplinary perspective as shown in Table 2, it is possible, based on the mentioned studies, to conclude that the common keywords of emotional, expectation, experience, and perception can also be applied to define residential satisfaction from housing and environment perspectives and using the combination of these main keywords enable to define residential satisfaction more accurately.

Table 4. Definitions of Residential Satisfaction

References	Residential satisfaction is	Main Keywords			
		Emotional	Expectation	Experience	Perception
Onibokun (1974)	Based on the experience of residents with dwelling unit and the environment/ neighborhood			x	
Campbell et al. (1976)	The perceived difference between the expectations about residential dwelling and reality of residents.		x		x
McCray and Day (1977)	The level of experiences by an individual or a family member with their present residential situation.			x	

Francescato et al. (1979)	A person's emotional response to a one's dwelling.	x			
Galster and Hesser (1981)	Indication of the difference between an actual housing situation of a household and its preferred housing situation.		x	x	
Galster (1987)	The evaluation by residents with their housing by actual conditions, desires for the future and past experiences.		x	x	
Canter and Rees (1982)	The extent of the feelings of inhabitants that their housing is enabling them to achieve their goals (expectation and experience)	x	x	x	
Kaitilla (1993)	The household with experiences of both the house as a different physical object and the neighborhood/environment.			x	
Amérigo and Aragonés (1997)	An individuals' judgement of the state of the environment of their residence in relation to their needs, achievements and expectations.			x	
Lu (1999)	The actual residential environment meets an individual's residential aspirations and a complex cognitive construct.		x	x	
Ogu (2002)	Employed to evaluate the perceptions by residents and their feelings for their housing environment and unit.	x			x
Hardoy et al. (1992) and Thaman (2002)	The perceptions of residents and impacted by culture.				x
Hashim (2003)	The residents' contentment the feelings and perceptions with the social perspective and physical quality of their housing situations.	x			x
Salleh (2008)	The housing environment of residents is reaching their aspirations, needs, and expectations.		x		
Fornara et al. (2010)	The pleasure or gratification experienced with living conditions.			x	
McCrea et al. (2005, 2014)	The residents' needs and expectations, having slight variations among inhabitants in different residences.			x	

Kahreman (2013)	The gap between residents need and expectation and impacted by economic dimension			x	

In summary, as shows in Table 4, various authors defined residential satisfaction from housing and environment perspectives by considering the multi-dimensions including cultural, social, economic, and environment. In all of these definitions mentioned-above, satisfaction achieves by the compatibility of residents' needs with desires or residents' expectations with experiences. Overall, residents are dissatisfied when the level of discrepancy between user's expectations (belief) and experiences is high from housing and environment perspectives and vice versa. Also, the level of discrepancy varies by user's emotional and feeling.

2.2.2 Overview of Residential Satisfaction Studies

Despite the numerus studies of satisfaction in different disciplines as explained above, residential satisfaction has attracted specifically the interested of many scholars since 1970s in the subject of housing research and urban studies (Ukoha and Beamish, 1997; Ibem and Aduwo, 2013; Huang and Du, 2015; Lin and Li, 2017). Research conducted on residential satisfaction has various and differing objectives, the improvement of the quality of life of residents, included, as well as the aims of evaluating their housing situation, and their priorities and needs; the mobility patterns of residents (Galster and Hesser 1981; Lu 1999; Liu 2003; Fang 2006; Salleh 2008; Lee and Park 2010; Mohit and Nazyddah 2011).

In an influential study, Campbell et al. (1976) perceived housing/residential satisfaction as one amongst other predictors of life experience, wherein satisfaction as a variable, might add to the life quality of a person. Similarly, the works (Prilleltensky,

2005; Braubach, 2007; Hur and Morrow-Jones, 2008; Caldieron 2011) discussed that residential satisfaction contributes to an individual's life quality and psychological well-being. Furthermore, the works (Li and Wu, 2013; Huang and Du, 2015; Zhang and Lu, 2016) argued that residential satisfaction is deemed to be a criterion for assessing the residential quality or their quality of life (Tao et al., 2015; Gan et al., 2016) and explored the relations of observed satisfaction with residence, for particular population groups in varying neighborhoods of residence. Similarly, the residential quality has been considered as a main determinant of housing satisfaction, by many scholars (Addo, 2016; Gan et al., 2016).

Besides, some studies have considered residential satisfaction as predicting behavior, finding a dynamic link between the satisfaction of residents and their mobility. The work of Fang (2006) suggested that low satisfaction with residence does not emanate to higher occurrence of relocation. However, studies (e.g., Earhart and Weber, 1996; Oh, 2003; He and Qi, 2014) found that satisfaction with residential is an essential factor that impacts the intention of residents to move. Jiang et al. (2017) found that a higher residential satisfaction leads to a lower intention to move of residents, and residents' satisfaction, particularly with housing and living environment, has a significant effect on mobility behaviors. However, findings of Zhang and Lu (2016) showed that lower residential satisfaction has not resulted in high mobility of residents. Consequently, Weidemann and Anderson (1985) by combining the two approaches considered residential satisfaction as one criterion of the quality of residence and predictor of behavior.

According to social psychologists, resident's responses to satisfaction/dissatisfaction evaluates based on three groups namely the cognitive, conative/behavioral and the affective. Affective pertains to feelings and evaluations of a person towards some issue, object, event or person. The cognitive denotes opinions, thoughts, beliefs and knowledge. Lastly, conative denotes the intentions of actions and behavior, with regards to/or in the object's presence.

Considering that these three categories avail useful testing and comprehension frameworks, the underpinned theoretical development for the research on residential satisfaction (Francescato, et al., 1987; Weidemann and Anderson, 1985) though there is no general agreement regarding what type of evaluation residential satisfaction falls under. Although certain authors have conceptions of residential satisfaction as being a solely cognitive evaluation (Canter and Rees, 1982; Mandler, 1984; Oseland, 1990), some others have argued that it is affective (Weidemann and Anderson, 1985). Nevertheless, authors such as Francescato et al. (1989) are not of the belief satisfaction as an evaluation, can be expressly separated into affective or cognition.

Over the past decades, the subject of residential satisfaction has mainly assessed by researchers from housing dwelling and neighborhood environments perspectives (Campbell, et al., 1976; Weidemann and Anderson, 1985; Francescato, et al., 1987). Moreover, some studies emphasized the predictors of residential satisfaction (Dekker et al. 2011; Li and Wu 2013; Gan et al., 2016; Ibem et al., 2019). Similarly, research (Lu, 1999; Ogu, 2002) has shown that the perceptions of housing by residents and conditions of their neighborhoods, are influential indicators of satisfaction with

residence. Residents' perceptions of the physical state of housing were positively tied to satisfaction with residential (Ogu, 2002).

Besides, several studies have showed that demographic features (e.g., age, marital, gender, race, and household size, ownership of house, income, length of stay) impact residential satisfaction (e.g., Spear, 1974; Galster and Hesser, 1981; Lu, 1999; Ogu, 2002; Lee and Park, 2010; Ibem and Amole, 2013; Gan et al., 2019).

In addition, the study by Husna and Nurijan (1987) revealed that ethnic differences among residents is an important implication on housing satisfaction. Djebarni and Al-Abed (2000) opined that satisfaction with privacy within neighborhood is dependent on the society's cultural background. The study by Riazi and Emami (2018) found that ethnicity places moderation on the relationship between residential satisfaction and interaction with one's neighbors. Shuey, et al. (2016) expressed that there is an impact of ethnicity/race of families on their housing preferences and neighborhood condition. Some studies also revealed that residential satisfaction is more elevated among landlords than renters (Rohe and Basolo1997; Lu, 1999; Elsinga and Hockstra, 2005), which is in contrasted the findings of Husna and Nurijan (1987) who did not uncover any variety between owner and renter residents of public housing.

Moreover, Onibokun (1974) evaluated residential satisfaction from dwelling, environment and management by distinction between residents and non-residents. The author mentioned that by this non-directive style of questioning, the opportunity of commenting spontaneously and freely, and identifying perceived benefits or advantages, hindrances/disadvantages, were given to the tenants, as well as the factors

promoting their relative satisfaction. Figure 2 shows the summary of socio-demographic characteristic may impact residential satisfaction.

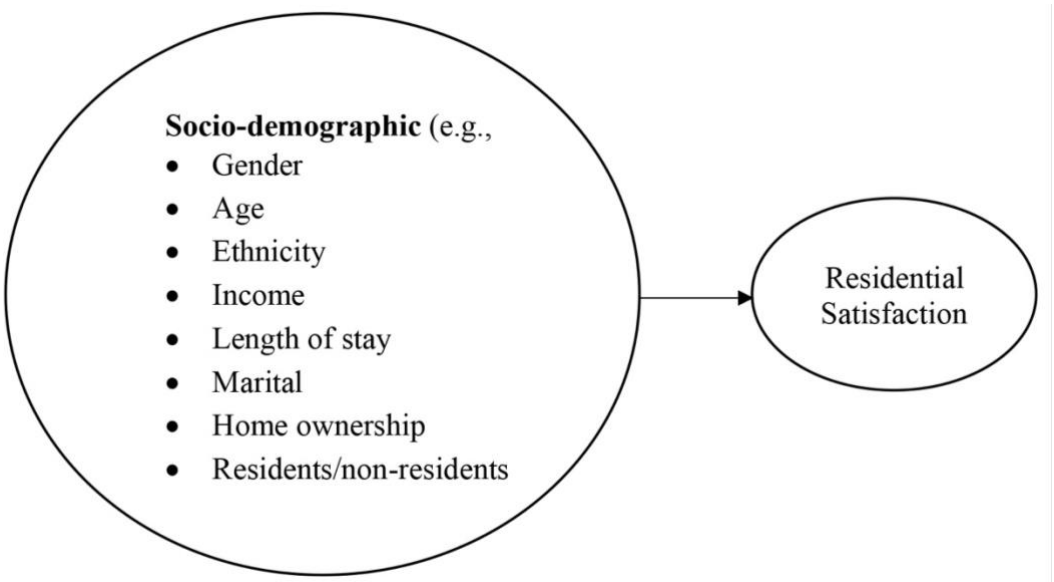


Figure 2. Relationship between Socio-demographic Characteristic and Residential Satisfaction

In the literature, studies have investigated determinants of residential satisfaction in varying countries such as Nigeria (e.g., Ukoha and Beamish, 1997; Ibem and Aduwo, 2013), Malaysia (e.g., Salleh, 2008; Mohit et al., 2010), Turkey (Erdogan et al., 2007; Berkoz et al., 2009; Kahraman, 2013), Italy (Aiello et al., 2010), Australia (Smith, 2011), and Iran (e.g., Etminani-Ghasrodashti et al., 2017; Ghafourian and Hesari, 2017).

Also, researchers have particularly studied residential satisfaction among various distinct social groups (Baillie and Peart, 1992; Cook et al., 1994), multifamily housing (Weidemann and Anderson, 1982), high-rises buildings (Gifford, 2007), low-income housing (Salleh, 2008; Riazi and Emami, 2018), college residence halls (Amole, 2009), neighborhoods or district (Amerigo and Aragones, 1990; Herfert et.al., 2013;

Barreira et al., 2017), public housing (e.g., Ukoha and Beamish, 1997; Ibem and Amole, 2013; Etminani-Ghasrodashti et al., 2017), urban housing (Erdogan et al., 2007); planned community (Smith, 2011); and double-story terrace housing (Mohit & Mahfoud, 2015).

As a result of reviewing of residential satisfaction studies, satisfaction with residence is not only employed as a predictor in the evaluation of policies of housing, but it is also as an indicator of the propensity of mobility, quality of housing, and the well-being and life quality of the residents. Moreover, residential satisfaction should be evaluating by housing and surrounding area based on the belief, perception, preferences and priorities of residents. Furthermore, socio-demographic characteristics can impact residential satisfaction.

2.2.3 Theories of Residential Satisfaction

Over the last three decades, residential satisfaction has been a key focus of housing research and interests of many scholars. It is of essence to hold an approach which is multidisciplinary, in order to comprehend the complex development and emergence of residential satisfaction through varying theories. Experts in various disciplines such as architecture/urbanism, social sciences, environmental/social psychology, and cultural studies, developed few theories exploring residential satisfaction.

Residential satisfaction theories all depend on the notion that satisfaction with residence measures the differences between desire/aspirations and outcomes for households, housing and situations within the neighborhood (Galester & Hesser, 1981). Prior research on residential satisfaction, reveals that three key theories exist, which form the basis of most of the studies.

For example, many scholars such as (Sulaiman & Yahaya, 1987; Bruin & Cook, 1997; Lu, 1999; Potter& Cantarero, 2006; Salleh, 2008; Mohit et al., 2010; Mohit & Nazyddah, 2011; Mohit & Raja, 2014; Makinde, 2015; Mohit & Mahfoud, 2015; Jiang et al., 2017; Riazi & Emami, 2018; Li et al., 2019; Sanderson, 2019) have studies residential satisfaction mainly based on the three main theories of "*housing needs*" (Rossi, 1955), "*housing deficit*" (Morris & Winter, 1975, 1978), and "*psychological construct*" (Galster, 1985). In this section, it elaborates the above-mentioned theories as follows;

A) Housing Need Theory (Rossi, 1955)

Riemer (1943) propagated the theory of sociological "home adjustment," and the author asserted that the needs of the home differ in time and family type. A couple of years later, the authors paper about (mal) adjustment of the family house on the basis of functions, was published (Riemer, 1945). The author indeed linked sociology and architecture, and developed the (mal) adjustment concept, in dwelling.

Studies conducted in the post-war era on the process of residential mobility, was expatiated extendedly with the famous book by Rossi (1955) named "why families move." Rossi (1955) were one of the first performed studies in this field which focused on residential behaviors especially decisions relating to relocation/migration, and discovered that households in life cycles, face lack of fit in terms of their housing needs. The author applied the housing needs concept argued that the extent of residential satisfaction differs and is reliant on changes in lifecycle stages and it is stronger correlated to residential mobility.

Rossi (1955) stated that as a matter, residential mobility is fairly properly shown primarily in terms of household interactions of their particular needs of housing and their specific abode, that reach or do not reach such needs. These needs as can be mentioned, are dependent on the desire and demands of the inhabitants. The adjustive household reaction to their needs in housing, comprises residential mobility. The author emphasized on residential behaviors especially decisions pertaining to relocation/migration, and uncovered that households in life cycle face fitting deficiencies, regarding their housing needs. In another word, the "lack of fit" between the present and desired needs in housing of residents, create dissatisfaction or stress with their place of current residence, in most cases, provides motivation for families to relocate (Rossi, 1955). These problems are can be caused by household age, size, space requirements, prestige, etcetera, cause dissatisfaction. The author was greatly depended on family life cycle as a concept, in organizing his interpretation and considered the needs in housing as rather emanating directly from the family's composition.

According to Rossi (1955, p. 178), the needs in housing of residents are basically determined through the household's composition. As families pass through the cycle of life – growth and decline – they change. The needs in housing alter quickly in the early years, as requirements for space rise fast, and the family grows more sensitive to the physical and social environment made possible by its housing location.

Rossi (1955) postulated that migration is a response to the dissatisfaction caused by changes of lifecycle stages and is considered a channel with the aim of increasing the satisfaction level (Wolpert, 1966). Hence, migration is regarded as an adjustment

process for the enhancement of residential satisfaction. Households are responsive to such dissatisfaction or stress through migration, that adjusts a family's housing in line with its housing needs. Changes in life cycle may give rise to variant requirements of space, to be considered as the most essential parts of the needs. Thus, if housing and neighborhoods of households do not meet their residential aspirations and needs, they are likely to feel dissatisfied.

Besides Rossi's work, scholars such as (Sabagh et al., 1969; Speare ,1970; Dökmeci and Berköz, 2000) provided some studies in this regard and besides social issues, they paid attention to the effect of issues such as the household and city's economy, ownership right and income on relocation (Ross et al., 2012). In another study by Clark and Onaka (1983) argued that life cycle is a more essential as a determinant, compared to tenure, cost, etc. People may also make the decision to alter their home location and to adjust housing consumption, with alterations in accumulated wealth and income at varying life cycle stages (Kendig, 1984). Moreover, some scholarly works (Clark and Huang, 2003; Feijten and van Ham, 2007; Rabe and Taylor, 2010) affirmed the essence of lifecycle for couples in the explanation of residential mobility. In addition, the study by Bartel (1979) argued that the career change as one of the most important events in the life, and there is a positive relationship between job and residential relocation.

B) Housing Deficit Theory (Morris and Winter, 1975, 1978)

The Housing Deficit Theory was established by Morris and Winter (1975), as a way of explaining the judgement of the family via some norms faced. These scholars mentioned that the adjustment of the family housing is a solution for the inconsistency with such norms. It is a normative/cultural theory which tried to explain residential mobility via the housing adjustment model. They mentioned that Rossi's reference to

sensitivity to the social and physical environment approaches, however their viewed housing needs from cultural norms. Standards of ‘good’ or ‘bad’, through which conditions/behavior faced by members of a certain culture are evaluated.

The study by Morris and Winter (1978); Morris and Jakubczak (1988) using the concept of housing deficit postulated that level of satisfaction with residential dwelling is dependent on the compatibility between the real housing satisfaction and standards (e.g., personal, culture). Mustapha et al (1995; p.460) explained housing norms as standards which pertain to the dwelling and the residential environment. They differ from zoning regulations that create stipulations of specifications about the minimum distance that a house ought to be set back from its street, to such informal rules on having a quiet place of residence, amongst other things (Mustapha et al., 1995, p.460). Hence, this model asserts that a good or bad standard should be set in accordance to each country’s cultural environment. The local needs of housing should determine how standards are set, in consideration of ethnic and cultural factors, rather than applying some global standard set in various countries. For example, in US., a single-family, the housing or cultural norm is a detached home surrounded by well-landscaped lawns in its mainstream culture (Lu, 1999).

When housing norms are not met, a housing deficit is the resultant condition. Deviating from either family or cultural norms for housing is an indicator of a normative housing deficits of a household. In other words, the current housing of families/ individuals is evaluated by them against their cultural norms and family norms, that make prescriptions about the levels considered appropriate for housing conditions.

Deficits cause dissatisfaction. A family which lives in a residential housing which does not meet either the family or cultural norms, is expected to feel more dissatisfaction than ones in housing that meets such norms. A deficit in housing can be made manifest in the types of dissatisfaction and inadequacies in housings, and may result to adjustments in housing behaviors such as family adaptation, residential mobility and residential adaptation (Morris and Winter, 1975).

In their residential mobility's housing adjustment model, the theorization that individuals pass judgement about their conditions of housing in accordance with the norms normatively defined, were made; inclusive of both cultural norms, often dictated by rules of life conditions and societal standards, and the personal/family norms that include social, physical, psychological, and economic factors, that constitute the households' own housing standards. The works of (Sulaiman and Yahava, 1987; Mohit et al., 2010) used the housing deficit concept in their studies.

In general, housing deficit theory argued that if the present housing of a household meets the norms, such a household is of the likelihood to express a heightened satisfaction level with the neighborhood and housing. An inconsistency between actual conditions of housing and the housing norms lead to a housing deficit, which inadvertently inspires a rise in residential dissatisfaction. Once a certain threshold level of dissatisfaction is surpassed, with the current residence, some housing adjustments are to be likely considered (Salleh, 2008).

Such adjustment may occur in the form of intentions of relocation, except for some reasons which are socio-economic. They assumed that a rise in residential

dissatisfaction is an outcome of housing deficit caused by incompatibility between the real housing satisfaction and housing norms.

They suggested that reconciling the incongruity by adjusting housing needs and aspirations and remodeling to improve housing conditions are some forms of housing adjustments that may lead to increased residential satisfaction. It is also possible to relocate to a different area, to align their housing aspirations and needs together (Morris and Winter, 1978).

C) Psychological Construct Theory (Galster, 1985)

Residential satisfaction, on the basis of the notion of "psychological construct theory" (Galster, 1985), is an assessment of the degree to which the dwelling of present residents and their environment quality is close to the aspiration of their most favorite one. According to this theory, the cognitive construct of everyone leads to incongruence or congruence, and acts as a form of reference with living conditions. Another idea of this "psychological construct" of satisfaction with residential, is made on the basis of the conceptual foundation that persons may consider as cognitively framing a condition of "reference", between aspirations and needs, for each particular aspect of their situation of residence.

The quality or quantity of the given aspect as implied by the point of reference will be dependent on the self-assessment of the individual's aspirations and needs (Michelson, 1976; Galster and Hesser, 1981). If the present situation is considered to be superior to or in proximate consistency with the situation of reference, a psychological situation of 'satisfaction' ought to be attained. If the current situation, on the other hand, has shortcomings in respect to the situation of reference, by going over a 'threshold

deficiency', there are two possible alternatives. One could seek to reconcile such inconsistency via 'adaptation': i.e. redefining ones needs, changing the current situation's evaluation, and/or reducing aspirations, thus producing a modicum of satisfaction. Alternatively, one cannot adapt somehow to the current context of residence, in which case the 'dissatisfaction' should be made manifest. Over time, such individual would likely seek the reduction of their dissatisfaction via the alteration of the conditions in their current place of dwelling or through the moving to another residential situation which is more congruent (Foote et al., 1960). Relatively, these options may be limited, by purchasing power or lack for households with lower income, and discrimination against the households that constitute the minority.

In this process, the schemata of everyone plays a vital role as a comparison criterion. The psychological parts of human beings share close relations with the subjective measurement of satisfaction; this in addition measures emotions, aspirations, perception, and attitudes.

For instance, in a conceptual framework by Li et al. (2019) mentioned that in consideration of previous scholarly literature, residential satisfaction is a cognitive construct, which is complex (Lu, 1999), and can be evaluated by the perceptions of the households about the differences between desired housing/neighborhood conditions and the actual ones, on the basis of the theory of psychological construct (Galster, 1985). From this perspective, residents foresee features which are noticeable about their physical environment, evaluating them via comparison with certain standards; specifically, ones set by what people are of the belief that they may aspire to reasonably (Galster, 1987).

Moreover, Li et al. (2019) stated that first, people build references subconsciously, of what an ideal standard is, about the different parts of their residential condition, on the basis of their aspirations and needs, to which they then tend to compare their housing situation, with ones considered to be the “ideal standard”. Similarly, in the study by Riazi and Emami (2018) used psychological construct theory based on the degree of residential satisfaction is dependent on the extent of the gap between the foreseen actual environment, and that aspired towards by the residents.

Further, Galster (1985) represented a new housing indicator to assess housing preference (either consciously or unconsciously) called “*marginal residential improvement priority*” and is compared empirically and theoretically with residential satisfaction.

Marginal Residential Improvement Priority

Perhaps, the psychological construct of 'marginal residential improvement priority' appears more straightforward, in light of individual rank order and their preference of various parts of the environment of residence, in terms that they would have preference to and if given the opportunity, improvement at the margin.

Marginal residential improvement priority proffers the explanation that despite matter which residential dimension, environment dissatisfaction takes place, to improve extents of satisfaction, individuals grant as first priority, the quality of dwelling. Cutter (1982) mentioned that these preferences are those characteristics of the ideal housing unit (in some cases the community as well) which the household considers important to their well-being. Thus, preferences include those residential characteristics which

are not only desired, but those that are considered reasonable and necessary to the individual. New opportunities (increased affluence, change in life cycle) can create a new ideal incorporating a new set of preferences, priorities, and expectations of attaining the ideal and the existing situation.

More specifically, Galster (1985) showed that the public services were given the lowest priority of improvement by all household strata, and their highest was quality of dwelling, irrespective of their relative satisfaction level with the dimension. Similarly, the improvement of room size and interior conditions was granted high priority by most group, with low priority given to the improvement of exterior conditions, independent of their satisfaction.

The relationship between satisfaction with residence and improvement priority is always such that components of the residential environment, that one assigns high improvement priority, are ones with which one is dissatisfied. And if this is not the case, which concept offers a superior predictor of the underlying structure of preference? More so, Galster (1985) stated that the construct of residential satisfaction was a flawed approach to advising on improvements that are need-based for the residential settings. The author made propositions of the concept of 'marginal residential improvement priority', being an alternative recourse in the studies of residential satisfaction. The author provided an evidence that a 'marginal residential improvement priority' as a concept, served as a better alternative than studies of evaluation of residential satisfaction in existence. "*Marginal improvement priority",* is a situation where a set of factors are selected by the researcher, who enjoins residents

to rank such factors on the basis of what they want to be improved, reliant on their preferences.

Also, (Galster, 1985; Galster, 1987) presented the concept of psychological construct of residential satisfaction and postulated that residential conditions among households depends on ones needs and desires. Hence, congruence amid authentic and expected circumstances may cause satisfaction and vice versa. Households often pass their judgements concerning conditions of residence on the basis of their aspirations and needs. Dissatisfaction may emanate, on the other hand, with the mismatch between housing aspirations/expectations and needs.

As mentioned in the theories of residential satisfaction section on page 47 many scholars used these three core theories upon which most of the studies are predicated. For example, several researchers such as (Sulaiman & Yahaya, 1987; Bruin & Cook, 1997; Lu, 1999; Potter& Cantarero, 2006; Salleh, 2008; Mohit et al., 2010; Mohit & Nazyddah, 2011; Makinde, 2015; Mohit & Mahfoud, 2015; Jiang et al., 2017; Riazi & Emami, 2018; Li et al., 2019; Sanderson, 2019) have studies residential satisfaction mainly based on the three main theories of "*housing needs*" (Rossi, 1955), "*housing deficit*" (Morris & Winter, 1975, 1978), and "*psychological construct*" (Galster, 1985). Also, specially, in the study by Mohit and Raja (2014; p. 51) and Mohit and Mahfoud, (2015; p. 287) stated that these three core theories that formed the basis on which most of the studies used to evaluating the determinants of residential satisfaction are based.

Table 5 in the following page shows the summary of main elements of these three theories which applied in residential satisfaction, and it adapted from the study by

Mohit and Raja (2014, p.52). As shows in the Table 5, Rossi (1955) explained residential satisfaction based on housing needs theory. In this theory, the level of satisfaction is dependent on the life cycle stages of residents and increasing discrepancy between residents need and desire corresponds with encouraging residents for relocation. Likewise, Morris and Winter (1978) explained residential satisfaction based on housing deficit theory. In this theory, the level of satisfaction depends on the family norms and compatibility between real housing and standards (local housing need, culture, ethnic factors).

Researchers mentioned that using housing need theory and housing deficit theory are useful in explaining satisfaction with residential satisfaction and mobility behavior (Husna and Nurijan, 1987; Bruin and Cook, 1997).

Moreover, Galster (1985) explained residential satisfaction based on psychology construct theory. In this theory, the level of satisfaction depends on the individual references, which construct based on individual needs and aspiration of residents. Also, he further proffered a new social indicator for the assessment of preference in housing called "*marginal residential improvement priority*" related to psychological construct theory. This approach explains regardless of which dimension of dissatisfaction with residential environment that occurs, for the improvement of satisfaction level, individuals offer first priority to the quality of dwelling.

The author proposed the "*marginal residential improvement priority*" concept, as an alternative to evaluating determinants of residential satisfaction studies. Furthermore, it means that "*marginal residential improvement priority*" is appropriate approach to

find the perception and expectations of residents related to their first priority and important determinants of residential satisfaction. Also, in this approach, the researcher makes selection of a set of factors, and then enjoins the inhabitants to place them in ranks, on the basis of what they want to be improved, with reliance on their perceptions, expectations and experiences.

Table 5. Summary of Residential Satisfaction Theories with Their Major Elements

References	Name of the Theory	Main Elements
Rossi (1955)	Housing needs theory	a) Life cycle stages face to lack of fit. b) Do not meet the needs of residents c) Needs depends on the demand/desire. d) Lack of fit between current and desire result in stress/dissatisfaction then motivate residents to behave in relocation. e) Residential mobility.
Morris & Winter (1978)	Housing deficit theory	a) Family judgment through facing some norms (housing, culture). b) Compatibility between real housing and standards (local housing need, culture, ethnic factors). c) Residential mobility.
Galster (1985)	Psychology construct theory	a) Individuals cognitively construct a "reference" between needs and aspiration. b) "References" depend on individual needs and aspiration. c) Difference between actual and desire in housing situation. d) Marginal improvement priority.

Source: Adapted from Mohit and Raja (2014)

2.2.4 Residential Satisfaction Conceptual Models

After reviewing the literature review and main theories, it is essential to reviewing the vital conceptual models related to residential satisfaction. Because, several researchers

have made proposals of models for integrating the variety of variables under study in relation to residential satisfaction, for guiding research and for constructing theory. Also, Aigbavboa (2014) stated that most of studies of satisfaction with residential have been based on one of the conceptual models as explain in below.

Accordingly, this section will review the previous and most common conceptual models of residential satisfaction which explained and used in many studies such as (e.g. Amole, 2009; Aigbavboa, 2014; Aigbavboa and Thwala, 2018; Riazi and Emami, 2018; Xi, 2018).

Onibokun 'Habitability' Model (1974):

Onibokun (1974) made a postulation of a model of habitability, expressing that the assessment of habitability means carrying out evaluation of a tenant's satisfaction, while residing in public housing project in specific areas. Rather than the old approaches which consider the features of the neighborhood or dwelling, or the social environment in fragmented ways, the author advances a systems approach, in which various factors which are interdependent are evaluated in relation to one another.

Figure 3 illustrates the determinants of habitability. As shown, the "Habitability Model" emphasized that the systems of housing habitability usually involve four subsystems which interact, including the dwelling subsystem, subsystem of the tenant; the management subsystem; and the environment subsystem; that can impact residential satisfaction of residents.

Hence, Onibokun (1974) selected attributes of habitation from the dwelling subsystem (e.g., layout of the design, locations of rooms, quality of the walls and floors, type of the house), environment subsystem (e.g., distance to recreation, public transportation facilities), and management subsystem (e.g., rules). In the Habitability model, Onibokun (1974) considered the adequacy of a housing unit considered to be an important subsystem of a system of housing habitability, determined by the quality of structure, the household facilities, internal space and other housing qualities and amenities within the house, which will impact the degree to which the inhabitant feels satisfied with the unit (Onibokun, 1973a).

It was argued that by itself, the unit of housing, is not a lone variable or determinant of the satisfaction of housing need. According to the model, the unit subsystem only constitutes a part of the whole system, and makes up housing habitability. Mustapha et al (1995) stated that the model particularly singled out inhabitant, as those who were recipient of all subsystems' feedbacks, and therefore serves as the central focus of the conceptual habitability model, on which housing habitability research studies should be conducted and based on, as portrayed in Figure 3. However, this concept stays constrained due to the complex and real situation of housing satisfaction.

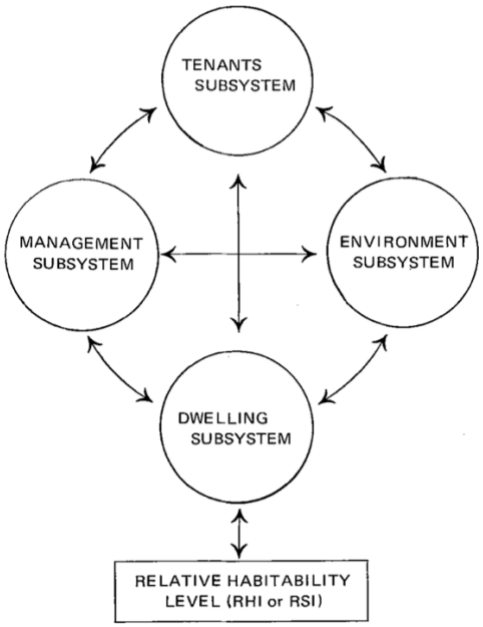


Figure 3. Habitability Model
Source: Onibokun (1974; p.190)
RHI = Relative Habitability Index (of dwelling)
RSI = Relative Satisfaction Index (of tenants)

Marans and Rodgers Model (1975):

Marans and Rodger (1975) developed another conceptual model of residential satisfaction. They developed the conceptual model of residential satisfaction by inclusion of new factors of neighborhood and community that will have an impact on residential satisfaction. As demonstrated in Figure 4, the model by Marans and Rodgers (1975) conducted measurement of satisfaction with the community, the micro-neighborhood, the macro-neighborhood, and the scale view of the dwelling, and it discovered that satisfaction with community shares more correlations with social factors, while satisfaction with neighborhood, bears more relations to physical factors.

This model made conceptualizations that the satisfaction of an individual with housing, is reliant on their perception of the different determinants of dwelling and the micro and micro neighborhood, alongside the resident's assessment. The attributes of the

neighborhood include numerous aspects of the community service quality and the physical environment. The general level of satisfaction is conceptualized by the Marans and Rodgers model as related to the person's own features, like the status of housing, social class and among others. Marans and Rodgers (1975) refer also to a comparison standard when executing assessment of the residential environment, with issues of aspiration and expectation levels, degree of equity, reference values, needs and group, implied. Moreover, they considered residential satisfaction as a variable criterion of life quality.

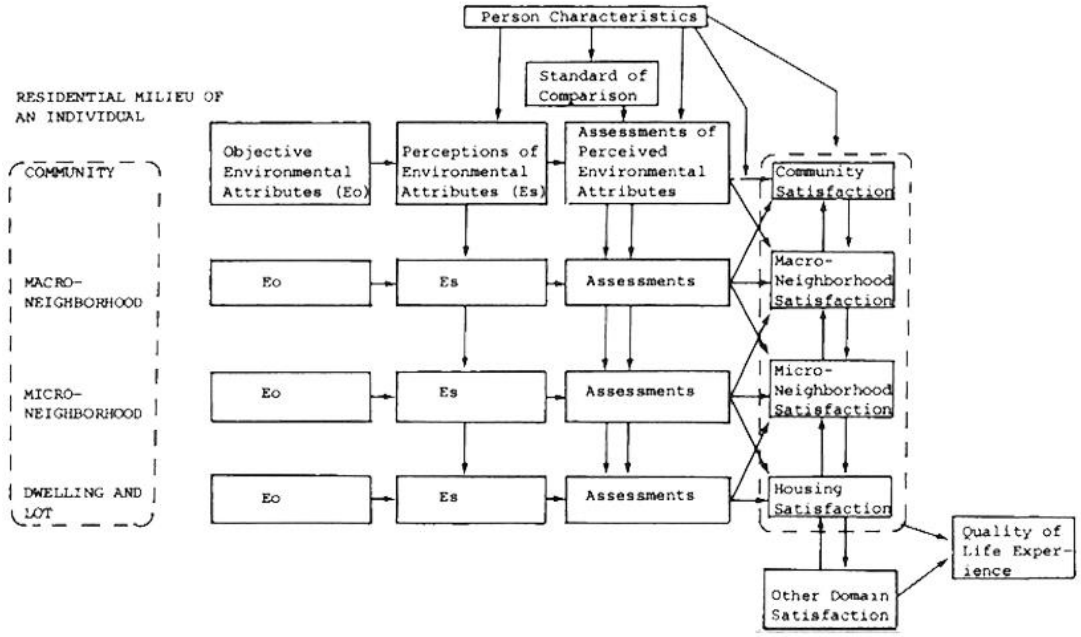


Figure 4. Model of Environmental Satisfaction
Source: Marans and Rodgers (1975; p. 306)

Marans and Spreckelmeyer Model (1981):

Marans and Spreckelmeyer (1981) proffered a conceptual model for utilization in the grasping of any relationships between the objective conditions (physical environment), subjective experiences (attitude and perceptions of the residents) and residents' satisfaction. Additionally, this model has been employed in conjunction with academic

studies on institutional settings and recreational environments. Francescato et al. (1974, 1979) suggested that satisfaction is a function of various categories of variables: the resident's objective features (e.g., sex, age, and previous experience with housing), the housing environment's objective features, and the beliefs or perceptions of the occupants, concerning three parts of their housing environment (e.g., the housing management, physical environment, and the other residents).

As shown in Figure 5, a linear relationship between attributes which are objective, pertaining to the residents' satisfaction and physical environment, is assumed. The model asserts that satisfaction is a function of the physical environment via the beliefs and perception of one about the physical environment. This framework recognizes in explicit terms, the physical environment via indications that the particular environment's objective attributes bear influence upon the satisfaction of a person, via the assessments and perceptions of those attributes of the environment. As suggested by Marans and Spreckelmeyer (1981), residential satisfaction is an outcome of an integrated relationship between the belief perceptions of the human and the environment. In addition, this model recognizes behavior, which suggesting that a person's behavior is directly impacted by assessments and perceptions, satisfaction, of the attributes of the objective environmental, and the environment's objective attributes itself.

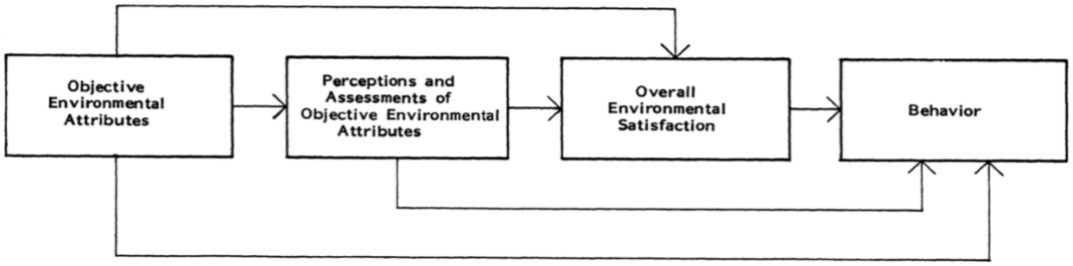


Figure 5. Basic Conceptual Model of Resident Satisfaction
Source: Marans and Spreckelmeyer, (1981; p. 122)

Weidemann and Anderson Model (1985):

Weidemann and Anderson (1985) developed a framework of concepts, while seeking more advanced comprehension of residential housing satisfaction, for satisfaction with housing via drawing on other models and theories. They extended the conceptual model of Marans and Spreckelmeyer (1981) for comprehending resident housing satisfaction by including behavioral intentions, social components and behavior of the environment of residence. Generally, a more exhaustive model was developed by them, on the basis of the relations between people's emotional responses and their behavior; their objective is to compensate for the inadequacy of sufficient evidence on the direct relations behavior and emotional responses. They illuminated the essence of considering how residents' satisfaction is influenced by the assessments of both the physical and social parts of the environment of residence.

The model was made on the basis of the concept propounded in the general Theory of Reasoned Action (Fishbein and Ajzen, 1975). It recognizes explicitly, the social and physical environment's causative role via the indication of these as categories of 'objective attributes' of the specific environment. Objective attributes of the environment have impacts on the satisfaction of a person, through their beliefs and perceptions about those attributes of the environment. Additionally, this model offers

recognition of the fact that the affective attitude of a person towards the environment influences such person's intentions to act with respectful behavior towards the environment. Consequently, the occupant's intention to behave has an impact upon behavior that are environmentally related (Weidemann and Anderson, 1985).

An interpretation of satisfaction in terms which are purely affective, is proposed by the model, hence informing that satisfaction is the positive or negative feeling that occupants have towards their place of residence, and the subjective response to the dwelling. This means that it is a universal representation of people's affective response to the social-physical environment where they are residents. Compared with the previous model in which they directly indicate causal linkages between varieties of components, the proposed model avails suggestions that these relationships may indeed be more reciprocal and complex. Thus, the Figure 6 shows a conceptual model with lines and not arrows, linking the respective variant components. This leans towards an indication that the relationships can be multidirectional in theory.

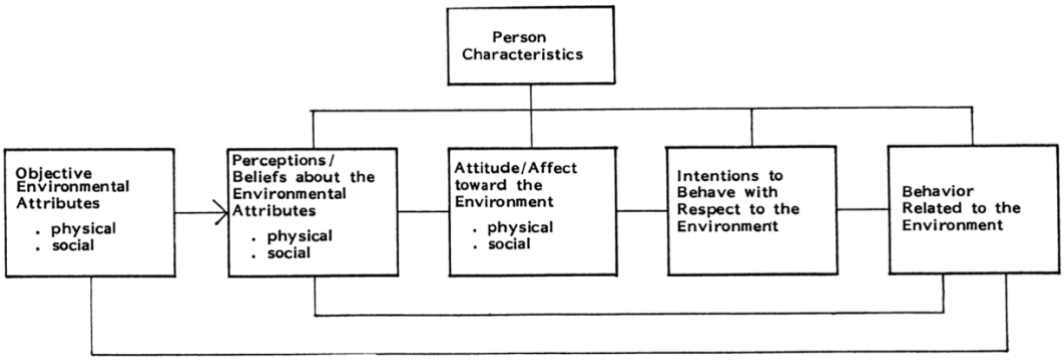


Figure 6. Integrated Conceptual Model
Source: (Weidemann and Anderson, 1985; p. 160

Francescato et al. Model (1989):

Francescato et al. (1989) based on attitude model (Fishbein and Ajzen, 1975) theorized that residential satisfaction can be considered through a combination of predictor variables of cognitive, affective, and conative. Figure 6 illustrates the suggested model. Francescato et al. (1989) stated that cognitive aspect can be explained by beliefs and perceptions about the community's physical environment, the complex of housing, and the dwelling; about the proper behavioral norms among and of one's neighbors, and about policies, practices and rules of management. These beliefs seem to be impacted highly by comparisons with past expectations and experiences and about the future. In other words, based on the reviewing of Ajzen and Fishbein (1980; p.19) mention that, already, attitudes were deemed to be complex systems making up the beliefs of persons about the object, the person's feelings towards said object, and the tendencies of the person's action with regards to this object, according to most psychologists. That is, systems consisting of affects, cognitions, and conations.

In addition, they argued that affective aspect is the feelings or emotions about symbolic values ascribed to one's memories and home, which are evoked by comparisons with the home of the present; aesthetic feelings, sense of protection; and connotations elicited by social and physical features of the present habitat. Lastly, they discussed that conative aspect is behavioral intentions may be inclusive of the desire for moving or staying, willingness and interests in participating in the organizations and activities of tenants, the wish to modify and personalize one's dwelling, the propensity to take an active role in security, maintenance, and safety, or in activities deemed negative, such as vandalism, and the inclinations to oversee the activities of one's teenagers and children. In addition, Francescato et al. (1989) assumed the objective environmental

variables, demographic variables, and person characteristics as external variables. These variables should include in the models and are considered as external variables due to have some relations to the criterion however do not improve prediction accuracy. Figure 7 shows the suggested conceptual framework of their study.

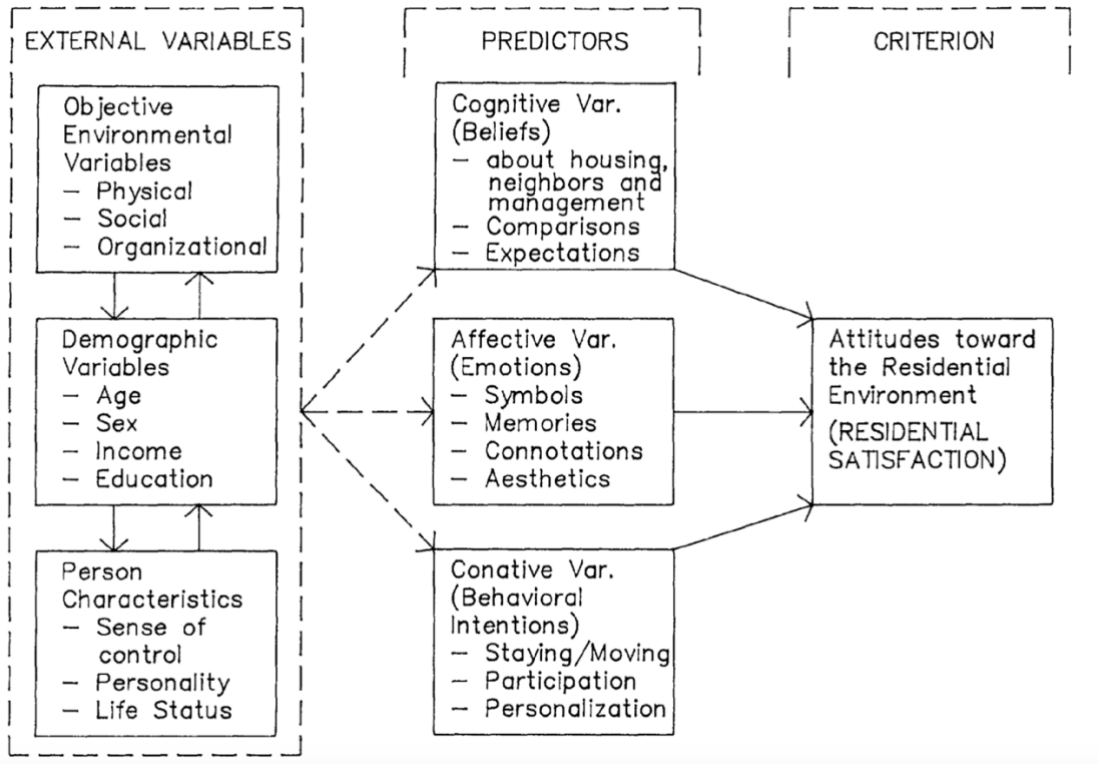


Figure 7. Attitude-behavior Model
Source: Francescato et al. (1989; p.190)

Amerigo and Aragones Model (1997):

Amerigo and Aragones (1997) presented both a methodological and theoretical approach to studying satisfaction with residence, and seek to offer a concluding view of the relationships set up between a residential environment of a person and that person. Their conceptual framework based on the research of Amerigo (1990, 1992*a*) which have done in council housing in Madrid, Spain. Contribution to Amerigo and Aragones (1997) suggested the conceptual framework of residential satisfaction

considering the dynamic interaction between the residential environment of an individual and such individual, and analyzing the varying cognitive, behavioral and affective processes, which occur in such interaction.

They explained the Perceived Environmental Quality Index (PEQI) concept, which is described by Craik and Zube (1976) as an operation that is cognitive–perceptual, relative to particular environmental elements, that are outstanding; applied to the environment of residential dwelling. In order to empirically obtain the PRQI, the working model by Canter and Rees (1982), about the essential components of the residential environment, was used. These are: the house, neighbors and the neighborhood. In relation to the house, there is an overarching dimension in reference to the basic infrastructure or quality, and a more particular dimension, that refers to overcrowding. On neighborhood or surrounding area, the perceived residential safety is an important dimension. Lastly, the relationships with neighbors form the fourth dimension, to be evaluated in the environment residence's internal representation, in this type of subject.

From the affective aspects noted, they were all categorized around two dimensions: the physical vs social, dependent on whether the attribute is accorded to such dimensions of the environment, and the objective vs subjective dimension, dependent on whether the predictor stems from the evaluation of the subject or if it is objective. Furthermore, Amerigo and Aragones (1990) and Aragones et al. (1992), has exhibited that psycho-social parts like the relations with neighbors and the level of attachment, to the environment's residence are greater predictors than those that are relative to

physical characteristics, like the housing infrastructure and equipment, and the neighborhood.

From behavioral aspect they hypothesize that, if a person has an attitude which is favorable towards his/her environment of residence, and feels a satisfaction with it, his/her behavior will show consistency with this attitude in areas like: the neighborhood and house's maintenance, good neighborly relations and participation in activities in the neighborhood, etc.

As shown in Figure 8, the attributes of the environment which are objective, become subjective once they have undergone evaluation by the person resulting to a specific satisfaction level. Attributes which are subjective are impacted by the socio-demographic and personal features, as well as the pattern of residential quality of the subject – a normative element wherein the ideal and real residential environment of the individual is compared. The outcome of this evaluation (e.g., residential satisfaction) shows a state of positive affect, which the person experiences towards their residential environment, that will also make him/her behave in specific manners with the intentions to increase or at least maintain consistency with such environment.

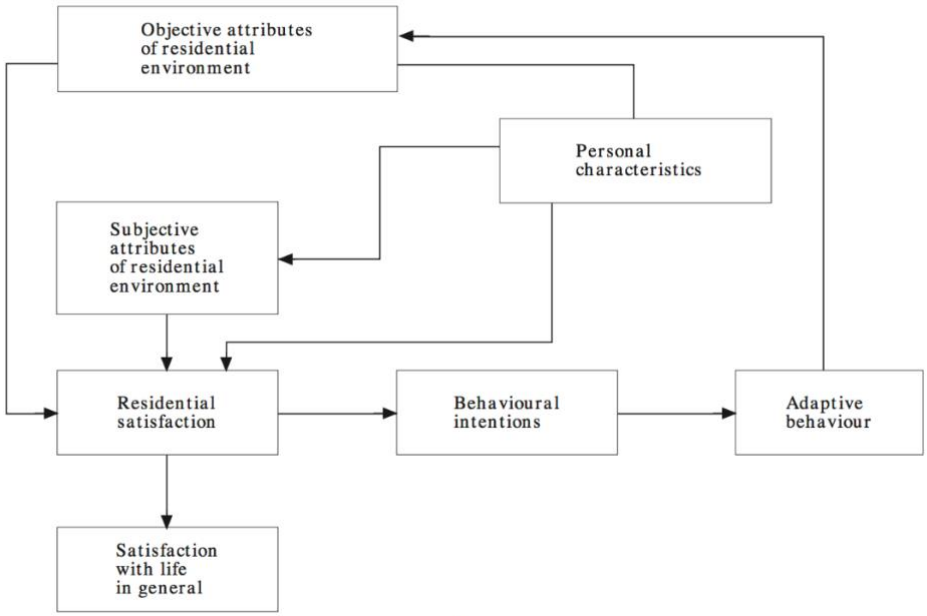


Figure 8. Systemic Model of Residential Satisfaction
Source: Amerigo and Aragones (1997; p.48)

Table 6 shows the summary of suggested conceptual models and important factors. As seen, majority of studies confirmed that the dwelling units and residential environment are the fundamental elements of residential satisfaction. Particularly, a number of studies such as Weidemann and Anderson (1985) and Francescato et al. (1989) suggested that residential environment should be considered from both physical and social dimensions in determining the level of residential satisfaction. Besides, the work of Onibokun (1974) argued that management is important factor of residential satisfaction. Moreover, in influential study, Marans and Rodgers (1975) proposed that the community (e.g., social factors) and macro and micro neighborhood (e.g., physical factors), in addition to dwelling, have important role in determining the level of residential satisfaction from scale view.

Table 6. Summary of Conceptual Residential Satisfaction Models

Suggested models	Suggested important factors
Onibokun (1974)	Dwelling subsystem: • type of house • rooms (layout, location, color, size, main furniture, space for children / other family, equipment), • windows / doors, stairs, • quality (walls, floor), • natural light, • exterior noise transmission, • electric lighting, heating system, water supply, • Privacy, Environment subsystem: • neighborhood, (type of people living in, physical condition and appearance, neighborhood's feeling, tenant's relation), • distance to (work, friends), • common space (amount of usable), • schools and shopping facilities (location and quality), • nearby recreational facilities, • parking facilities (adequacy), • public transportation (adequacy), • public services (adequacy), • privacy, • opinion of people (in the city and at the job), • noise, air pollution, the reputation of the area, Management subsystem: • the way of (management responds to repairs, housing authority treat you, caretaker deals with the dwelling), • garbage collection system, (facilities provided to keep the garbage until it is collected, cleanliness and sanitation) • rules, • privacy (housing authorities, the caretaker) • tenants have the freedom to arrange their apartments, • the project's supervision is satisfactory, • complaints are handled by the housing authority, • easy to get in touch with the management, • rent (paid now, compared with co-tenants pay, compared with privately owned houses), Tenants subsystem: • habitability in housing unit

Marans and Rodgers (1975)	Community More social factors Neighborhood Several physical factors Macro neighborhood Micro neighborhood Dwelling
Marans and Spreckelmeyer (1981)	Relationship between Physical environment Subjective experience Residential satisfaction
Weidemann and Anderson (1985)	Physical environment Social environment Cognitive (perception/ belief) Affective (emotional/ feeling) Behavior (behavior intentions/behavior)
Francescato et al. (1989)	Physical environment and social environment. Cognitive aspect (beliefs and perceptions about the physical environment of the community, the housing complex, the dwelling, management policies, rules, and practices.) Comparisons with past experiences and expectations. Affective aspect (emotions or feelings about values which are symbolic, which are attached to one's home, the memories which are evoked by comparisons made with the current home, sense of protection, aesthetic feelings, hopes, expectations, and aspirations, connotations elicited by physical and social characteristics). Conative/ Behavioral intentions aspect (desire for staying/moving, participate in tenant organizations and activities, personalize and modify one's dwelling, maintenance, security, and safety).
Amerigo and Aragones (1997)	Residential environment Cognitive aspect House (quality of basic infrastructure, overcrowding) Neighborhood (residential safety) Neighbors (relationship) Affective aspect Objective and subjective attributes

	Physical vs. social dimension Behavioral aspect (maintenance of the house/neighborhood, good neighborly relations, participation in the activities in the neighborhood, etc.)

As explained in above parts, several authors have made proposals of models for integrating the variety of studied variables in relation to residential satisfaction, for guiding studies. Also, according to Aigbavboa (2014) stated that most of the research/studies of satisfaction with residential have been made on the basis of one of the conceptual models as discussed above. Also, based on the aim of this study is evaluating determinants of residential satisfaction, upon perception, expectation and experience, of residents, its essential to review the determinants of residential satisfaction from previous studies specially from sustainability concept.

2.3 Determinants of Residential Satisfaction from Sustainability Concept

Before discussing residential satisfaction towards sustainability concept, it is a necessity to briefly consider the definition and aspects of sustainability. Although the definition of sustainability is made very differently, it can generally be defined as follows.

The Brundtland Report (WCED, 1987) concerns by defining sustainable development as a development with the capability of attaining satisfaction needs of present generations, without any compromises made to its ability to satisfy that of future generations. The reference of the commission to the needs of humans is indicative of the notion that development should also recognize and improve the collective

wellbeing and the human individual, and not only be respectful and harmonious toward the environment (including other living species). According to Moser (2009), sustainability implies that people are availed with living conditions that are satisfactory, so that they can positively identify with their own environment. Sustainability is the elaborated overall as a development which satisfies the current generation's needs, without compromising the future generation (Golubchikov and Badyina, 2012; Lin et al., 2015). Also, the WCED report puts the human needs at the center of any development goals, but human is well beyond being equated to only their needs, which are actually not only psychological. They can be emotional, psychological, spiritual, etc.

Sustainability involves further measures which are multi-dimensional in the long-term impact of issues on life quality. As the debate on sustainable development unfolded, it was argued that 'social', 'environmental', 'cultural' and 'economic' sustainability should also be recognized, as they are equally main developmental dimensions (Chiu, 2004). The four strands of sustainability, are linked as a matter of fact, and should not be in isolation; one pursuit of each, affects the others (Goodland and Daly, 1996; Mitlin and Satterthwaite, 1996; Hart and Milstein, 1999; Chiu, 2003). Also, meeting current needs refer to the aspects of development of sustainability, which is inclusive of social, economic, environmental and, cultural issues.

Social Sustainability

The social dimension of sustainability focuses on the maintenance and improvement of the human living standards and the well-being of persons within this era and of future generations (Pugh, 1996; Townroe, 1996; Borrini-Feyerabend and Buchan,

1997). It seeks the satisfaction of the basic human needs such as equality, health care, safety, recreational opportunities, happiness, social stability and cohesion, social relations, provision of social infrastructure, amenities and improvement in life quality.

Also, in this line, according to Chiu (2004) meet aspirations and needs of the human race. However, the Earth's sustainability is not the only issue of concern. We ought to simultaneously make our society more harmonious, fairly equitable, and able to provide a better life quality for people. Based on the conducted work by Chiu (2003), the argument that housing's social sustainability, should be focused on both the environment and the people rather than on only one of them, is made.

In other words, social sustainability denotes the satisfaction of the basic needs of humans and their continuation of well-being (Littig and Griessler, 2005), the maintenance and improvement of present and future well-being, and the improvement of life quality via the reduction of social inequality (Chan and Lee 2008).

Environmental Sustainability

The dimension of sustainability pertaining to the environment seeks to ensure the integrality and preservation of the ecosystem, in addition to its continued productivity. Environmental sustainability to sustain the environmental quality and preserve natural resource (Herremans, 2002). An environment which is sustainable also denotes the maintenance of reasonable biological diversity, health levels, and water, air, and soil quality to ensure the wellbeing and development of the inhabitants, and the preservation of the flora and fauna (Pol, 2002).

Housing can be a load to the environment when considering its emission as well as the demand in material and resources for its life cycle (Sharma et al., 2010). Housing should be well located in order to efficiency use available resources; its site should lead to maximum low energy consumption, enhance water efficiency, allow a proper management of waste, and provide an indoor environment that is healthy and comfortable. Though neglected at time, access to green space has many beneficial attributes to well-being of people (Dempsey et al., 2012; Fuhry and Wells, 2013).

Economic Sustainability

Economic sustainability pertains to production systems that satisfy consumption levels of the present without any compromise of the needs of future generations, in light of the environmental costs, constraints, and income (Basiago, 1998; Napoli, 2015).

The rent or mortgage should not exceed a certain percentage of household income. The housing governance should be adequate in order to promote economic growth, but also should be sufficient. The resources should be use efficiently. Studies have showed that evaluations of the schemes of housing as social programs have been conducted on the basis of their effectiveness in the provision of satisfactory, adequate, and affordable housing, which offers enhancement to the residents' economic status (Kaitilla, 1993).

Cultural Sustainability

Culture gives identity to a place over varying periods of time (Schusky and Culbert, 1973; Darlow, 1996; Raberg, 1997). An important cultural attribute specifically related to the perspective of sustainable development states that culture has to do with the means through which man undergoes adaptation to his environment, and acquires the

necessities for his survival (Schusky and Culbert, 1973; p.45). Hardoy et al. (1993) interpretations of cultural sustainability that refers to the contribution of attitudes, perceptions, and values which are shared, and has to do with the culture's sustainability in itself, to achieving sustainable development. Thaman (2002) asserts that development must be rooted in the culture of people, for it to be sustainable; and indeed, culture serves as the foundation of sustainable development.

Overview of Studies between Residential Satisfaction and Sustainability

Diogun (1989) emphasized that for achieving sustainable housing, it is a necessity to properly define the participation and needs of end users in order to ensure their satisfaction.

Pol (2002) and Moser (2009) argued that environmental sustainability can be attained by congruity between residents and environment by achieving sufficient environmental quality, goals and expectations of residents. Also, environmental policy ought to focus on the consistency between the people and environment, via the consideration of both psychological and physical indicators of the wellbeing of the human.

The works of Marans (2003) and Rizk (2003) argued that residents feel less satisfied in an environment having the lack of environmental quality through noise in the environment., pollution of the neighborhood, insufficient facilities and services in the neighborhood, problems of security, and the lack of satisfactory transport.

Cho and Lee (2011) demonstrated that a living program which connect to social and physical settings which will increase the satisfaction of residents, and resulted in developing of sustainable community. Karuppannan and Sivam (2011) suggested that achieving neighborhood satisfaction from design parameter such as (e.g., open space, social infrastructure, safety) can increase the level of social sustainability.

Teck-Hong (2012) mentioned the necessity of meeting households' needs and wants or housing satisfaction to achieve sustainability in the housing industry. Salleh (2012) argued evaluating residential satisfaction from physical, social and economic aspects of the neighborhood environment is assisting for achieving sustainable neighborhood development.

Makinde (2015) discussed the effective role of socio-cultural variables on residents' satisfaction, which in turn, help to enhance sustainable development. The findings revealed that the environmental elements of residential satisfaction, fairly satisfied the residents, as well as the behavioral, physical and economic elements. They were dissatisfied with the timing and functional elements which make up the maintenance criteria and quality of performance of their buildings.

Abass and Tucker (2017) examined the effect of social and physical neighborhood design variables on neighborhood satisfaction. Their findings showed that physical variables (e.g., provision of open spaces) impact neighborhood satisfaction significantly. Their results implied that identifying the satisfaction associated with the needs of inhabitants that are social and physical, is essential for planners and decision

makers to enhance sustainable communities and sustainable living in contemporary contexts.

Similarly, Du et al. (2017) suggested the consideration of features and qualities environments of residential dwellings relate to the residential and life satisfaction of inhabitants, for the improvement of sustainability. Furthermore, Onifade et al. (2018) argued that satisfying of residents from elements of housing satisfaction and meeting their needs can result to achieve sustainable housing satisfaction.

In summary, the prior studies argued that higher satisfaction of residents can lead to achieve sustainability. Thus, an increased satisfaction level of residents corresponds with sustainability. Also, their findings suggested that satisfaction within social, environment, economic, and cultural aspect of residential satisfaction increase the level of residential satisfaction and resulting to achieve sustainability subsequently. Figure 9 presents the summary of previous studies.

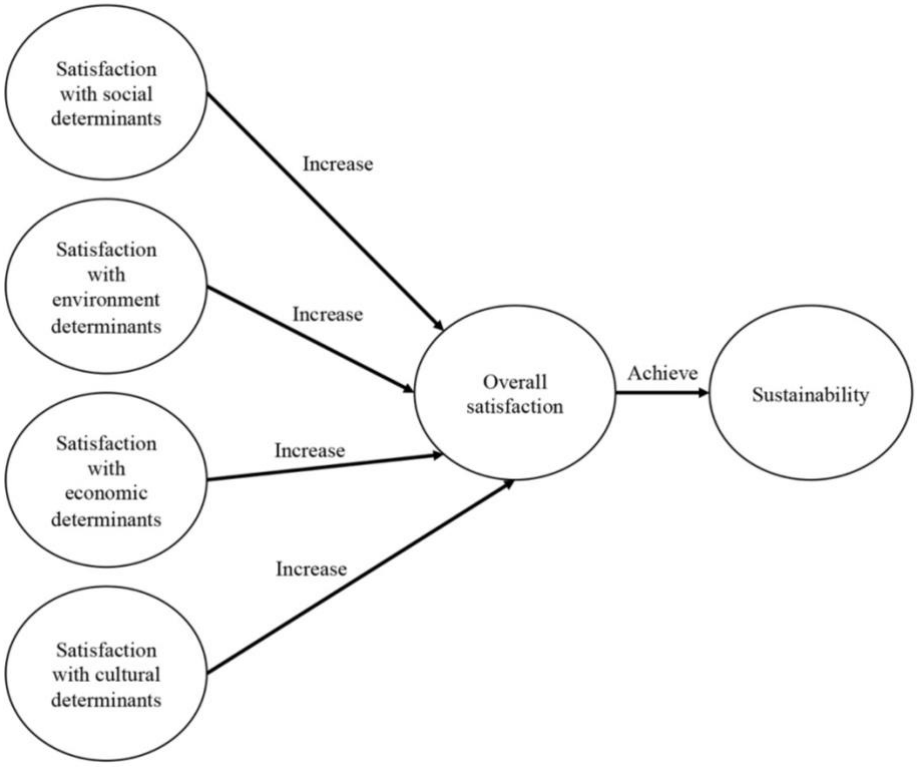


Figure 9. Summary of Previous Studies Between Residential Satisfaction and Sustainability
Source: From Literature Review

Over the last three decades, several studies have identified several vital determinants of residential satisfaction. In the following section explains the main determinants of residential satisfaction are classified from social, economic, environment, and culture dimensions. Some studies argued that residential satisfaction should be evaluated from single or multi-dimensions.

For instance, Mesch and Manor (1988) argued that residential satisfaction should be evaluated by considering a social and economic multi-dimension. Also, Jiboye (2014) stated that housing is reflective of a society's social, cultural, and economic values, as it is the best historical and physical evidence of civilization within a country. The works (Sirgy and Cornwell, 2002; Salleh 2012; Kahreman, 2013) discussed that environment, social and economy dimensions impact residential satisfaction. Erinsel

Önder et al. (2010) considered the environment, social and cultural dimensions for assessing residential satisfactions.

2.3.1 Social Dimension of Residential Satisfaction

Several research studies have been carried out on the issue of the social dimension of residential satisfaction, which is inclusive of community satisfaction aspects. Housing is professed to be one of the basic social need of humans and its standard largely impacts the welfare standard of the society as a whole. Goudy (1977) was one of the pioneer researchers that considered the essence of social factors in the determinacy of residential satisfaction.

Muoghalu (1984) assured that social indicators in housing ought to incorporate with the demands and needs of the inhabitants, relative to their life styles. For example, it was noted that social and environmental living situations might strongly influence housing satisfaction (Potter and Cantarero, 2006; Erdogan et al., 2007). Mohit et al. (2010) showed that social environment impact on residential satisfaction. Also, Jiang et al. (2018) stated that usually, a set of functional and morphological features, may include social composition.

Vera-Toscano and Ateca-Amestoy (2008) stated that from a social perspective, housing is more than a unit of abode and its features, since it additionally provides privacy, security, health services, social and neighborhood relations, community, status, access to jobs and opportunities, and community facilities and services, around the housing (Ibem et al., 2009) However, Aiello et al. (2010) discovered that social relations did not emanate as a vital predictor of satisfaction with residential dwellings in their study. This diverse findings on the essence of the effect of social relations on

the satisfaction of residents, is attributed to the norms and values of the society, and the features of residents.

Many authors found out more factors which more or less affected the residential satisfaction in the context of the different residential environmental situations. Some researchers have conducted evaluation of the role of proximity of places of work and worship, to the house, the accessibility to urban infrastructure and services, and the management of the environment of the housing on housing satisfaction. Location of the house from the place of work, that are in consistency with attributes employed in the existing literature on housing satisfaction (Mustapha et al., 1995; Mohit et al., 2010; Ibem and Amol, 2013; kahraman, 2013). In another study by Clement and Kayode (2012) highlighted that there was a heightened satisfaction rate with the proximity to centers of worship and areas of recreation among the residents.

For example, in the studies by (Berkoz et al., 2009; Mohit et al., 2010; Ibem and Aduwu, 2013) underlined that satisfaction with provision of recreational area/ sport facilities, social facilities, property of safety and accessibility to various public function in the housing area can affects residential satisfaction. Tech-Hong (2012) recommended that housing developers should be provide and integrating social infrastructure in the neighborhood. Similarly, Ibem and Aduwu (2013) suggested that satisfaction with residential and the life quality of residents can indeed be enhanced through providing basic social infrastructure and facilities/amenities in housing schemes. Moreover, Sun et al. (2018) investigated the impact of accessibility to social infrastructure configurations around the residential communities.

Earlier studies have denoted the vital essence of management in the prediction of residential satisfaction (Weidemann et al., 1982). Services (rule enforcements, and complaint handling) provided by the housing management have additionally been predictors of housing satisfaction (Burby and Rohe, 1990). Francescato et al. (1989) stated that management policies, rules, and practices in addition to physical environment and housing complex can strongly impact satisfaction. Moreover, Paris and Kangari (2005) mentioned the attributes of management often examined are maintenance, rules and regulations, participation and rents, management staff and policies. Erdogan et al. (2007) showed local authorities such as policymakers in housing and urban planners influence housing satisfaction. The authors argued that local authorities and municipalities through implementing effective regulations and strategies can practically improve the conditions that influence satisfaction of local residents. Elsewhere, Mohit et al. (2010) suggested that local authorities have large roles in the improvement of the satisfaction with residential, when they implement and determine managerial policies which are suitable.

Jorgensen et al. (2007) evaluated social effects in the housing to reveal the perceptions of residents of the aesthetic of urban landscape and safety components and its contribution to residential satisfaction. Jun and Jeong (2018) showed that how a social mix is associated with satisfaction with residential among residents and found that it is positively related. Socially-mixes can raise the attractiveness of urban areas via the redevelopment of neighborhoods formerly distressed, thereby enforcing households which have higher-income, to reside in those neighborhoods (Musterd and Andersson, 2005; Joseph et al., 2007). Mixed environmental habitations have slowly proven to be

effective in planning for the promotion of social integration in many countries (Chu et al., 2019).

Parkes et al. (2002) supported the contribution in housing satisfaction made in form of the addendum of the presence of a good social network. In a study by Kan (2007) considered residential satisfaction from social network or ties. Moreover, the author stated that social ties nearby neighbors may inhibit instability in the neighborhood and promote neighborhood cohesion via the encouragement of households, to remain as they can obtain emotional and financial supports from the neighborhood's social networks.

Addo (2016) examined the residential satisfaction of multi-habited households, with an overarching approach where the dwelling unit's features, its neighborhood facilities and the social networks are all considered in the assessment of household satisfaction. The research discovered that the features of dwelling have a negative impact on the respondents' residential satisfaction. Moreover, the resultant outcomes suggest that in indigenous communities, households there were better satisfied with the social networks which were in existence, compared to those within the migrant communities. The finding supports Addo's (2013) earlier research, where the establishment was made that households residing in dwellings which are multi-habited, had great dependence on the informal social networks which were existing.

According to Mesh and Manor (1998) stated that local social interaction is instrumental in the development of emotional towards a place. Ali et al. (2015) explored the impact of social relations and participation on the satisfaction of residents

in residential buildings that were multi-story, and emphasized the strength of social relationships as predictors of the satisfaction of residents, among other elements. Some studies explore and express the different drivers of environmental and social conditions of living in urban/modern and rural/traditional areas. It was set up that perceptions surrounding housing satisfaction differ between urban/modern and traditional/rural areas (Galster and Hesser, 1981).

Several studies have expressed that social interaction also influenced the satisfaction of the social life in neighborhoods, and not only the improvement of overall satisfaction with housing, within the neighborhood (Salleh, 2008; Mohit et al., 2010; Zanuzdana et al., 2013). For instance, social homogeneity (Kellekci and Berköz, 2006), improved community spaces (Cho and Lee, 2011), community support (Addo, 2016), existence of relatives within the neighborhood (Kasarda and Janowitz, 1974), good social network (Parkes et al., 2002) such as sharing food, social support, baby-sitting, and sharing experience and materials (Caldieron, 2011), membership to a local social attachments and class (Hourihan, 1984) increase the levels of residential satisfaction.

Furthermore, social attributes constitute relationship with security and safety, privacy, freedom of choice, social relations, social densities and personalization (Francescato et al., 1979; Rent and Rent, 1978). For example, studies have made suggestions that a building, which upholds privacy, could be considered as an attribute which affects satisfaction (Ukoha and Beamish, 1997; Baiden et al., 2011). The type of house which makes provisions for privacy might be evaluated as a characteristic that has a resultant satisfaction (Kaitilla, 1993). Ukoha and Beamish (1997) found that residents derived

the optimum satisfaction when they lived in self-contained houses due to the features such as toilet, playing yard for kids, room privacy.

Similarly, Baiden et al. (2011) assessed privacy in the dwelling as one of the determinants of residential satisfaction and found that those residents with lack of privacy reported being dissatisfied. Moreover, Ibem and Aduwu (2013) suggested that the developers of housing developers ought to continue the improvement of the dwelling units' quality that are produced by ensuring that houses are not only designed, but are constructed to ensure the provision of adequate privacy and security for the occupants.

Qadir (1993) found that specifically the interior parts, utilities, infrastructure, and services, affected the daily adaptability and activities of residents, within the housing environment. Onibokun (1974) discusses the factor of internal and structural quality within the literature on housing satisfaction. Poor conditions of housing are generated by challenges posed by the shortcomings of internal facilities (Ozo, 1986). Dennis Lord and Rent (1987) stated that satisfaction is also linked with housing unit quality. Ukoha and Beamish (1997) proposed that quality of interior spaces may impact on overall housing satisfaction. Similarly, Ren and Folmer (2017) showed that housing quality determines a positive impact on residential satisfaction. Furthermore, their result is in line with existing academic literature (Dekker et al., 2011 included).

Many researchers mentioned that social factors can be include parts like community participation, belonging and the quality of community life (Amerigo and Aragones, 1997; Bruin and Cook, 1997; Potter and Cantarero, 2006; Braubach, 2007). The social

component was taken measure of by community services (i.e., utilization and knowledge of community services, and the willingness to enlist its services when required). Some researchers (Fried and Gleicher, 1972; Amerigo and Aragones, 1997) claim that social relationships are of greater essence to satisfaction of residential, than the physical environment.

2.3.2 Environment Dimension of Residential Satisfaction

Largely, housing as a concept does not rest in just the individual's dwelling. It is composed of the general social and physical components that encompass the system of housing (Francescato et al., 1987). Several studies in academic literature highlight that satisfaction with housing refers to more than a mere physical satisfaction from the residential dwelling (e.g., Duncan, 1971; Kasarda and Janow, 1974; Galster and Hesser, 1981; Lu, 1999; Burby and Rohe, 1990; Kamp et al., 2003; Parkes et al., 2002; Kelekci and Berköz, 2006; and Erdoğan et al., 2007). It consists of satisfaction from the setting of the environmental, the aspects of quality and aesthetics (e.g., Varaday, 1983; Cook; 1988; Burby and Rohe, 1990; Kamp et al., 2003).

The physical or environmental dimension of satisfaction with residences is composed of the building functionality, size, physical quality, location of housing layout, aesthetic aspects, and the housing environment. In addendum, the shared utilization of some external housing parts and amenities, could be considered to be a satisfaction factor (Sinai, 2001; Konadu-Agyemang, 2001).

The satisfaction level towards housing varies in accordance with the type of dwelling the household occupied. The building type can have impacts on the social and physical life quality of the residents. Also, the impact of house type on the satisfaction with

housing, is corroborated by other studies of research (Baillie 1990; Lu 1999; Ukoha and Beamish 1997; Baiden et al. 2011). For instance, Ukoha and Beamish (1997) who explored the impact of various types of housing on satisfaction with housing in Nigeria, not only included the provisions of modern housing types like a single room, apartment, and single-family house, but also the conventional and cultural ones like the bungalow and townhouse. In a study by Makinde (2015), different building types like the detached house, flats and terrace house, for instance, avail varying satisfaction level to their residents.

Some researchers showed the effect of density on residential satisfaction. For instance, Yi (1985) assessed housing density on residential satisfaction and discovered that the lower housing density (area per person) was, the more residentially satisfied the residents felt than those that possess higher density. Kearney (2006) conducted detailed studies of the effect of the housing development form on neighborhood satisfaction, through the perspectives of impacts of the surrounding environment and density. The author discovered that negative emotions or feelings towards high density did not occur as a result of the existence of developments that are high-density, but as a result of the existence of view obstructions and unattractive cityscape, due to high-density development. However, the author found that high-density developments require natural views so as to increase the satisfaction towards the neighborhood.

The factors related to the internal and structural quality of housing were introduced by Onibokun (1974). The aim of housing is to improve or ameliorate poor conditions of housing; this contributes thus to the enhancement of the standards of people's living and the overall quality of the physical environment (Liu, 2007).

Physical or environmental quality (Van Kamp et al., 2003; Kellekci and Berköz, 2006), odour (Baiden et al., 2011), noise (Dahmann, 1985), security problems (Mohit et al., 2010), safety problems (Salleh, 2008; Caldieron, 2011), heavy traffic (Varady, 1983), accident rate (Mohit et.al., 2010) community layout and design, crime rate, access to services and housing quality (Hourihan, 1984; Bonnes et al., 1991; Potter and Cantarero, 2006; Braubach, 2007; da Luz Reis & Lay, 2010) are other elements that have resultant influence on the residential satisfaction within a neighborhood. The functions within housing like cooking, washing, ventilation and sanitary facilities (Amole, 2009), the varieties in room number and size, and types varieties (Salleh, 2008; Mohit et al., 2010), the location of the rooms (Ukoha and Beamish, 1997), the morphology of the building (Amol, 2009), availability of a balcony (Mustapha et al, 1995), sunshine and brightness (Mustapha et al., 1995; Ibem and Aduwu, 2013) are all attributes used to measure residential quality and housing satisfaction.

Sungur (2001) explored the impacts of the morphology of housing on the satisfaction of the user via analysis of the dwelling layout of some settlements of housing, on the basis of their morphological features. In the resultant outcome, it was found that the morphological features of dwelling, have clear and strong relationship with the satisfaction of the user.

One research set identifies physical appearance as the most crucial factor for increasing/improving quality of life and residential satisfaction (Kaplan, 1985; Sirgy and Cornwell, 2002). Planners support the essence of physical characteristics; inhabitants consider social factors more vital in judging residential satisfaction (Lansing et al., 1970). Residents are highly appreciative of safe communities with local

shops, good leisure facilities, public facilities like school, healthcare and transportation; and good quality of environment (Lu, 1999; Hipp, 2010; Dekker et al., 2011).

Some academicians have made the argument that the perception of residents about their environment has definitional tendencies for life quality (Andrews and Withey, 1976), while others are of the insistent perception that better housing could be attained via the incorporation of the perceptions of the people and their satisfaction with their residential environments (Cutter, 1982; Francescato, 1982; Muoghalu, 1984).

For instance, Ogu (2002) stated that the approach of satisfaction to evaluation of environmental quality has useful significance for urban development and planning. Furthermore, Berkoz et al. (2009) mentioned that satisfaction in environmental quality and dwelling increases life quality, and people tend to be more satisfied in their lives. Therefore, they assessed the dwelling and environmental quality in order to improve satisfaction in the qualities of dwelling and environmental quality. In another study by Oktay et al. (2012) examined relationships between neighborhood satisfaction and selected measures of perceived neighborhood quality among residents. They argue that neighborhood quality (e.g. availability of things to do, attractiveness, appropriateness as a place to live) can impact satisfaction.

In an earlier study by St. John et al. (1986) mentioned that a perception which is positive on built environment, open space, and people residing in the neighborhood is a focal aspect in the evaluation of the neighborhood. The open spaces and green areas

are also increase people's psychological perception and lead to increase satisfaction degree of residents (Zhu et al., 2017).

Also, in the study by Bender et al. (1997) stated that distance to nature and green areas was found to be highly important. Moreover, Berkoz et al. (2009) assessed accessibility to various functions areas in the environment such as (e.g. green and open spaces, relaxation areas) and found that accessibility to areas which are open is a variable that is essential in influencing location choice.

The aesthetic parts of the home like its housing unit design (Hourihan, 1984), landscaping and sidings also impact the satisfaction on housing and well-being (Rohe and Stegman, 1994; Tan, 2016). Ma et al. (2018) showed that green areas can have extremely positive impacts on the welfare of people, and proffers support for their further promotion. Similarly, they mentioned that green areas not only have a significant effect on the wellbeing of the residents, but also an impact which is highly positive, on the mental and physical health of the public.

Onibokun (1974) introduces the structural quality factor to satisfaction with housing satisfaction. In another study by Amerigo and Aragones (1990) considered the construction quality of the houses as one of the components of residential satisfaction. In the study by Satsangi and Kearns (1992) discovered that poor quality of construction results to a frequent maintenance, that leads to dissatisfaction. Thus, dissatisfaction in home maintenance results to dissatisfaction with a home's usage (Kahraman, 2013). Also, Kahraman (2013) concerning construction materials is one of the attributes which effect on housing satisfaction.

In the study by Maliene and Malys (2009) propose model of sustainable communities and improving the life quality of residents, and found that a huge variety of housing of high-quality (e.g. building design, size, construction comfort, etc.) is as vital as other features of housing which are sustainable (accessibility, affordability, waste management, energy efficiency, security, etc.). Ogu (2002) considered the environment component such as collection of storm-water, refuse and drains impact on residential satisfaction.

The aim of the study by Zanuzdana et al. (2013) is to identify the multiple sources of the satisfaction and explored the determinants with housing in the population of rural areas and urban slums. They assessed housing satisfaction from (main sources of water supply, electricity etc.) and specially found the strong relations between the roof, walls and floor materials, and housing satisfaction. Also, they found that rural residents felt more satisfaction with their housing than dwellers in urban slum. Similarly, water and electricity supply, and drainage system (Mustapha et al., 1995) in the neighborhood are employed as variables in the studies for housing satisfaction within countries which are underdeveloped or developing.

Likewise, the findings of Bekoz et.al (2009) and Etminani-Ghasrodashti et al. (2017) showed that satisfaction with utilities (eg. water, electricity, gas, telephone, internet) were the main determinant factors of overall satisfaction. Ibem and Aduwu (2013) assessed residential satisfaction and found that inadequate electricity and good drinking water supply were the core sources of dissatisfaction among residents, as suggested by their study.

2.3.3 Economic Dimension of Residential Satisfaction

The lack of options as a result of economic constraints may result in the reduction of expectations and to higher satisfaction with present housing. People who resided in conditions of poor housing may not bear expectations that are high. They will feel greater satisfaction with the conditions of housing that might not be acceptable to others who are within similar economic conditions (Liu, 2005). Filandri and Olagnero (2014) investigated the correlations between house ownership and the housing well-being, through distinguishing between the high, the middle and the low class.

Ibem and Aduwu (2013) mentioned that tenure option (homeownership/rent) can have impact on residential satisfaction. Similarly, several studies expressed that homeownership is a key determinant which defines economic dimensions of housing satisfaction (Varady and Carrozza, 2000; Baiden et al., 2011). In the proposition of a house ownership model and cognitive well-being, White and Schollaert (1993) discovered that ownership of a home raises the feelings of general well-being via increasing interaction with other community residents and raising satisfaction with the residential environment. The ownership of a home produces a sense of psychology and permanency, in addition to an economic investment in the residential neighborhood. For instance, in Benin city, where housing has dire cultural significance (see Ogu, 1999), ownership of a unit of dwelling, in spite of how simple the quality or construction design is, is an achievement. This, would in turn, produce a bigger consider for the welfare of the environment of residential satisfaction.

The economic aspect makes claims about the accruement of benefits on housing, such as the creation of employment from investments in housing. Thus, the opportunity cost

of making investments in housing, when compared to similar investments in the creation of employment would directly need to be estimated by the measurement of the value of each investment's benefits. In principle, a house is simply what it is – a house; as an investment, it is not distinguishable from other investment forms.

A drop in the cost of housing brings about dissatisfaction amongst homeowners (Boyle and Kiel, 2001). In addition, the physical maintenance homes in the neighborhood (Boyle and Kiel, 2001) and homeownership payments (Mustapha et al., 1995) contribute to economic aspects of satisfaction with residential satisfaction. The economic dimension is made up of the level of income of the resident, and not just the payment or cost terms for such dwelling, which is overall named a dwelling's affordability. Several studies considered housing cost and housing tenure are determinants which related to residential satisfaction (Lu, 1999; Liu, 2005; Zanuzdana et al., 2013; Ibem and Aduwu, 2013; Lin and Li, 2017).

Similarly, Kahreman (2013) stated that the housing affordability and being the house owner has impact on economic features of the house relation to housing satisfaction. The study by Tech-Hong (2011) unveils that people who reside in medium- and high-cost housing, were satisfied when granted the chance to purchase provided homes, via the usage of particular system of housing buying. For instance, in North America, owning a detached single-family housing is a cultural norm. However, many people are apartment renters, because they either cannot afford a house or due to the fact that they favor the renting of housing, as a result of the flexibility in financial arrangements. For several Asians, in their country, the norm is renting from private landlords or the

government, due to factors like inadequate financing institutions and high construction costs for housing, when compared to household income (Liu, 2005).

Higher income earners are more likely to be residents in neighborhoods that provide better environmental quality. Also, on a family, the impact of housing includes the opportunity that residing in a household which is better, could lead to an economic position which is better, for the household. In the issue of residential satisfaction from economic dimension, tend to bother themselves with issues bordering housing finance, house prices, and dynamics of supply and demand. Furthermore, cost of living such as prices of goods/services in the housing area can increase the level of satisfaction with residential (Ibem and Amol, 2013; Ibem and Aduwu, 2013; Ibem et al., 2019).

Another determinant contribute significantly to the household economy is the creation of job in the form of enterprises that are home-based. Because settlements develop and evolve as a response to the income-earning capacity of residents, upgrading or the mere existence of home-based enterprise can enhance life quality and housing, in settlements of low-income (Smit and Donaldson, 2011).

2.3.4 Cultural Dimension of Residential Satisfaction

Several variables have been discovered to have impact on residential satisfaction, with the inclusion of culture (Deshmukh, 1995; Guney, 1997; Smith and Krannich, 2000; Lee and Park, 2012). Generally, satisfaction with residential is greater when it proffers a match of the inhabitants' own culture, probably because such dwellings that reflect culture are designed complementarily to the typical patterns of behavior of that culture. Researchers have found that cultural norms are strong factors impacting housing satisfaction (Crull et al., 1991; Morris et al., 1976).

Similarly, Morris and Winter (1978) avail a proposition of a normative model, in which standards of culture, relative to housing satisfaction, are set to be changeable in accordance with the ethnic and cultural environment of each country, rather than of global standards. Ukoha and Beamish (1997) stated that housing satisfaction in countries which are developing, may be better comprehended via context of culture of the variety of situations regarding housing. Rapoport (1977) noted that individual aspiration does achieve satisfaction which is culturally derived. Moreover, Bashari et al. (2019) mentioned that cultural factors also influence people expectations, preferences, and aspirations.

For instance, in a study of satisfaction in housing by Qadir (1993), on students from East Asia within a university setting, it was uncovered that due to the various and diverse on-campus cultural backgrounds, student residents often altered their rented university apartments slightly to fit the needs of their culture better, for optimum housing satisfaction.

According to Amérigo and Aragonés (1990), an abode is not simply a structure filled with things; the culture impacts its forms and organization. Thus, it is perceived to have reflection of the relationship between culture, environmental, and residential satisfaction.

The meaning of culture could emanate from studies collected, that cover three main parts that impact the satisfaction of residents, and socio-cultural experiences of housing for people (Thaman, 2002). It is an all-inclusive notion. Makinde (2015) stated

that culture in the development of a perspective on housing, simply implies the way through which people get accustomed to their environment.

According to Munro (1995), the idea of cultural influences has yet to be set up like much like that of social influences, and very often, as a resultant outcome of its social dimension, it is listed under social influences. The preservation of housing heritage, nevertheless, has as its variant characteristic, cultural development. Along this line, the preservation of residential buildings for heritage values and aesthetic, hence it enhances cultural continuation. Also, the design of buildings of residence on the basis of contemporary, cultural, local and aesthetic values, combined with the past cultures, enriches and sustains a place's cultural identity (Chio, 2004).

For instance, Bonaiuto et al. (2015) highlighted that studies conducted comparatively in Eastern and Western countries, utilizing a common tool of standard, should aid the detection of cultural variations in the dimensions that affect more overall responses that are social-psychological such as residential satisfaction and neighborhood attachment. Makinde (2015) noticed that certain factors which are cognitive like socio-cultural background and experience impact the human perception satisfaction level of their housing environment. So, the derived satisfaction by the residents of a specific unit of housing reflects the degree to which they are feeling in conformity with their socio-cultural origins (Jiboye, 2008).

Makinde (2015) explained that the inadequacy of socio-cultural considerations like the ethnicity of the end users, family values, the size of family, poor utilization of the findings of research, and religion among others, are among such core limitations to

satisfaction of housing. The author furthermore opined that the attitudes towards use, space organization, and space, all share linkages to cultural traditions, often better comprehended by the natives themselves.

Cultural norms are rules or standards a society sets for life conditions or behavior (Morris and Winter, 1978). Limits exist, within which humans in particular societies operate. Personal/family norms guide the family or household. Household norms do not coincide necessarily with cultural norms, while cultural norms influence them. In addition, norms which are personal/familiar are allowed to deviate, in response to limiting factors, from cultural norms in the situation.

Furthermore, in the studies by (Kellekci and Berkoz, 2006; Bonaiuto et al., 2015) stated that cultural facilities and activities can have positive affect housing satisfaction. Recently, Bashari et al. (2019) assessed the units of housing of residents, in relation, to the impact on their wellbeing and culture. Their resultant outcomes showed that the housing design does not have reflections of the residents' cultures, majority of the residents were not satisfied with it.

In summary, over the last three decades, several studies have identified several important determinants for each dimension of residential satisfaction namely social, economic, environment, and culture. Based on the previous studies and literature review, which explained in above, Table 7 classifies and presents the most important factors of residential satisfaction for each dimension.

Based on the previous studies which shows the relationship between residential satisfaction and sustainability (e.g., Cho and Lee, 2011; Salleh, 2012; Makinde, 2015). Identifying the determinants of residential satisfaction from dimensions of environment, social, economic and cultural can help to more an area towards sustainability.

Table 7. Sustainability Performance Factors of Residential Satisfaction

Dimension	Sustainability Performance Factors of Residential Satisfaction	Relevant Reference
Economic	Cost of housing (affordable price for buy and rent)	Zanuzdana et al. (2013); Lin & Li (2017)
	Tenure options (owner/rent)	Zanuzdana et al. (2013); Ibem and Aduwu (2013)
	Cost of living within the housing area (good prices of services)	Chen et al. (2016); Ibem et al. (2019)
	Job opportunities in the housing area	Lin and Li (2017)
	The creation of job in the form of home-based enterprise	Smit and Donaldson (2011)
Social	Access to social infrastructure (schools, public transport, health center)	Ikurekong (2009); Berkoz et al. (2009); Mohit et al. (2010); Ibem & Aduwu (2013); Sun et al. (2018)
	Provision of recreational/ sporting facilities	Hudson et al. (1997); Ibem & Aduwu (2013); Ibem & Amole (2013)
	Access to social amenities (shopping centers, playground)	Tan (2011); Ibem & Aduwu (2013)
	Housing near to the places of working and worshipping	Aiello et al. (2010); Mohit et al. (2010); Clement and Kayode (2012)
	Level of social mixing in housing environment	Jun and Jeong (2018); Chu et al. (2019)
	Quality of internal spaces of the units of housing	Qadir (1993); Ukoha & Beamish (1997); Ren & Folmer (2017)
	Privacy in dwelling units	Ukoha & Beamish (1997); Baiden et al. (2011); Ibem & Aduwu (2013)
	Housing contribution to the aesthetics of urban landscape	Jorgensen et al. (2007)
	Social networks	Vera-Toscano & Ateca-Amestoy, (2008); Addo (2016)
	Security/safety concerns	Vera-Toscano & Ateca-Amestoy (2008); Dekker et al. (2011); Ibem & Aduwu (2013)
	Management rules	Francescato et al. (1989); Ibem & Aduwu (2013)
Cultural	Compatibility of housing form and design with resident's culture (interior layout and external dwelling form)	Rapoport (1969); Ozaki (2002); Jiboy (2009); Makinde (2015); Bashari et al. (2019)
	Availability of cultural facilities and activities	Kellekci & Berkoz (2006); Bonaiuto et al. (2015)
	Compliance of design of new houses with historical and cultural values	Makinde (2015)
Environmental	Housing density	Kearney (2006); Makinde (2015)
	Building type	Baiden et al. (2011); Makinde (2015)
	Dwelling environment quality: number, natural ventilation and lighting, size and location of (bedrooms, bathrooms, living rooms), size of corridor, dwelling structure	Ukoha & Beamish (1997); Kutty (1999); Coolen (2006); Amol (2009); Mohit & Azim (2012); Ibem & Aduwu (2013); Jansen (2014); Ren and Folmer (2017)
	Construction techniques and materials (floor, wall, ground)	Amerigo & Aragones (1990); Zanuzdana et al. (2013)
	Neighborhood environmental quality: noise level, availability of thing to do, relaxing, attractiveness, pedestrian walkaways, shopping facilities, children's play areas, parking facilities, night lighting	Bonaiuto, 2004; Kellekci & Berkoz (2006); Berkoz et al. (2009); Mohit & Azim (2012)
	Open Spaces and green areas (presence, care, maintenance)	Bender et al. (1997); Kellekci & Berkoz (2006); Berkoz et al. (2009); Aiello et al. (2010); Etminani-Ghasrodashti et al. (2017); Ma et al. (2018)
	Landscaping elements (plants, pavement, street furniture, man-made object, trees)	Rohe and Stegman (1994); Tan (2016)
	Storm water discharge system	Ogu (2002); Liu & Jensen (2018)
	Waste management system	Maliene and Malys (2009)
	Main sources of power and water supply	Mustapha et al. (1995); Berkoz et al. (2009); Zanuzdana et al. (2013); Etminani-Ghasrodashti et al. (2017)

2.4 Conclusion of the Chapter

In summary, this chapter explained the satisfaction definitions from general and multidisciplinary perspectives. After comparing the different satisfaction definitions, the common keywords of emotional, expectation, experience, and perception are constructed. Besides, it overviewed the important theories, conceptual models, and studies of residential satisfaction. Moreover, it described the determinants of residential satisfaction based on the literature from social, environment, economic and cultural dimensions.

Furthermore, after reviewing the literature, it found that majority of the studies of residential satisfaction employs a single or combination of the multi-dimensions such as social and environment, economic and social and environment or culture in their studies. As shown in Table 7, studies mainly investigated residential satisfaction by considering the determinants such as cost of housing and cost of living within the housing area from economic dimension. Furthermore, the determinants such as access to infrastructure and safety/ security concern from social dimension. Also, availability to cultural facilities and activities from cultural dimension. Moreover, open spaces and green area and landscaping element from environment dimension.

Also, it observed that there is a lack of study in the literature to using specifically the concept of sustainability to determine the dimensions of residential satisfaction based on the social, environment, economic, and culture. Moreover, it found that unlike of numerous studies of residential satisfaction in non-historic urban quarters few studies have evaluated residential satisfaction in historic urban quarters.

Therefore, in the next chapter, it will describe the definitions, meanings and characteristics of historic urban quarters. Also, it will review the residential satisfaction studies specially investigated in historic area to find the important factors of residential satisfaction in historic area.

Chapter 3

RESIDENTIAL SATISFACTION IN HISTORIC URBAN QUARTERS

According to the conclusion of the previous chapter, it is not well-examined in the literature the important factors of residential satisfaction bases on the perception, expectation and experiences of residents, from all potential dimensions such as environment, social, economic and culture particularly in the historical urban quarters. Therefore, this chapter first presents the definitions and descriptions used in identifying urban historic quarters. The general characteristics of historic urban quarters are highlighted. The chapter discusses the threats posed to the future of historic urban quarters. Lastly it will explain sustainability performance factors of residential satisfaction studies in historic area.

3.1 Historic Urban Quarters

In this section it will explain the definitions, components, value and threats of historic urban quarter respectively.

3.1.1 Historic Urban Quarters: Definitions and Meanings

Historic area/city as defined according to the UNESCO (1976) recommendation suggested that “Historic and architectural (including vernacular) areas” could be taken to refer to any structures, building groups, and open spaces such as paleontological and archaeological sites, constituting settlements for humans in a rural or urban environment, the value and cohesion of which, from the architectural, historic, archaeological, prehistoric, sociocultural or aesthetic perspective, are recognized.

Among these extremely varied places in nature, we can very possibly distinguish the following especially: old urban quarters, historic sites, historic towns, hamlets and villages, as well as groups of monuments which are homogenous. The latter is being understood as ought to be preserved carefully and unchanged, as a rule (Yusuf, 2007). Historical districts extend the concepts of "historical center" or "building complex", including broader urban context and geographical environment (Yu et al., 2018). Furthermore, considering that areas of historic afford the greatest tangible evidence down to the ages, about the cultural, social, and religious diversity and wealth, to which their integration into modern living and safeguarding in today's society, offers a basic factor in land-development and town-planning (UNESCO, 1976).

Moreover, from the definition by the ICOMOS Washington Charter (1987), areas of urban history, small and large, consist of towns, cities, and historic quarters or centers, together with their environments – manmade and natural. Moreover, one of their principle and objectives is qualities that are to be preserved, which include the town's or urban area's historic character, and all those spiritual and material elements, that highlight this character, especially in urban pattern, relationships between buildings, green and open space, interior and exterior of buildings, appearance, as defined by construction, scale, color, material, decorations and style.

The urban tissues and historical buildings, are witnesses of civilizations of the past, as well as the remnants of genuine cultural heritage face of the historic urban quarters. They represent the results of all economic, social, and political factors that made them; the extents of development attained by the culture of the nations; and its system of transport, technology, aesthetic traditions, and construction material sector (Doratli et al., 2007).

Historic urban quarters have special symbolism in the historical and cultural heritage of a country, since they constitute relevant and coherent entities, which are defined by their traditional value and architectural character. According to Tanrıkul and Hoskara (2019), historic urban quarter is constitutive of structures which are tangible and intangible, physical, and are olden day's heritage, while showcasing the way of living and cultures of the people, as well. Historic urban quarter can be found in various countries of the world; they show the strides of a civilization over the centuries. Jiang et al. (2017) stated that these quarters represent the gathering of cultural or historical buildings, which present style and features of a particular era in history. Many denote efforts carried out by indigenous cultures, some which are the consequences of colonial or imported activity. A unique pattern and forms are established creatively, via the mingling of these forces of influence (Doratli et al., 2007).

Historic buildings are generally smaller than those of modern buildings, they are often not developed up the maximum permissible plot ratio: a building which possesses a floor area of three, in a distinct that permit eighteen, is more valuable dead than alive if there is a strong real estate market, no matter how important its architecture or associations maybe (Barnett, 1982).

A quarter of urban history is a constituent of our general environment; it is the recognizable historical dimension, via physical fabrics of places (Vehbi and Hoskara, 2009). Moreover, historic urban quarter, as places where a great diversity of historic and memories of their own origins (Doratli, 2012). Tiesdell et al. (1996) explained the mannerisms in which quarters, may be typically identified or defined; such as physical boundaries (a different rupture of physical nature, edge), as well as identity and character (functional and physical dimensions).

3.1.2 Components of Historic Urban Quarters

3.1.2.1 Physical Boundaries

In considering the physical parameters of historic urban quarters, there is an important issue of size. Which means retain their integrity historically, and cohesive nature as quarters instead of fragmentary remnants of previously much bigger entities. Quarters can have very defined and discrete, obvious boundaries. The physical boundaries might be defined by a unique physical character rupture, by a physical obstacle or edge, for example, a river or a busy road, or it might be determined artificially for convenience, administratively.

There may have been the prevalence of boundaries, arising autonomously and subsequently been codified for administrative purposes. Conversely, an historic delineation might also have contributed to its subsequent character. An area's identity might also be enhanced by clear cut boundaries to a quarter, and foster the development of economic, functional, and social interaction within the area. It also allowed for collective promotion.

Nevertheless, in discussing street-neighborhoods, Jane Jacobs (1961) argues that a great aspect of their success is dependent on the overlapping and interweaving of activities. Hence, it is useless to try to define accurately their limits because wherever they work best; they have no commencements or ends setting them apart as distinct units. From the above explanations' boundaries in the historic urban quarters can be identify by ;

- Distinct rupture
- Edge
- Obvious boundaries

- Enhance the identity
- Development of functional
- Economic

3.1.2.2 Character and Identity

Lynch (I960; p. 47), in his taxonomy of the constituent elements of the image of the city, defines districts as sections of the city which are medium-to-large, and conceived of as possessing extents which are two-dimensional, which is mentally entered inside of by the observer, mentally, and are recognizable as having some character in identification and commonly. They are as well used for reference externally, although always identifiable from the inside. The common, character of identification of a quarter has dimensions which are both functional and physical. That character and identity might be embodied in the very mortar and bricks of the area; in the area, it might also be traditionally resultant activities.

With their buildings, historic environments have provided a unique visual representation and image of the city, before they got pulled into a sea of global environments. They are reflections or representations of the elements of the cities' economic, cultural, political, social, and architectural history. Historic quarters in cities establish character and identity, concretizing a meaningful place that endured over time. The historic urban quarters which are surrounded by certain kind of fortifications, are easily recognized from outside.

A historic urban quarter, physical character can be considered to be the aggregate of individual building characters plus that of the spaces between those buildings – the whole, however, is always greater than the summation of the parts (Oc et al., 2010).

In the Charter for Historic Towns, as the US/ICOMOS Committee on Historic Towns adapted in 1992, the characteristics of historic towns or districts are stated as follows: The vitally predominant features of a historic district or town consists of all the intangible or spiritual and physical elements, that go to constitute its character. Five special attributes can be found within these elements;

- The patterns of the place's historic development patterns, as these have become emergent over time.
- The special relationship between the districts' or town's buildings, and its surrounding landscape and streetscape.
- The physical features of the buildings' inside and outside themselves. These consists of not just the core façade of a building, but its interior spaces, and construction features and proportions. The core features of the building of an individual, to be preserved, consists of its material, scale, size, construction features, ornaments and style.
- The unique relationship between the historic district or town, and the larger surrounding area – urban or rural.
- The different functions that the historic neighborhood or district have over the times, acquired. Such functions avail it an overall ambiance that combine to define or create its character, along with other intangible elements.

A core of urban history has a mix of assets which offers a variety of possibilities for the definition of its identity. This may be found in its streets, buildings, people and squares. In conventional urban environments, urban cores exhibit the most successful qualities of an urban fabric that is well-defined, and same can be said for its architectural order, unity, and continuity (Doratli et al., 2004).

It is accepted widely globally, that, there is a special place held by historic urban quarters within the historical and cultural heritage of any country, since they are entities which are coherent, and are identified clearly by their architectural value and traditional character (Doratli, 2000; Doratli et al., 2004). Historic urban quarters are projections of the city's various historical elements, in a cultural, social, political and architectural perspective and are usually symbiotically linked with other parts of the city (Tiesdell et al., 1996; Doratli et al., 2007).

Accordingly, Tiesdell et al. (1996) stated that they ought to be hence considered within the city's context in its entirety, with considerations for their conservation, carried out of concern for enhancement and revitalization, and not simply as a restrictive and straightforward concern with preservation. Unique street patterns and historic buildings, and urban tissue/forms, vibrant public areas, and pedestrian-friendly streets, are elements of historic urban quarters, and have mixed functions (Vehbi and Hoskara, 2009).

3.1.3 Values of Historic Urban Quarters

Historic urban quarters may embrace many of values, like a scarcity value (emanating from the form, typology, building designs and construction period in these areas, that make them special in comparison with buildings which are built recently), a value of cultural identity (this includes tradition, continuity, age, national and political values), an aesthetic value, political value, psychological and social value, an environmental value, emotional values (Feilden, 2007), educational value and a resource value (the degree of housing stock in existence, that can equally be considered an economic issue) (Doratli, 2004).

Historic urban quarters, within which revitalization attempts is expected to occur, are among a cultural heritage with a different value range. The historic building(s) is preserved for its rich social values to the overall society, and not only conserved for its associated architectural and historical value.

English Heritage (2008) suggested that social value has associations with places perceived by people as identity, distinctiveness, coherence, and social interaction sources. Moreover, we may ascribe social value to places which conduct key roles within communities, contribute to its sense of identity, or support the activities/traditions of the community (Gravesite, 2011).

Practice and performance equally play a major role in setting up social value at sites of heritage (Bagnall, 2003; DeSilvey, 2010). These may consist of: ceremonial and ritual activities, community festivals; leisure, memorial and recreation events (Frederick, 2009). One of the strongest arguments for the protection of historic urban quarters ought to be that these areas have multiple layers of value to the community. Historic areas should not only be considered as depot of buildings that are worth to be preserved, but also a community.

As Rypkema (1992) stated, historic properties may be seen as having different types of value such as social, cultural, aesthetic, architectural, historical and sense of place. Table 8 below shows the summary variety of values attached to historic urban quarters. As seen, social value of a historic place can be explained by identity sources, coherence, intangible value distinctiveness, and social interaction. Likewise, cultural value is defined as the sum of aesthetic, spiritual, historical, symbolic and social values in terms of a sense of identity and place. It also is described by cultural activities,

cultural heritage/memory, visual continuity, and cultural identity. Visible evidence of the past can contribute to cultural value through the cultural memory and identity of people or place. Besides, a historic place has an aesthetic value as historic buildings and areas have specific architectural style, picturesque qualities, redolent of a period of genuine craftmanship, natural materials, human scale, richness and diversity that are lacking in the modern plastic. Further, a historic place has an architectural value because a historic place may made up from a range of periods in style ranges, and this diversity is usual viewed positive. Moreover, a historical place has both sense of place and historic values as historic buildings and areas includes cultural heritage and history of aesthetics, science, and society.

Table 8. Values of Historic Urban Quarter and Explanations

Values	Description	References
Social	Intangible value, identity, distinctiveness, social interaction and coherence, community festivals, ritual and ceremonial activities; recreation and leisure and memorial events	Tiesdell et al. (1996); Doratli (2004); DeSilvey (2010);
Cultural	Tangible and intangible cultural heritage/memory, visual continuity, cultural identity	Tiesdell et al. (1996); Doratli, (2004)
Aesthetic	Old buildings are (intrinsically beautiful or antique, picturesque qualities, redolent of a period of craftmanship, natural material, human scale).	Tiesdell et al. (1996); Doratli (2004); ICOMOS (2013)
Architectural	Combination or juxtaposition of many buildings, variety of styles and periods, aesthetic diversity of the urban scene.	Tiesdell et al. (1996)
Historic	Including the history of aesthetics, science, and society	ICOMOS (2003, 2013)
Sense of place	Cultural heritage, people sense of continuity, individual psychology, identity	Rypkema (1992); Khalaf (2019)

In parallel to the changing objectives and dimensions of conservation and preservation, and the re-evaluation of these quarters, recognizing the cultural value, historic character and architectural recognition, is strongly emphasized upon (Doratli, 2004). With the inclusion of its tangible and intangible aspects, urban heritage, makes up a key resource in the enhancement of urban areas' livability, and fosters social cohesion and economic development, in a globalized environment which is changing (O'Donnell and Turner, 2012).

The historic urban quarter is comprised of all evidence in a historic city, of past human activity within specific parts. They serve mixed functions, which are specific and traditional, a historical identity possessing street pattern, historic fabric and local character which is unique. They are the center of the towns' economic, social, and cultural life (Tiesdell et al., 1996).

3.1.4 Threats to Historic Urban Quarters

Considering that all historic urban quarter is special in value terms, that make it preservation worthy, the degree and type of obsolescence, and the inherent development dynamics that it may experience, make it distinctly special from other parts of its city (Doratli et al., 2007).

Physical and functional obsolescence threatens historic urban quarters, as is the case in conditions of poor structure, rising rates of vacant dwellings, contains very old buildings, buildings used for less suitable purposes, lack of maintenance, non-contemporary sanitary condition and conditions, alterations in the ownership patterns, diminishing attractiveness, decreasing rental of properties, insufficient parking spaces, narrow roads, lack of public facilities, changing social composition and undesirable

environment (Tiesdell, 1996; Doratli, 2000). All these concerns represent deterioration and decay symptoms.

Ogu (2002) stated that it is a necessity, in light of deteriorating urban fabrics, to engage in the incorporation of local input and preferences in the processes of management and planning, so as to attain appropriate and feasible solutions to the conditions of poor housing and services.

Particularly, historic environments, lose economic and functional viability, with their scarcity having obsolescence in their urban buildings and fabric, social polarization and exclusion due to urbanization (Vehbi and Hoskara, 2009). In addition, Vehbi and Hoskara (2009) noted that historic urban quarters suffer significant decay in social, economic and physical terms, and are posed with mainly marginalized population growth, building neglects, and the decrease in customary economic activities.

According to Ekinci (1994), historic urban quarters can be referred to as the most precious constituent of cultural heritage, since they bear witness about civilizations past, and the accumulation of the creativeness worth thousands of years. Cultural heritage – the historic urban quarters – are thus threatened more with destruction, by changing economic and social conditions, and not only by the conventional causes of decay, that aggravate situations with far more formidable destruction or damage phenomena (Doratli, 2004).

3.2 Studies on Residential Satisfaction in Historic Areas

Researchers in residential satisfaction tend to overlook some factors and/or context that impact the satisfaction of residents. Several academicians have noted that settings of residential satisfaction in a historic urban quarter have vast difference from other

housing forms (Doratli et al., 2007; Vehbi and Hoskara, 2009; Sarıoğlu Erdoğdu and Özdemir Sari, 2017).

The value, architecturally of the residential settings, the strict management rules that guide new housing constructions and renovations, and economic potentials that accompany tourism scenarios, may have dire influence on the psychological construct of residents based off of residential satisfaction. In public or private urban housing, residents are of the liberty to enjoy the transformation or modification of their environment and houses, on the basis of the strength of their finances. Unlike in historic urban quarters, these enjoyed rights are not guaranteed, and are denied on several occasions.

Thus, residential satisfaction in historic urban quarter may vary in other contexts like urban private and public housing. Furthermore, it should be mentioned that; a few studies have specifically focused on examining the determinants of residential satisfaction in the old settlement, old dwelling, renovated historical blocks, traditional core areas and historic neighborhood.

For instance, in an earlier study by Bonnes et al. (1991) evaluated of social density (crowding) and in habitant's residential satisfaction on a neighborhood (called quartiere Aurelio) in Rome which mainly built between 1950s and 1960s. They touch from many different aspects of quality of environment such as functional features (schools and educational services), cultural (e.g., cultural centers, attractions), leisure, transportation, sport facilities.

Türkoğlu (1997) were evaluated both planned (central planned, new planned) and squatter (traditional squatter and new squatter) environments in Istanbul from the perspective of the resident, and the dwelling's physical conditions, accessibility work place, the city center, shopping, hospital, and municipal services; the availability/maintenance of recreational, social, and educational services; physical and social problems of the environment, satisfaction with neighbors and climatic control of the dwelling. The author found that the residents that reside in both new and central planned city sections, are more satisfied than those residents that reside in both conventional and new neighborhood squatters.

Ogu (2002) assessed of residential satisfaction, with Benin City, one of the key traditional cities in West Africa from housing (e.g. material, access to water supply, privacy in the house) and infrastructure services (e.g. refuse collection, storm water drains, general condition of the neighborhood). The selected case study included the core area, which evolved from traditional urbanization processes; the planned areas were made up of mainly estate houses, while the suburban zones consisted of recent localities that emerged largely from suburbanization processes. Moreover, it had identified the environmental infrastructure services and quality indicators were as in need and inadequate in terms of measures, required for the improvement of the situation if the satisfaction of the residents, with their areas of housing is to be enhanced substantially. Also, Ogu (1999) stated that in Benin city, owning a unit of dwelling, is an achievement, irrespective of how simple the construction quality or design, is.

In a study by Jiboy (2004) assessed the responsiveness socio–culturally, of the size of household on the quality of housing in Osogbo, Nigeria, which was partitioned into

three zones. The first zone is traditional core area, second one is the intermediate area (often between the outskirts and core), and the newly developed/peripheral area is considered as the third zone. The author selected housing quality attributes such as (e.g. availability electricity and water supply, waste disposal facilities, availability of social infrastructure, neighborhood interaction). The results showed that, first and second zones with low and poor housing quality, while, the third zone had a higher rating. Moreover, the author stated that the general quality of the existing environment and housing could be bettered via intervention by the government, in the way of necessary urban renewal programs and rehabilitation.

Phillips et al. (2005) examined the role played by residential satisfaction in the mediation of the effects of conditions of dwelling (interior and exterior environment) on the wellbeing, psychologically, for the older dwellings in Hong Kong. The interior environment witnessed a greater effect on the satisfaction with residential dwelling than the exterior. They revealed that ventilation and sunshine which related to interior are vital elements impacting. Also, they mentioned that other elements that include street conditions, building locations, parking spaces, the access to natural factors, and some other social factors can influence the evaluation of individuals.

In another study by Erdogan et al. (2007) investigated the satisfaction of people with their housing in historical and modern neighborhoods which were located in Edirne, Turkey. Due to their analyses, they discovered that there is an attitude of higher perceived satisfaction toward the resident, with satisfaction and social relations with the local authority, in modern neighborhoods, compared to traditional ones. They also discovered that the residents of modern neighborhoods felt greater satisfaction with the social conditions of living, as well as the environmental ones. In conventional

neighborhoods, interestingly, the general satisfaction with housing, is extremely higher when compared to modern neighborhoods.

Lovejoy et al. (2010) examines the features linked or associated with higher satisfaction levels with neighborhood, among inhabitants of traditional vs suburban neighborhoods, in eight neighborhoods in California. They discovered that neighborhood satisfaction occurs highly among residents in the traditional neighborhood, even after socio-demographics were controlled for, as well as other characteristics. Variations in the associated features with satisfaction, within each group, consist of the perception of diversity and liveliness, having significant contributions only among the segment of the sample residing in traditional neighborhoods; with economic homogeneity perceptions, contributing largely only among the segment with suburban population. Features like school quality, parking, and yards, do not emerge as either group's vital predictors of satisfaction. The most essential characteristic for neighborhood satisfaction among both of them were the perceptions of neighborhood safety and attractive appearance.

Baeissa and Hassan (2011) conducted an examination of habitability levels of a modern house design, compared to that of the traditional houses in Mukalla, in Yemen. The outcomes highlighted that satisfaction levels of the respondents, residing within traditional units of housing, are higher overall, than those in modern units of housing. The study's finding indicate that house design is as essential as a factor in determining the level of satisfaction with residential.

The study by Kamaruzzaman et al. (2011) was carried out user satisfaction on six refurbished historic Malaysian buildings, comprising public buildings, hotels, and

offices, in Peninsular Malaysia related to indoor environmental quality. They considered the factors such as (e.g., smell, colors, freshness, attractiveness of the room, humidity and noise level, ventilation, daylight, appearance of the building, management, privacy, amount of working space, building generally, electric lighting) and result showed that occupants were least satisfied.

Likewise, Temelová and Dvořáková (2012) conducted an evaluation of the residential satisfaction of two city center neighborhoods in Prague, which were elderly, and had experienced lots of dramatic alterations in their residential environment, during the transition from socialism: there was the historical core, that had experienced exposure to massive commercialization and touristification, and a former working-class neighborhood, which has been rapidly experiencing regeneration. The access of public spaces, services, social support and housing, locally, was examined via a questionnaire/survey, and contrary to the expectations of the authors reached on the basis of the existing academic review of literature, the resultant outcomes highlighted that, the elderly were more satisfied with their environment of resident, despite the rapid revitalization processes, in both types of neighborhood.

In a study by Kahraman (2013) explored housing satisfaction dimensions, with the case study of Dikmen district in Ankara, from the perceptions of oldest rural migrants.The findings showed support for the assertion that housing satisfaction is a phenomenon which is multidimensional, its physical (quality and house size, location, functionality, and interior features), social (proximity to neighbors and relatives) and economic (housing affordability, being the house owner) dimensions. The author found that the physical environment in have large impacts on the priorities and perceptions in the definition of housing satisfaction.

According to Sotoudeh and WanAbdullah (2013), both tangible and intangible aspects of particular cultures are consisted of historical contexts and buildings. In the architectural sense, the intangible refers to language, culture, belief, and the people, made manifest through physical forms of building.

Also, Zhang and Lu (2016) made comparisons of conditions of dwelling, individual satisfaction, and daily activities in traditional neighborhoods, as well as in the newly redeveloped Siheyuan areas with the residents. It suggested that residents in the redeveloped neighborhood of Ju'er, showed less developed social networking, and seldomly engaged in activities in the neighborhood, although the built environment is improved following redevelopment, than those residents who inhabit traditional, non-redeveloped neighborhoods. In the Ju'er Hutong Project, the general satisfaction for residents are mostly lower, with the residents reporting a lower satisfaction level in almost all areas, including with the social environment, built environment, and neighborhood facilities. Their results avail suggestions that the façade-style approach to redevelopment, with elements of traditional architecture, may better the built environment, but might also not preserve the social networks of the neighborhood, and hence sustain the satisfaction with residence.

Casakin and Reizer (2017) conducted an examination of the differences between renewed Kibbutz and traditional housing, on the basis of residential satisfaction, life satisfaction, and place attachment. The results showed that residents of the renewed kibbutz had higher levels of place attachment than the traditional housing. However, no significant distinctions were denoted for life and residential satisfaction, respectively. Moreover, satisfaction with residence, and place attachment were significantly linked with life satisfaction. The authors suggested access to cultural

activities associate with the residential satisfaction. Also, in another by Babakhani et al. (2015) stated that ignoring cultural values in renewing deteriorated urban areas can impact residential satisfaction negatively.

Nonetheless, a unique characteristic of cultural development is the preserving of housing heritage, from physical forms – internally and externally. Housing forms speak of the alterations in cultural identity and culture of a place, in different stages. It is representative of the artistic and aesthetic cultural dimensions, as well as people's way of life. There has been increasing concern, in the meantime, about the preservation of antique buildings, for such purposes of heritage and aesthetic value conservation (Thaman 2002). The conserving of residential buildings for these purposes, hence enhances culture's continuation. The cultural identity of a place is enriched and sustained with the designing of residential buildings on the basis of contemporary aesthetic values and local cultural ones, mixed with those of the past (Chiu, 2004).

In a recent study by Jiang et al. (2018) evaluated in two selected Chinese cities, eight historical blocks were studied. The theoretical framework, and outcomes of their analysis provide suggestions that moving intention is negatively and significantly affected by the satisfaction with residence. They showed that the satisfaction with residential is impacted significantly by the gap between the housing aspirations and the actual housing, as well as the environmental attributes, in proportion to the levels of aspiration. Also, house moving intention and the residential gap, are affected by a set of socio-demographic and physical profiles. Residents who are house renters, often have lower moving intentions, while residents residing in historical blocks, which were at early renovation stages, have higher moving propensity. Among the numerous

variables of social demographic, the most influential one is age, highlighting that inhabitants that were older had lower moving intention than the younger ones.

Moreover, Adewale et al. (2019) investigated satisfaction with residence amongst residents in the core traditional Ibadan area of Nigeria's southwest. They selected housing unit features (e.g., number and size of bedrooms, privacy within the dwelling), services in the housing (electricity and water supplies), physical neighborhood environment (e.g., size of open spaces, general cleanness) and social neighborhood (e.g., relationship and social network). Results show that residents were mostly satisfied with their neighborly relationships, but were least satisfied with the sizes of spaces within the neighborhoods. Furthermore, housing unit satisfaction attributes and the social features of the neighborhood; the cleanliness and layout, and utility provision, as well as neighborhood recreational facilities, emanated as top three predictors of satisfaction with residential, amongst the residents. Moreover, they stated that governments of developing countries ought to improve physical environment quality and social networks, within these communities.

Ornelas et al. (2020) selected the case of 42 old residential buildings, and considered the inhabitant's needs and expectations with the dwellings and the neighborhood areas that located in Portugal's historical center of Porto. Moreover, from residential satisfaction aspects they selected the parameters such as residents' perception from physical characteristic of buildings (e.g., thermal comfort, accessibility to buildings and stairwells), residents' perception of neighborhood area (e.g., access, security, equipment, facilities, and neighborhood network) for the evaluation of the case study.

According to the studies mentioned above, studies have mainly investigated residential satisfaction in old settlement, old dwelling, renovated historical blocks, traditional core areas and historic neighborhood. Table 9 shows the summary of determinants of residentials satisfaction studies.

Table 9. Selected Factors of Residential Satisfaction in Historic Areas

References	Selected factors
Bonnes et al. (1991)	• Urban planning (proximity to the city center, building density, adequate street plan, presence of green) • architectural (uniformity, heterogeneous, non-modernity of quarter, lack of artistic appeal) • human feature people (crowding, heterogeneity, non-friendliness, deviant youth, cordiality, relations with neighbors, intrusiveness, dormitory neighborhood) • way of life (livable and ideal neighborhood, traffic, security, walking); functional feature schools (educational services and school building) • commercial (shops, libraries and book shop) • sports (sport facilities, green for sport activities) • cultural (cultural centers, meeting place, interesting point) • leisure (cinemas, night-time bars) • transport (metro and bus services) • health (hospitals, homes for aged)
Türkoğlu (1997)	• Size and physical condition of the dwelling (size of spaces, total usable area of the dwelling, dwelling plan, overall comfort, quality of construction) • accessibility to (city center, work place, health service shopping facilities) • municipal services (trash collection and street lighting) • existence and maintenance of (social, educational facilities, sports, recreational, play grounds, green areas, elementary schools)

	• physical and social environmental (noise, crowding, air pollution, safety) • climatic control of the dwelling (day light, ventilation, insulation from the cold) • relations to the neighbors.
Ogu (2002)	• Housing (condition, privacy, roofing condition, wall and floor materials, number of rooms, toilet facility) • environment (neighborhood condition, access to water supply, access road, storm water drains, maintenance, collection of refuse, street lighting) • Tenure
Jiboy (2004)	• Housing quality attributes: (availability of electricity and water supply; waste disposal facilities; duration/frequency of disposal, drainage system disposal/condition; road network condition; availability of social infrastructure; number of sleeping rooms; building design; likes and dislikes the living spaces; adequacy of (building spaces, room sizes and facilities); need for modification of building space; conditions of building elements/parts; overall building environment; neighborhood interaction)
Phillips et al. (2005)	• Interior dwelling characteristics (indoor lighting, crowdedness, temperature, ventilation, security devices, stairs, lift/escalator, security/management, special facilities); • Exterior dwelling characteristics (lighting in public spaces; green areas/parks, recreational or sitting & rest areas, passages, subways, road crossing/traffic density; management and security, air pollution, noise pollution, social class of residents.
Erdogan et al. (2007)	• Living conditions • physical surrounding • social relations • performance of the local authorities
Lovejoy et al. (2010)	• Attractiveness (appearance, level of upkeep, variety of housing styles in the neighborhood)

	• quiet (quiet and level of car traffic on neighborhood) • liveliness (interaction among neighbors; diverse neighbors in terms of ethnicity, race, and age) • safety (walking, low crime rate, kids to play and quiet neighborhood) • mixed-use (distance to shopping area, nearby community center, parks and open space) • good infrastructure (sidewalks, street lighting and parking area)
Baeissa and Hassan (2011)	• Quality of interior space (dining area, bedrooms, bathrooms, corridor, storage, courtyard and balcony, rooms layout).
Kamaruzzaman et al. (2011)	• Building (smell, colors, freshness, attractiveness of the room, humidity and noise level, ventilation and daylight, appearance of the building, management, privacy, amount of working space, building in general, electric lighting
Temelová and Dvořáková (2012)	• Access to local facilities (food, drugstore, supermarket, prices) • public space and safety (recreation, social, availability of outdoor relaxation, accessibility to parks and green spaces, feeling safety during day time, crime at night) • social support (attachment, social interaction, supportive relationship from neighbors to transport and shopping) • housing and residential stability (living cost, affordability).
Kahraman (2013)	• Architectural features, size and quality of the house • interior features (construction material, colors, toilet, furniture) • functionality of the house (room for children and guests, storage, size of kitchen, balcony, appropriateness of the house for washing and beating carpets and wool beds) • location (proximity to workplace and urban services) • social features (proximity to neighbors and relatives) • economic features (affordability of the house and being the owner).

Zhang and Lu (2016)	• Physical environment (bedroom condition, building quality, indoor sunshine and ventilation, noise, sanitation, green space); • neighborhood amenities (commercial facilities, shops, public facilities, bus stops, recreational and gym facilities); • Social environments (social network, interaction, relation, neighborhood culture, gathering with friends, sense of safety/ security)
Jiang et al. (2018)	• Housing (floor, size, bedroom next to main road, non- shared kitchen and bathroom, technical quality, property right) • environment (distance to school, shops, shopping mall, health center, recreation and metro stop, bus stop, infrastructure, green type, walkability) • historic atmosphere and tourism (historic building, historical environment) • neighborhood relationship (meeting neighbor, known and familiar neighbors community activities, self-organized activities, management, safety) • work (commuting time, job) • economic (house and rent price, family income)
Adewale et al. (2019)	• Housing characteristic (physical characteristic, location of kitchen, bathrooms and toilet facilities, housing type, spatial relationship, number and size of bedrooms, privacy within the dwelling unit) • services (electricity and water supplies) • neighborhood environment (layout of neighborhood, communal facilities, cleanness of the environment) • social neighborhood environment (social characteristic, relationship, social network)
Ornelas et al. (2020)	• Physical characteristic of building (thermal comfort, accessibility to buildings and stairwells),

	• Neighborhood area (e.g., security, accessibility, equipment and facilities, neighborhood network)

As seen, Table 9 shows the determinants of residential satisfaction in historic area. Remarkably, several studies attempted to group the determinants of residential satisfaction into different dimensions (e.g., economic, social) to assess which dimension may have more or less impact on residential satisfaction. Following with the numerous studies which classified the determinants of residential satisfaction, this study used the similar dimensions and sustainability concept to classify the determinants of residential satisfaction of historic area to the economic, social, culture, and environment dimensions. Table 10 shows these potential factors of residential satisfaction under each dimension in historic areas

Table 10. Sustainability Performance Factors of Residential Satisfaction in Historic Areas

Dimensions	Potential Factors	Relevant References
Economic	Cost of living	Temelová and Dvořáková (2012)
	Housing cost (affordability of the house)	Temelová and Dvořáková (2012); Kahreman (2013)
	Tenure (owner/ rent/ shared right with government)	Ogu (2002); Jiang et al. (2017); Jiang et al. (2018)
	Being the owner	Ogu (1999); Kahreman (2013)
Social	Availability of social infrastructure within neighborhood (schools, health center, bus stop)	Jiboy (2004)
	Attachment to the neighborhood	Temelová and Dvořáková (2012)
	Social interactions with neighbors and neighborhood	Turkoglu (1997); Lovejoy et al. (2010); Temelová and Dvořáková (2012); Kahreman (2013); Zhang and Lu, (2016); Jiang et al. (2018); Adewale et al. (2019)
	Provision of recreational and sport facilities	Bonnes et al. (1991); Turkoglu (1997); Hudson et al. (1997); Ibem & Aduwu (2013); Ibem & Amole (2013)
	Social network	Zhang and Lu (2016); Adewale et al. (2019)
	Safety	Turkoglu (1997); Lovejoy et al. (2010); Temelová and Dvořáková (2012); Zhang and Lu (2016); Jiang et al. (2018)
	Accessibility to work place	Turkoglu (1997)
	Management rules and performance of local authorities	Erdogan et al. (2007); Jiang et al. (2018)
	Quality of internal design (courtyard and balcony, layout of the rooms)	Baeissa and Hassan (2011)
	Accessibility to social amenities (city center, shopping facilities, supermarket)	Turkoglu (1997); Temelová and Dvořáková (2012)
	Privacy within houses	Ogu (2002); Adewale et al. (2019)
	Diverse neighbors in terms of race, age and ethnicity	Lovejoy et al. (2010)
Culture	Access to cultural activities	Casakin and Reizer (2017)
	Adequate cultural center	Bonnes et al. (1991)
	Cultural heritage, antique and historical buildings, historic environment (preservation because of aesthetic value)	Thaman (2002); Makinde (2015); Jiang et al. (2018)
Environment	Dwelling environment (location, size and number of rooms, ceiling height, temperature, color, electric indoor lighting, ventilation, feeling of safety, relationship of space)	Bonnes et al. (1991); Turkoglu (1997); Ogu (2002); Jiboy (2004); Phillips et al. (2005); Kahreman (2013); Makinde (2015); Zhang & Lu (2016); Adewale et al. (2019)
	Neighborhood environment (noise level, street lighting, rest areas, road crossing/traffic density, crowdedness, attractive appearance of neighborhood, parking facilities, layout of the neighborhood, availability of outdoor relaxation, general cleanness of the environment)	Bonnes et al. (1991); Turkoglu (1997); Ogu (2002); Phillips et al. (2005); Lovejoy et al. (2010); Temelová and Dvořáková (2012); Zhang & Lu, (2016); Adewale et al. (2019)
	Construction materials	Turkoglu (1997); Ogu (2002); Kahreman (2013)
	Walkability/ side walk	Phillip et al. (2005); Lovejoy et al. (2010); Jiang et al. (2018)
	Building type	Adewale et al. (2019)
	Building density	Bonnes et al. (1991)
	Storm water discharge system	Ogu (2002)
	Electricity and water supply	Ogu (2002); Jiboy (2004); Adewale et al. (2019)
	Size/ nearby open spaces, green area	Phillips et al. (2005); Lovejoy et al. (2010); Temelová and Dvořáková (2012); Zhang & Lu, (2016); Jiang et.al (2018); Adewale et al. (2019)
	Waste disposal facilities	Jiboy (2004)

3.3 Sustainability Performance Factors of Residential Satisfaction in Historic Urban Quarter

It is essential to set up factors for potential sustainability performance for satisfaction with residential in historic urban quarter, within the view of sustainability. A recent study by Tanrıkul and Hoskara (2019) established a framework of regeneration for different agencies of government, professionals and experts, and institutions. The reviewed and analyzed components within the framework, were the resultant outcome of the confrontation of municipality authorities, presently, by problems of planning. The authors seek to reverse the decline of historic urban quarter by the sole channeling of attention onto the way governmental institutions, experts and agencies, can enhance physical structure, and how the economy of historic urban quarter establishes a void in the area's construct and social life of such areas. It has thus become imperative that the input of residents towards revitalization the sustainability of historic urban quarter, is long overdue.

Thus, to find the relevance of the numerous potential sustainability performance factors that impact satisfaction with the residential in historic urban quarter, an in-depth review of literature was conducted. Residential satisfaction in literature suggests that it alludes to more than physical satisfaction (Oktay et al., 2010; Sarıoğlu Erdoğdu and Özdemir, 2017) is made up of satisfaction gotten from adequacy/quality, aesthetic, and settings of the environment (Burby and Rohe, 1990; Van Kamp, 2003), the monetary value of dwellings (Varady and Carrozza, 2000; Boyle and Kiel, 2001), community satisfaction (Erdogan et al., 2007; Parkes et al., 2002), satisfaction derived in the housing environment, from urban services (Onibokun, 1974; Türkoglu, 1997; Kellekci and Berköz, 2006). Even though the general housing satisfaction is shaped

by these dimensions, its definition is subjectively and contextually dependent (Wiesenfeld, 1992; Lu, 1999). It is dependent on the present needs, conditions, and features of residents.

Comparing Table 7 and 10 indicates that there is a significant gap in the related academic literature, which attempted to investigated the residential satisfaction determinants in a historic urban quarter from the sustainability perspective. From one hand, Table 7 shows that various research have investigated the determinants of residential satisfaction mainly in private and public housing. On the other hand, Table 10 shows that although few studies have investigated the determinants of residential satisfaction in the traditional core, old settlement and historic blocks, there is no study found to examine determinants of satisfaction with residential satisfaction in historic urban quarters, through the consideration of the concept of sustainability.

Therefore, this study fills the gap by constructing a comprehensive determinant of residential satisfaction by combinations of Table 7 and 10 and based on the concept of sustainability. Table 11 shows all potential determinants of satisfaction with residential satisfaction in a historical urban quarter and are grouped the determinants into economy, social, culture and environment dimensions. This, to the best of knowledge, is the pioneer study which attempts to conduct this relationship.

Table 11. Sustainability Performance Factors of Residential Satisfaction in Historic Urban Quarters

Dimension	Sustainability Performance Factors of Residential Satisfaction	Relevant Reference
Economic	Cost of housing (affordable price for buy and rent)	Temelová and Dvořáková (2012); Kahraman (2013); Lin & Li (2017)
	Tenure options (owner/rent)	Ogu (2002); Zanuzdana et al. (2013); Ibem and Aduwu (2013); Jiang et al. (2017); Jiang et al. (2018)
	Cost of living within the housing area (good prices of services)	Temelová and Dvořáková (2012); Chen et al. (2016); Ibem et al. (2019)
	Job opportunities in the housing area	Ibem and Aduwu (2013); Lin and Li (2017)
	Creation of job in the form of home-based enterprise	Smit and Donaldson (2011)
	Being the owner	Ogu (1999); Kahraman (2013)
Social	Availability and access and to social infrastructure (schools, public transport, health center)	Jiboy (2004); Ikurekong (2009); Berkoz et al. (2009); Mohit et al. (2010); Ibem & Aduwu (2013); Sun et al. (2018)
	Attachment to the neighborhood	Temelová and Dvořáková (2012)
	Provision of recreational/ sporting facilities	Bonnes et al. (1991); Hudson et al. (1997); Turkoglu (1997); Ibem & Aduwu (2013); Ibem & Amole (2013) ; Zhang and Lu (2016)
	Social interactions with neighbors and neighborhood	Türkoğlu (1997); Lovejoy et al. (2010); Temelová and Dvořáková (2012); Kahreman (2013); Zhang and Lu, (2016); Jiang et al. (2018); Adewale et al. (2019)
	Access to social amenities (shopping centers, playground, city center, supermarket)	Turkoglu (1997); Temelová and Dvořáková (2012); Teck-Hong (2012); Ibem & Aduwu (2013)

	Housing near to the places of work and worship	Türkoğlu (1997); Aiello et al. (2010); Mohit et al. (2010); Clement and Kayode (2012); Kahraman (2013)
	Level of social mix in housing environment	Lovejoy et al. (2010); Jun and Jeong (2018); Chu et al. (2019)
	Quality of internal spaces of housing units	Qadir (1993); Ukoha & Beamish (1997); Baeissa and Hassan (2011); Ren & Folmer (2017)
	Privacy in the house	Ukoha & Beamish (1997); Ogu (2002); Baiden et al. (2011); Ibem & Aduwu (2013); Adewale et al. (2019)
	Housing contribution to the aesthetics of urban landscape	Jorgensen et al. (2007)
	Social networks	Vera-Toscano & Ateca-Amestoy, (2008); Zhang and Lu (2016); Addo (2016); Adewale et al. (2019)
	Security/safety concerns	Turkoglu (1997); Vera-Toscano & Ateca-Amestoy (2008); Lovejoy et al. (2010); Dekker et al. (2011); Temelová and Dvořáková (2012); Ibem & Aduwu (2013) Zhang and Lu, (2016); Jiang et al. (2018)
	Management rules and performance of the local authorities	Francescato et al. (1989); Erdogan et al. (2007); Ibem & Aduwu (2013); Jiang et al. (2018)
Cultural	Compatibility of housing form and design with resident's culture (interior layout and external dwelling form)	Rapoport (1969); Ozaki (2002); Jiboy (2009); Makinde (2015); Bashari et al. (2019)
	Availability and access to cultural facilities, cultural activities and cultural centers	Bonnes et al. (1991); Kellekci & Berkoz (2006); Bonaiuto et al. (2015); Casakin and Reizer (2017)
	Compliance of design of new houses with historical and cultural values	Makinde (2015)

	Housing heritage, antique buildings and historic environment (aesthetic and historic value)	Thaman (2002); Makinde (2015); Jiang et al. (2018)
Environmental	Housing density, Building type	Bonnes et al. (1991); Kearney (2006); Baiden et al. (2011); Makinde (2015); Adewale et al. (2019)
	Dwelling environment quality: number, location, natural ventilation and lighting and size of (bedrooms, bathrooms, living rooms); ceiling height, relationship of spaces, color, size of corridor, feeling of safety, temperature, structural safety	Bonnes et al. (1991); Turkoglu (1997); Ukoha & Beamish (1997); Kutty (1999); Ogu (2002); Jiboy (2004); Phillips et al. (2005); Coolen (2006); Braubach (2007); Amol (2009); Mohit & Azim (2012); Kahreman (2013); Ibem & Aduwu (2013); Jansen (2014); Makinde (2015); Zhang & Lu (2016); Ren and Folmer (2017); Adewale et al. (2019); Ornelas et al. (2020)
	Construction techniques and materials (floor, wall, ground)	Amerigo and Aragones (1990); Turkoglu (1997); Ogu (2002); Zanuzdana et al. (2013); Kahraman (2013)
	Neighborhood environmental quality: noise level, availability of thing to do, outdoor relaxation, rest area, parking facilities, night lighting, air pollution, attractive appearance of neighborhood, crowdedness, walkability/side walk, layout of the neighborhood, cleanness of the environment	Turkoglu (1997); Ogu (2002); Bonaiuto (2004); Phillips et al. (2005); Kellekci & Berkoz (2006); Berkoz et.al (2009); Lovejoy et al. (2010); Mohit & Azim (2012); Oktay et al. (2012); Temelová and Dvořáková (2012); Zhang & Lu, (2016); Türkoğlu et al. (2019); Adewale et al. (2019)
	Open Spaces and green areas (presence, care, maintenance)	Bender et al. (1997); Phillips et al. (2005); Kellekci & Berkoz (2006); Berkoz et al. (2009); Aiello et al. (2010); Lovejoy et al. (2010); Temelová and Dvořáková (2012); Zhang & Lu, (2016); Etminani-Ghasrodashti et

		al. (2017); Jiang et al. (2018); Ma et al. (2018); Adewale et al. (2019)
	Landscaping elements (plants, pavement, street furniture, man-made object, trees)	Sanders (1984); Rohe and Stegman (1994); Tan (2016)
	Storm water discharge system	Ogu (2002); Liu & Jensen (2018)
	Waste management system	Jiboy (2004); Maliene and Malys (2009)
	Main sources of power and water supply	Ogu (2002); Jiboy (2004); Mustapha et al. (1995); Berkoz et al. (2009); Zanuzdana et al. (2013); Etminani-Ghasrodashti et al. (2017); Adewale et al. (2019)

As shown in Table 11 several potential factors can impact residential satisfaction in a historic urban quarter and these determinants are grouped the into economy, social, culture and environment dimensions from literature review. In the following parts it will explains that how these determinants can impact residential satisfaction in historic urban quarters;

A) Economic Dimension

Several determinants such as “cost of housing”, “being the owner”, “tenure options”, “cost of living within the housing area”, “job opportunities in the housing area” and “creation of the job in the form of home-based enterprises” can impact residential satisfaction from economic dimension in historic urban quarters. Therefore, in below, it will explain how these determinants can impact satisfaction with residential in historic urban quarters.

“Cost of housing” and “being the owner” determinants can impact residential satisfaction in historic urban quarters from economic dimension. Based on Kahreman (2013) arguments, affordability of the house and being the owner of the house impact economic features of the house, resulting to increase satisfaction in old settlement. Besides, the economic dimension is made up of the cost/payment terms for a dwelling, as well as the income level of the residents, which has a general term as the affordability of an abode or dwelling. Zanuzdana et al. (2012) reported that higher satisfaction with housing is largely associated with higher levels of income, while low-income levels lead to decreased satisfaction with residence among residents (Fallahi and Mehrad, 2015). However, this factor may be more important in historic urban quarters as old houses may impose preservation costs on residents resulting to increase cost of housing and reduce the level of satisfaction.

The “tenure option” of dwelling is another determinant of residential satisfaction in historic urban quarters can affect satisfaction of residents. Some studies discovered that home ownership is the core determinant in the defining of the economic dimension of housing satisfaction (Varady and Carrozza, 2000; Baiden et al., 2011). According to White and Schollaert (1993) propose a model for home ownership and cognitive well-being and uncovered that owning a home raises the feelings of general well-being, satisfaction with the environment of residential dwelling, sense of pride and interaction with other residents in the community. However, in the case of historical blocks Jiang et al. (2018) found that tenure option is significantly influence to relocation of residents. Also, homeownership doesn’t need to pay for rent and may decrease cost of living resulting to higher satisfaction between residents.

“Cost of living within the housing area” is another determinant of residential satisfaction in historic urban quarters can affect satisfaction of residents. Fokkema et al. (1996) argued that cost of living is matter and a higher cost of living is the serious problem of residents in their housing area. Ibem et al. (2019) discussed that living a place with lower cost of living in terms of good prices and services corresponds with increasing residential satisfaction. This cost in not only limited to the regular daily costs and may increase by bearing indirect costs such as renovation of houses. Particularly, the indirect costs are likely higher in historic area due to existing old houses.

Several scholars found that “Job opportunities in the housing area” can impact residential satisfaction positively. Lin and Li (2017) argued that better job opportunities in another place trigger residents to relocate. Similarly, Böheim and Taylor (2002) uncovered that unemployed individuals seem more likely to move to

another residential area than employees. Consequently, it is possible to conclude that job opportunities can impact residential satisfaction in the historic urban quarters. Moreover, it is possible to expect that job creation via home-based enterprises due to contribution to the household economy impact residential satisfaction. Smit and Donaldson (2011) explained that the existence and/or upgrading of home-based enterprise can improve the quality of life and satisfaction of residents.

As a result of discussion above, these sustainability performance factors of residential satisfaction from economic dimension can increase residential satisfaction in housing areas particularly in historic urban quarters.

B) Social Dimension

Several determinants of social dimension such as "availability and access to social infrastructure", accessibility to social amenities", "provision of recreational/ sporting facilities", "social interaction with neighbors and neighborhoods", "level of social mix in housing environment", "social networks", "security/safety", "quality of internal spaces of housing unit", "privacy in the house", "housing near to the places of work", "housing contribution to the aesthetic" and "management rules and performance of the local authorities" can impact residential satisfaction in historic urban quarters. Therefore, in below, it will explain how these determinants can impact residential satisfaction in historic urban quarters.

Considering "availability and accessibility to social infrastructure", "access to social amenities" and provision of "recreational/ sporting facilities" in historic urban quarter may increase satisfaction. In the study, Tech-Hong (2012) recommended that housing developers in order to increase residents' satisfaction should be provide and integrate social infrastructure in the neighborhood. Based on the study by Roskruge et al.

(2012), social infrastructures are facilities that mostly service various needs and expectation of residents in daily life. Besides, Sun et al. (2018) mentioned that social infrastructure can be included such as schools, public transportation, and health care.

Availability and accessibility of schools from kindergarten till high schools can be increase residential satisfaction. Sun et al. (2018) stated that availability and accessibility of schools from kindergarten till high schools can reduce school travel time and it also create high satisfaction and better quality of life for residents. Moreover, Ahmadi-Javid et al. (2017) mentioned that accessibility to health care (e.g., hospitals, clinics, medical services) has an important factor in increasing residents' satisfaction level.

Furthermore, accessibility to social amenities (e.g., shopping centers, playground for children, supermarket) and provision of recreational/ sporting facilities is important to achieve a higher residential satisfaction. Teck-Hong, (2011) stated that it is reasonable to believe that social amenities obtainable within provide residents with daily requirements for increasing residential satisfaction. Besides, Zhang and Lu (2016) highlighted that sporting facilities impact residential satisfaction in traditional neighborhoods and lead to improve the standard of living for local inhabitant. Adewale et al. (2019) also found that recreational facilities is on the top of predictor of residential satisfaction in traditional core. Similar to prior studies, it can expect that these factors may also impact satisfaction level of residents who live in historic urban quarters as these factors are necessary and is considered as a primary need of residents for living in each residential area. In addition, since historic urban quarters are characterized by narrow streets, physical and social decay, and old infrastructure

(Jiboy, 2004), these potential factors may be more critical and may impact residential satisfaction significantly.

Furthermore, “social interaction with neighbors and neighborhoods”, “level of social mix in housing environment”, “social networks”, “attachment to the neighborhood” and “security/safety” are other potential factors which may impact satisfaction level of residents in historic urban quarters.

Several studies have exhibited that the neighborhood’s social interaction does not merely improve the general satisfaction with housing (Salleh, 2008; Mohit et al., 2010; Zanuzdana et al., 2013). Mesh and Manor (1998) stated that local social interaction (e.g., friends and neighbors and good relations) is instrumental in the development of emotional towards a place resulting a higher satisfaction stronger attachment in a community. Since historical urban quarters are surrounded by physical boundaries, the social interactions are more likely higher and the relationship between social interactions and satisfaction can be more significant.

Moreover, based on the arguments (Musterd and Andersson, 2005; Joseph et al., 2007), the level of social mix in housing area can increase the level of residential satisfaction. As they argued, the higher level of social mix corresponds with increasing urban attractiveness and decreasing distressed neighborhoods. Higher mixed habitation such as mix of incomes and social backgrounds (e.g., ethnicity, age) can enhance social integration in a community, which followed by higher level of residential satisfaction.

Consequently, Lovejoy (2010) confirmed that a higher social-mixed lead to higher residential satisfaction in traditional environment. Since historical urban quarters is threatened by physical and functional obsolescence, contains very old buildings, and undesirable environment diminishing attractiveness, residents have less tendency to live in historical area, resulting to reduce social mixed and residential satisfaction subsequently. Therefore, it may expect that social-mixed is important factor and impact residential satisfaction in historical urban quarters.

Similarly, Adewale et al. (2019) argues that the quality of social network, serves as one of the core factors that avail the enhancement of satisfaction with the residential environment in traditional core areas. Bolin et al. (2003) mentioned that a social network may, peculiarly in stressful times, provide the persons with support, emotionally.

Parkes et al. (2002) and Caldieron (2011) also stated the presence of a good social network in the neighborhood which avail social support, baby-sitting, and food sharing, experience and materials, can increase residential satisfaction levels. Since historical urban quarters are characterized by narrow streets, pedestrian-friendly streets and human scale, it may expect that social network may be more pronounced in historical area, which followed by higher level of residential satisfaction.

Lovejoy (2010) also found that perceptions of safety of neighborhoods like (low rate of crime, safe neighborhood for walking, safe conditions for kids' outdoor play) is important factor of residential satisfaction in traditional environment. Turkoglu (1997) highlighted that residential satisfaction level is lower in the traditional area due to the lack of safety. Similarly, Temelová and Dvorˇáková (2012) suggested that, residents

have lower satisfaction due to night-time safety in historical core. Therefore, having a such perception and concern about safety leads residents to have lower satisfaction level in historic urban quarters.

Considering other social determinants, “quality of internal spaces of housing unit” and “privacy in the house” maty impact residential satisfaction. Internal spaces of housing unit can be such as courtyard, balcony, general layout of houses. Onibokun (1974) mentioned that higher quality of internal spaces corresponds with increasing residential satisfaction levels. In fact, higher quality of interior spaces and arrangement can lead to make social interaction more easily between residents in the houses. However, houses in historic urban quarters have relatively poor quality and small internal spaces than houses in non-historical area and this factor may cause to decrease satisfaction levels.

Focusing on the “privacy in the house” factor, Ukoha and Beamish (1997) found that housing inhabitants who lived in houses which were self-contained, attained the most satisfaction due to specific features like room privacy. Baiden et al. (2011) and Ibem et al. (2019) also found that privacy in the dwelling units is significant factor of residential satisfaction and a lacked of privacy perceptions of residents about a home leads to decrease satisfaction levels. However, as houses in historic urban quarters are generally smaller than those of modern buildings, residents may have lower required privacy which followed by decreasing satisfaction levels.

Furthermore, other factors such as “housing near to the places of work and worship”, “housing contribution to the aesthetic” and “management rules and performance of the local authorities” may impact residential satisfaction. The studies (Mohit et al., 2010;

Clement and Kayode, 2012; kahraman, 2013; Ibem and Aduwu, 2013) suggested that locating houses near to the areas of working and worship impact residential satisfaction. This can be explained by increasing social interaction in neighborhood and more comfortability of residents by spending less time to commute. Particularly, in historical urban quarters due to existing many worship places (e.g., mosques, churches), it expects that the nearness of houses to worship places may increase residential satisfaction.

From "housing contribution to the aesthetics of urban landscape" Jorgensen et al. (2007) evaluated social effects in the housing to reveal residents' perceptions of the aesthetic of urban landscape aspects and its contribution to satisfaction with residence. Their result reveled that most inhabitants liked their street's visual appearance, although they bore feelings which were both positive and negative towards its greenery and trees (the landscape). Particularly, historic urban quarters present the notion of aesthetic value such as, craftmanship, natural material, human scale, urban landscape. Also, if the contribution of housing to the aesthetics of the urban landscape (e.g., trees and greenery) allow residents to socialize with each other can increase individual psychology and positive feeling, relaxation in an area can resulting high satisfaction.

The "management rules and performance of the local authorities" impact residential satisfaction (Francescato et al., 1989; Erdogan, 2007; Ibem and Aduwu, 2013; Jiang et al., 2018). Especially, as historic urban quarters are culturally rich places, management rules (e.g., social) and performance of the local authorities to conduct social events or programs may lead to increase social interaction which followed by higher satisfaction levels.

C) Cultural Dimension

In addition to the economic and social dimensions, the factors of cultural dimension such as "compatibility of housing form and design with resident's culture", "availability and access to cultural facilities, cultural activities and cultural centers" "housing heritage, antique buildings and historic environment" and "compliance of design of new houses with historical and cultural value" may impact residential satisfaction. Bashari et al. (2019) mentioned that cultural factors influence people expectations, perceptions, and residential satisfaction. Therefore, in below, it will explain how these determinants can impact residential satisfaction in historic urban quarters.

Considering "compatibility of housing form and design with resident's culture" (e.g., interior layout and external dwelling form), Jiboy (2009) stated that housing designs should be integrated with the cultural context of the people in order to increase satisfaction. Bashari et al. (2019) also mentioned that the inhabitants were not satisfied when design of housing does not reflect their culture.

However, as houses in historic urban quarters have cultural values and have specific physical attributes of inside and outside of the building, residents have relatively less flexibility to modify their housing forms and designs to their culture than modern area. Houses in historic urban quarters should follow with standard renovation rules, which allow residents to modify their houses to their culture to the certain extent.

Several scholars stated that "availability and access to cultural facilities, cultural activities and cultural centers" impact residential satisfaction (e.g., Bonnes et al., 1991; Kellekci and Berkoz, 2006; Bonaiuto et al., 2015; Casakin and Reizer, 2017). Mathews

(2010) and Wu and Wall (2017) mentioned that cultural facilities (e.g., libraries, museums, and religious sites) by providing opportunities for meetings and interactions with residents and enhancing relationships in families, impact social life of residents and satisfaction levels significantly. Especially, in historic areas where cultural facilities are relatively more accessible and available, the chance of participation of the residents that reside in the surrounding historic urban quarters is higher and residents may have satisfaction levels. Furthermore, as historical urban quarters have distinctive cultural characteristics, residents who live in historical area have relatively more identity and attachment to their places, which leads to increase satisfaction levels of residents subsequently.

The other determinants of cultural dimension which is "housing heritage, antique buildings and historic environment" impact residential satisfaction. Particularly, the existing several housing heritage and antique buildings in historic urban quarters can help to reinforce cultural values and provide relatively more opportunities to residents to increase awareness about their culture. Therefore, it's more likely to expect that residents have higher satisfaction levels in historical areas due to the cultural impact.

Lastly, the other determinant of cultural dimension which is "compliance of design of new houses with historical and cultural value" impact residential satisfaction. Riza and Doratli (2015) stated that new buildings in historic areas should be contributed to the physical character and cultural historic settings to avoid reducing residents' sense of identity and place. Therefore, it's more likely to expect that residents have higher satisfaction levels in historical areas which new buildings have more compliance with the respected historical and cultural values.

D) Environment Dimension

Several determinants of environment dimension such as “dwelling environment quality”, “neighborhood environmental quality”, housing density”, “building type”, “construction techniques and materials”, “open spaces and green areas”, “landscaping element”, “storm water discharge system”, “main sources of power and water supply, “waste management system”, may impact residential satisfaction. Therefore, in below, it will explain how these determinants may impact residential satisfaction in historic urban quarters.

The “dwelling environment quality” including attributes of (number, location, natural ventilation, natural lighting and size of (bedrooms, bathrooms, living rooms); ceiling height, temperature, relationship of spaces, color, size of corridor, feeling of safety, structural safety) is other important factor of residential satisfaction (e.g., Turkuglu, 1996; Ukoha and Beamish, 1997; Kahreman, 2013, Adewale et al., 2019). Therefore, in below these attributes will explain more.

According to the perception of residents, adequate number of bedrooms per person, adequate ceiling height and size of spaces (e.g., living rooms, kitchen), and satisfaction with location of spaces in the houses are important factor and impact residential satisfaction. However, size of spaces and ceiling height in houses of historic urban quarters are relatively smaller and inadequate than non-historical buildings, which followed by reducing satisfaction levels. Besides, unlike of flexibility in non-historical buildings, residents have a limitation to change the layout and color of houses and renovation typically should be performed based on international standards (ICOMOS Washington Charter, 1987) in order to preserve the cultural values. Hence, residential

dissatisfaction may be occurred if the changes are not based on residents' perception fully.

The prior studies (e.g., Mohit et al., 2010; Mohit and Nazyddah, 2012; Makinde 2015) also stated that size of corridor impact residential satisfaction. Especially, it expects that residents living in historic urban quarters may have lower level of satisfaction about the size of corridor (length and height) as historic houses have relatively narrower corridor.

Following the study by Braubach (2007), feeling of safety in the houses is a powerful indicator of residential satisfaction and the lack of safety impact satisfaction levels negatively. The author argued that feeling of having protection and being protected from external influences while at home, is extensively associated with sleep disturbance and more strongly associate with mental and well-being. Similarly, it expects that higher feeling of safety in historic houses may increase residential satisfaction levels in the historic urban quarters.

The study by Ornelas et al. (2020) also assessed residential satisfaction by considering the factor of structural safety such as stable roof conditions, and of the walls, the ceilings, the pavements and stairwells) and found that residential satisfaction is lower in most of the historic buildings due to having poor structural safety conditions. Since, most of houses in historic urban quarters identified by very poor structural conditions, therefore, it expects that residents have lower satisfaction levels with the structural conditions.

The “neighborhood environmental quality” including attributes such as noise level, availability of thing to do, outdoor relaxation, rest area, attractive appearance of neighborhood, parking facilities, night lighting, walkability/side walk, layout of the neighborhood, cleanness of the environment and crowdedness is other important factor of residential satisfaction (e.g., Turkoglu, 1997; Ogu, 2002; Jiboy, 2004; Ren and Folmer, 2017; Adewale et al., 2019). Therefore, in below these attributes will explain more.

Mridha and Moore (2011) stated that the level of traffic noise and parking availability are critical factors for residents and a higher generated noise by traffic and lack of parking areas lead to lower satisfaction level of residents. Zhang and Lu (2015) also explained that after the traditional neighborhood transform into a tourist attraction, new problems such as noise pollution and parking availability lead to decrease residents’ satisfaction levels. As historic urban quarters threats by insufficient parking areas and residents may experience higher traffic noise by increasing number of tourists, therefore, it expects that residents have lower satisfaction levels with the traffic noise and parking availability in historic areas.

Oktay et al. (2012) argued that neighborhood quality such as availability of things to do and attractiveness are important in residents’ everyday life and impact residential satisfaction in the historic core area. Availability things to do can be contact to nature, light sports, relaxation and rest purposes, theaters, cinemas, and various pubs increase residents’ quality of life and satisfaction. As historic urban quarters threats to diminish attractiveness and things to do, therefore, it expects that residents have lower satisfaction levels with the availability of things to do and attractiveness in historic areas.

Sam et al. (2012) considered that the adequate of environment night lighting impact residential satisfaction. Sufficient night lighting for the environment leads to decrease the rate of crime and feeling safety of residents, resulting in higher quality and satisfaction levels. Also, Jiang et al. (2017; 2018) reported that residential satisfaction can increase by providing more convenient walking environment and friendly for pedestrian in historic block. As historic urban quarters have pedestrian-friendly streets, therefore, it expects that satisfaction levels may increase with having a good quality of walking environment.

Several authors also assessed residential satisfaction from layout and cleanliness of neighborhood (e.g., Ge and Hokao, 2006; Mridha and Moore, 2011; Adewale et al., 2019). Mridha and Moore (2011) stated that the proper, effective, and regular cleanliness of neighborhood is important for residents. As historic urban quarters have distinctive layout characteristics and boundaries, the level satisfaction/ dissatisfaction depends on the perceptions and expectations of residents from layout of neighborhood.

Bonnes et al. (1991) also defined that crowdedness links to density of population living in the environment. Temelová and Dvorˇáková (2012) found that residents who live in the historic core area are very sensitive to crowding of public spaces, and the other people's presence (such as tourists) which disturbs them by undermining their satisfaction with their favored places of relaxation in these historic core areas. Similarly, it expects that residents are less satisfied by increasing crowdedness in historic urban quarters.

Moreover, the "housing density" and "building type", "construction techniques and materials", "open spaces and green areas", "landscaping element", "waste

management system", "storm water discharge system", and "water and power supply sources" are other important factor of residential satisfaction. Therefore, below these attributes will explain more.

Kearney (2006) studied the impact of development forms in housing on residential satisfaction from the "housing density" perspective. The author found negative feelings towards high density, caused by the existence of view block and unattractive cityscape due to the high-density of development. As historic urban quarters are man-made environments and human scale, having lower housing density may result in higher satisfaction levels.

Besides, Makinde (2015) stated that residents' satisfaction levels depend on different types of buildings such as semidetached, terrace house, detached houses and flats. Lu (1999) argued that residents in the U.S. preferred to a detached home in their area. Mohit and Mahfoud (2015) found that residents who reside in double-story terrace house type are dissatisfied. Consequently, as historic urban quarters have different house types (e.g., semidetached/detached), the level of satisfaction depends on residents' perceptions about the building types.

The study by Zanuzdana et al. (2013) also found strong relations between the materials of roofing, flooring and walls, and the satisfaction with housing. Besides, Kahraman (2008) found that residents have lower satisfaction levels with the houses with low construction and material quality. As houses in historic urban quarters have old material and construction, therefore, it expects that residents may have lower satisfaction levels with the construction and material quality. Especially, residents of historical urban quarters, for renovating their houses, should use original and local

materials to protect the cultural characteristics of places. This may lead to residents spending higher renovation cost, followed by the lower satisfaction levels.

The factor of “open spaces and green areas” may impact residential satisfaction. Zhu et al. (2017) stated that open spaces (e.g., parks, public plazas, river) and green areas increase people's psychological perception and lead to increase satisfaction degree of residents. Adewale et al. (2019) found that residents are least satisfied with the sizes of open spaces in traditional core area. They mentioned that size of open spaces promotes decent and healthy living environment, resulting to higher satisfaction levels. Also, Temelová and Dvorˇáková (2012) recommended that open spaces and green areas which are furnished with enough benches can increase residential satisfaction in the historical core. As historical urban quarters have relatively fewer open spaces and green areas than non-historical areas, it expects that residents are more likely dissatisfied with open spaces and green areas in historic areas.

The factor of “landscaping element” impact residential satisfaction. Generally, well-design, healthy quality and adequate landscaping elements (e.g., pavement, trees, street furniture, man-made objects, vegetation) increase residential satisfaction. Also, as Rohe and Stegman (1994) stated, sidings and landscaping elements affect housing well-being and satisfaction. Sanders (1984) mentioned that grasses and trees make up most of the vegetative configuration, especially if viewed at land usage scale within neighborhoods, can increase the level of satisfaction. Also, in historic urban quarters, it should be preserving landscaping element but with great quality, it can increase the level of residential satisfaction.

The factor of “storm water discharge system” may impact residential satisfaction. Ogu (2002) showed that storm-water drains can impact residential satisfaction in traditional area. Also, the author found that improvements in storm-water drain is mostly required in the area. Consequently, it expects that residents who live in historic urban quarters are more likely satisfied with better storm water discharge system as historic urban quarters have relatively old storm-water drain system than non-historical areas.

The factor of “waste management system” may impact residential satisfaction. Waziri et al. (2013) reported that residents are generally dissatisfied with waste management services. Mridha and Moore (2011) stated that the effective, proper, and regular collection and disposal of garbage are important for residential satisfaction. Consequently, it expects that residents who reside in historic urban quarters are more likely satisfied with better waste management system.

The factors of “main sources of power and water supply” impact residential satisfaction (Ogu, 2002; Jiboye, 2004; Adewale et al., 2019), This factor is essential in every residential area and the shortage can reduce the level of satisfactions. Especially, since historical urban quarters threats by technical infrastructure, the supply power and water are relatively performed more ineffectively, which followed by decreasing residential satisfaction.

3.4 Conclusion of the Chapter

As argued in this chapter, the characteristics of historic urban quarters have a significant impact on the potential factors of residential satisfaction. Figure 10 demonstrates conclusion of the chapter three.

As presented in Figure 10, to evaluate residential satisfaction in historic urban quarters, the characteristics of historical environment (left side of the chart) should be considered as it impacts the potential factors of residential satisfaction (right side of the chart). In other words, the historical environment settings by effecting on sustainability performance factors impact the level of residential satisfaction either positively or negatively. For instance, having the historic buildings and cultural heritages likely strength the positive effect on cultural dimension of residents' satisfaction level. In contrast, residents' historical buildings may not meet the contemporary needs of residents, resulting to an increase in the difference between actual and aspiration of residents and decrease in the level of satisfaction.

In summary, to evaluate residential satisfaction in historic urban quarters, it should be considered both historical environments settings and characteristics and also the sustainability performance factors. Notably, ignoring the historical environments settings and characteristics leads to evaluate residential satisfaction inaccurately.

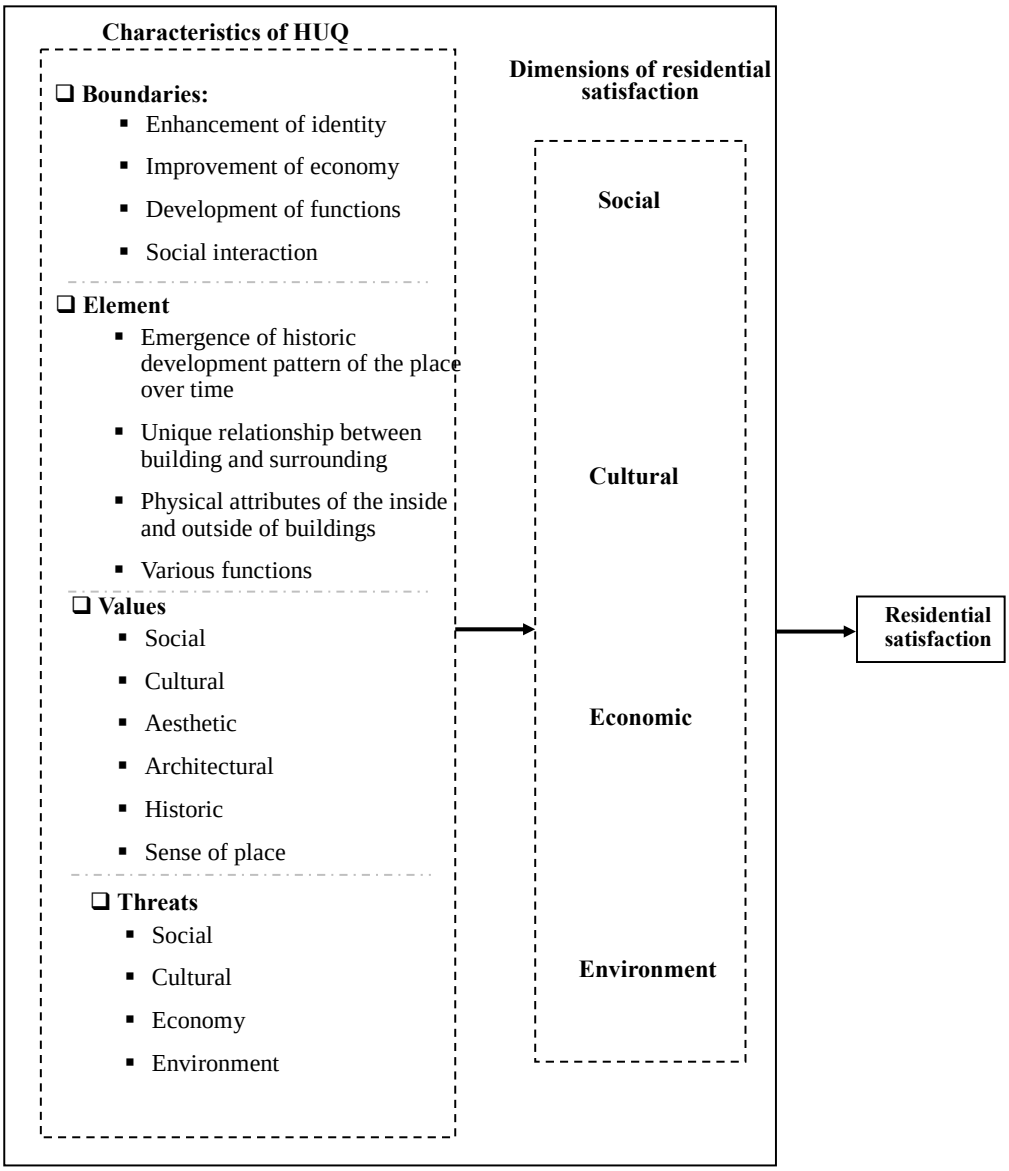


Figure 10. Conclusion of the Chapter Three.
Note: The potential factors of the social, culture, economic, and environment dimensions are reported in Table 11

Chapter 4

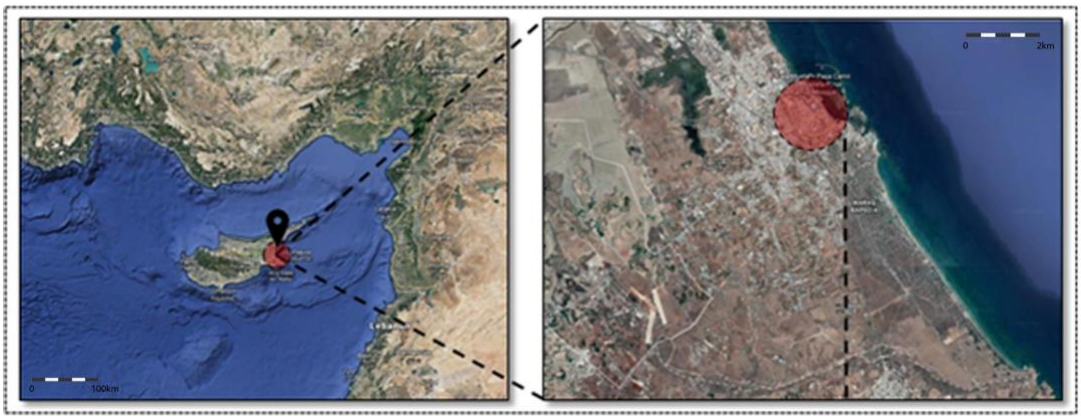
RESIDENTIAL SATISFACTION EVALUATION

This chapter will explain the Walled City of Famagusta, which selected as a case study and the urban development, evolution and condition of houses in the Walled City respectively. Furthermore, it will explain the need of revitalization of the Walled City and also UNDP revitalization program. Secondly, it will explain the methodology steps to establish determinants for enhancing residential satisfaction in historic urban quarter of the Walled City. Third, it will explain about data collection and present the evaluations. This study evaluates the questionnaire data set to find the vital factors of residential satisfaction in historic urban quarter of the Walled City, Famagusta based on perceptions/expectations of residents.

4.1 Case Study Area- The Walled City, Famagusta

This exploratory thesis was a case study of Famagusta's Walled City, Northern Cyprus, which has been declared to be a "conservation area" since 1989, and is considered to be a historic urban quarter (Doratli et al., 2007). Famagusta is the Turkish Republic of Northern Cyprus' second-largest city, according to the TRNC Prime ministry. It is a historically core city and also a home to a harbor, and served as an essential center for trade and tourism, as well as being a regional center before the division of the island of Cyprus division, due to the conflict of the 1970s. The island's political division in 1974, into two, following the intervention by Turkey, resulted to the migration of Turkish and Greek Cypriots respectively, from the south to the north, and vice versa (Hoskara et al., 2009).

Cyprus is the Mediterranean's Sea third largest island, and is located 60 km south of Turkey's coast, 96 km west of Syria's coast, and 322 km from Greece's (Rustem, 1987). With a positioning on the eastern coast of the northern part of the island of Cyprus, the Walled City is a historic residential district, and used as a case study. The Walled City is located in Famagusta, which is the second biggest city in Northern Cyprus. The location of Famagusta is shown in Figure 11 (a, b, c), as well as the Walled City's historic residential district, respectively. As Figure 11 (c) shows via dashed lines, there are fortifications surrounding the Walled City; such fortifications are comprised of masonry walls of the Venetian-era, continuously around the settlement's surrounding.



(a) Location of Cyprus (b) Location of Famagusta

(c). Location of Walled City

Figure 11. Geographical Location

Source: Extracted and modified from Google Earth (2018)

4.1.1 Urban Development of The Walled City

In the Mediterranean region, Northern Cyprus is home to rich and strong civilizations (Oktay et al., 2010 and Oktay et al., 2012); it is home to various housing forms, architectural styles, and residential patterns; with each possessing its unique identity (Hoskara et.al., 2009). According to Mason et al. (2012) the Walled City possesses features such as low-rise dwellings, narrow streets of unique organic urban character, as well as most of its buildings attached to each other, which developed across various historical time periods. The pioneer example of its architecture, is recorded to date back to the Neolithic Period, which has influences and impacts the society's cultural features (Dincyurek and Turker, 2007).

The history and urban development of Famagusta's Walled City, unfolds throughout various historical periods. During each period, the Walled City was characterized by significant development. For instance, during the Lusignan period (1192-1489), churches and fortifications were built. On account of its natural harbor, Famagusta become an important center. Hence, a fort was erected for city protection (Doratli et al., 2007; Mason et al., 2012). A lot of public and religious buildings were also constructed during this era. Included in the city were many races and colonies of Near East (Luke, 1965), and the city has been recognized as a hub of trading ports, with the construction of over three hundred churches and the activation of social life. The Venetian period (1489-1571) saw great strengthening of its walls. This turned Famagusta into a military-based and well-fortified city. Also, in this period the administration of Cyprus concentrated much more in changing the nature of the city's settlements layouts and physical appearance, to the militaristic position (Gunnis, 1973).

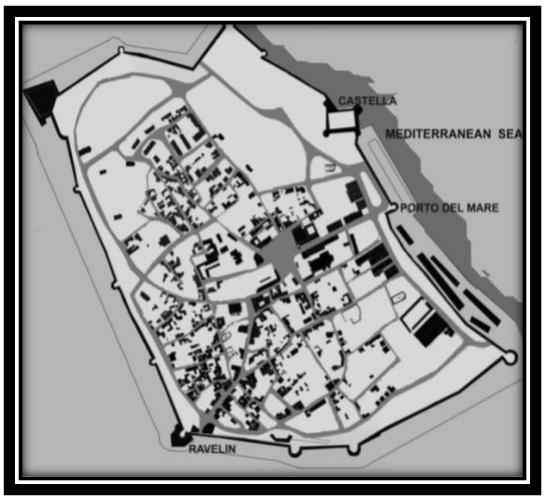
In the Ottoman period (1571-1878), the Ottoman attitude towards the Walled City impacted its resident's life; the resultant spatial and physical forms led to the continuation of urban patterns similar to the Venetian period (Doratli et al., 2007). The city was characterized by extreme low population, with few kitchen gardens and empty spaces, by the end of the era of the Ottomans (Luke, 1965); Turkish coffee shops surrounding the central piazza; a small bazaar and newly designed market (Cobham, C. D., 1969; Numan et al., 2000). Luke (1965) reported that during the British era (1878-1960) new construction was undertaken on empty lands or in place of demolished weak buildings with no regards to traditional pattern and features. In the short-lived Republic of Cyprus era (1960-1974), the Walled City was characterized by neglect and no meaningful development took place (Doratli et al., 2003). These diverse

historical backgrounds enabled the Walled City to acquire some distinctive characteritics in housing form and urban pattern. According to the above explanation Figure 12 (a, b, c, d) shows the urban pattern developments in Lusignan, Venetian, Ottoman and British periods, respectively.

(a) Urban Pattern in Lusignan Period

(b) Urban Pattern in Venetian Period

(c) Uban Pattern in Ottoman Period



(d) Uban Pattern in British Period

Figure 12. Urban Pattern Development in Various Period
Source: Doratli et al. (2003)

Today, there is a perception that the system of planning in North Cyprus, is resulting to an unstable and disorganized situation, leading to disappointed feelings, and physical and social environmental quality of residence. The regulatory bodies meagre contributions, and of national policies, targeted towards achieving more modern concepts of urban planning and growth, like compact cities approach, ecological concerns, sustainable development, ecological concerns, and many others, including the inadequate control in development over rapidly attaining urbanization, in rural and urban settlements. These inadequacies result to the two general and core negative

inputs in urban environmental developments, and specifically, the residential environments (Hoskara et al., 2009).

Besides the negative planning approaches on the Cyprus scale, there are certain positive situations in the Famagusta. Today, the Walled city still keeps its traditional identity including narrow organic streets with, human scaled buildings, and many monumental and historic buildings (Vehbi and Hoskara, 2007). Furthermore, they stated that considering the functional features of the Walled City, it presents a character of-mix-use, with shops, houses, offices, cafes, and coffee shops. Also, there are many unused, deteriorated and vacant shops and houses in the area as well (Vehbi and Hoskara, 2007). Figure 13 (a, b) illustrates in specific detail, the locations and periods of construction of some important historic monuments (e.g., cultural heritage) of the Walled City.

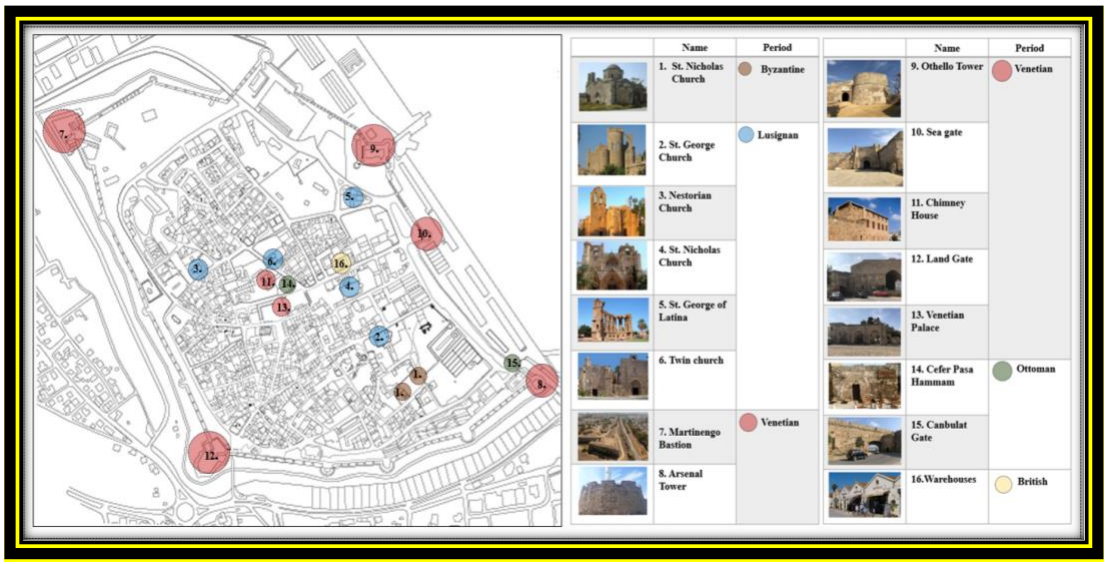


Figure 13. Locations and the Periods of Historical Monuments
Source: Author (2018)

Over time, many architectural treasures in the historic Walled City have deteriorated, been damaged, or suffered much neglect. However, some projects and programs[2] were specifically initiated for Famagusta Walled City aiming to improve the infrastructure and preserve the cultural heritage. A good example was the European Union's intervention funded through the UNDP-PFF[3]. It was a revitalization plan (2004 and 2006) for Famagusta's Walled City aimed at improving the livability for both residents and visitors through rehabilitation of traditional public spaces. In addition, it aspired to preserve the original urban city pattern.

After just a few years, a new UNDP-PFF project upgraded the Desdemona promenade between the Othello Tower and Arsenal Tower with pedestrian amenities, area beautification, and features to highlight the historic elements. Figure 14 (a, b) shows the UNDP conservation project for the wall between Sea Gate and Othello Tower and also between Othello Tower and Arsenal Tower, respectively. In addition to infrastructure projects, a program was launched between 2012 and 2017 to support additional phases4 of conserving cultural heritage monuments considered to be greatly important in Cyprus.

Specifically, the project intends to preserve highly important (as per agreements of the bi-communal *Technical Committee on Cultural Heritage* in Cyprus) cultural heritage sites through both conservation and emergency measures. *The Technical Committee on Cultural Heritage* identified 'highly important' sites as those in such states of

[2] See http://www.cy.undp.org/content/cyprus/en/home.html
[3] *United Nations Development Programme-Partnership for the Future*.
[4] Over the program's duration, the conservation of the following cultural heritage sites were completed (e.g., Mustafa Pasha Mosque, Ravelin /Land Gate, Martinengo Bastion, Famagusta walls between Arsenal and Sea Gate, Othello Tower) and the following are ongoing (e.g., Carmelite/ St Mary of Carmel church).

deterioration that they threatened public safety and/or urgency was required to preserve what remained of the structure.

a: UNDP Project Between Sea Gate and Othello Tower

b: UNDP Project Between Othello Tower and Arsenal Tower
Figure 14. UNDP-PFF Infrastructure Projects
Source: Author (2018)

In Famagusta, the historic Walled City's decaying character is another issue. Despite the Walled City's fortifications, its organic form, plus moat, it was pronounced to be an area of conservation under the new Town Planning Law (55/1989). The enacted measures although carried out for the sake of revitalization and conservation, have not inspired the establishment of a state of satisfaction, in terms of economic or cultural sustainability (Oktay and Rustemli, 2011). The obsolescence of buildings and area is made prominent in mismatches between services that the fabric offers, and the needs

seen through modern (Lichfield, 1988; p.25). Such mismatch might hold its source in the physical fabric. The fabric may be adapted to contemporary requirement through various forms of renewal: conversion, refurbishment, and restoration etc.

4.1.2 Evolution of Houses in The Walled City of Famagusta

Currently, housing of the Walled City is under the Lusignan (1192-1489), Venetian (1489-1571), Ottoman (1571-1878), British Period in two parts in Cyprus: First British Period (1878-1929) and Second British Period (1930-1960).

For instance, in the Lusignan period, the courtyard house becoming a permanent feature in building type growing in size and originally made by stone (Aliyu, 2009). Figure 15 demonstrates the sample of Lusignan houses which renovated during last years.

Figure 15. The Sample of Lusignan Houses
Source: Author (2018)

Venetian houses are very similar to Lusignan houses which made by stone too. The architectural character of the venetian period is that of Renaissance style (Perbillini, 1988). As the previous section mentioned, the walls surrounding the Walled City, greatly strengthened by the Venetians, but several buildings underwent damage, while

the Ottomans attempted to adapt some of the architectural monuments of the town (Mason et al., 2012). Figure 16 shows the sample of Venetian houses.

Figure 16. The Sample of Venetian Houses
Source: Author (2018)

Likewise, in the Ottoman period most of the buildings were generally built of bricks (Yildiz, 1996). They concentrated on constructing new modifications and structures, in this period, as well as transforming existing structures and buildings, via the addition of second floors. Overall, the architectural buildings of the Ottoman era expose a local and traditional quality, via the utilization of local building techniques and construction materials, which are not exhibiting, to a hefty degree, any outstanding artistic and architectural features (Doratlı et al., 2003). In the period of the Ottomans, stonewalls or adobe were predominantly the materials which were employed in façade buildings (Özay, 2005).

The housing's facade features were high windows, broad eaves, and carved doors. The housing style of the Ottoman Turks, evolved as a mannerism of housing, impacted by the Turkish culture (Pulhan and Numan, 2006). In this period, massive walls

surrounded the house garden, for the enhancement of privacy for house inhabitants (Pulhan and Numan, 2001). Accordingly, the bay window (cumba) and core entrances, are distinctive facade features of Cypriot houses (Pulhan and Numan, 2005). Figure 17 shows the sample of Ottoman house.

Figure 17. The Sample of Ottoman Houses
Source: Author (2019)

The Two-Part British period in Cyprus: First British Period (1878-1929) and Second British Period (1930-1960) (Ahmad, 2002). During the First British Period (1878-1929) for the preservation of the previously existing identity of buildings, in administrative and educational structures, high ceilings, dimensions, yellow stone, traditions and cultural parts of the locals, inner courtyards and pitched roofs continued to be in use (Fasli, 1997). Furthermore, new techniques and materials were first implemented in Cyprus. In the period of the British, doorways mimic Roman columns and have flat stone. For floor covering, marble and wood were used as materials (Dagli, 1990). One can express that the traditional Turkish House's bay window, replaced the balcony (which was a semi-open space) (Özay, 1998).

However, in the Second British period, Britain's political changes started to reflect on the buildings and colonial effects existed on the buildings (Fasli, 1997). Moreover, in this period buildings were built with the new structures and materials like reinforced concrete and concrete (Özay, 1998). Within this period, the building's construction system and materials were effective (Özay, 2005).

In the Turkish Republic of Northern Cyprus, the city continues to develop usage of concrete materials, and pursue the protection of existing identity (Öngül, 2012). Doratli et al. (2007) mentioned that to consider proportion of the buildings, which were built towards the end of British period onwards, they are in contrast in all architectural aspects to the traditional tissue. Figure 18 and 19 demonstrates the sample of British houses.

Figure 18. The Sample of British Houses
Source: Author (2019)

Figure 19. The Sample of British Houses
Source: Author (2019)

4.1.3 Housing Conditions in the Residential Environment of the Historic Walled City of Famagusta

Having examined North Cyprus' housing situation from a historic to more contemporary approach, one could define the challenges of residential development and housing, into two perspectives which are interrelated but separate: the housing sector's internal problems, and its effect on the cultural, physical, economic and physical environments (Hoskara et al., 2009). Therefore, these challenges imply that development trends in housing and the execution of planning in North Cyprus, are tilting towards practices for land-use and designs solutions, which are unsustainable.

In the Walled City, Famagusta, majority of the houses were linked directly and organically to the street, forming the semi-private place of communal meeting, extending at ground floor level from the house (Oktay, 2002). Moreover, most of the housing of Famagusta's Walled City, is in poor conditions and has small internal spaces (Doratli et al, 2007; Mason et al, 2012). On the other hand, there are many

vacant and deteriorated buildings together with a decrease in the local residents due to the un-contemporary building condition in the Walled City (Vehbi and Hoskara, 2007).

Also, Doratli et al. (2007) mentioned that a great deal of the identified buildings deemed as being in very poor structural condition are vacant and most of them are listed building. Buildings in excellent condition are those, which are built in relatively later periods (Doratli, 2002).

Presently, in the Walled City, five categories can be used to describe the features of the neighborhood, namely: 3-d framework of high density, historical/old, 1-2 storey houses (dominant courtyard houses), middle-to-high /low income and partial mixed-use (Oktay et al., 2009). Furthermore, houses typically have very small inner courtyards with a number of internal rooms, which open directly into the courtyard. In fact, there is no other private outdoor space in general, the street space is used as an extension to the houses and seen as public outdoor rooms (Önal and Oktay, 1998). Vehbi and Hoskara (2007) analyzed the facades of buildings in the Walled City, it's have been classified into three groups such as old buildings with old façade preserved, old buildings with less deteriorated or poor ones.

According to Oktay et al. (2012) the Famagusta's Walled City experienced numerous parts of negative social value. During the 1970s' armed conflict, this period was characterized with segregation, following the fleeing of the Greek Cypriots, and the seeking of refuge in the Walled City of Famagusta by Turkish Cypriots who remained. Additionally, outside the Walled City, developments are compelling its inhabitants economically, to relocate to the nearby districts, leaving mostly old and poor

immigrant population behind. The Walled City has been abandoned by many residents for suburban villas and apartments, newly constructed (Mason et al., 2012). Such relocations have resulted to a low sense of neighborhood or community, and have inspired studies to propose measures of revitalization and conservation (Doratli et al., 2004; 2007), and frameworks for processes of regeneration (Tanrıkul and Hoskara, 2019) for the historic urban quarter of Famagusta's Walled City.

According to the above explanations about the history of the Walled City, urban development and evolution of houses in various periods, this study selected the Walled City, Famagusta as the case study. The Walled City considers as a historic urban quarter and has distinctive characteristic, unique identity and distinctive boundaries, which clearly sets it apart from the rest of the city (Doratli, 2002). Also, it is too rich and valuable place in cultural heritages and has many historical houses in different historical periods.

Moreover, the selected case study presents mixed-use functions such as houses, offices, bars, restaurants and etc. Besides of these distinctive characteristics, some projects and programs[5] were specifically initiated for Famagusta Walled City aiming to improve the infrastructure and preserve the cultural heritage. A good example was the European Union's intervention funded through the UNDP-PFF[6]. It was a revitalization plan (2004 and 2006) for the Walled City of Famagusta aimed at improving the livability for both residents and visitors through rehabilitation of traditional public spaces. Furthermore, unlike the majority of historical environment,

[5] See http://www.cy.undp.org/content/cyprus/en/home.html
[6] *United Nations Development Programme-Partnership for the Future*.

the Walled City of Famagusta is still a place for residential, commercial and people lives there.

4.2 Methodology

4.2.1 Establishing Determinants for Enhancing Residential Satisfaction in Historic Urban Quarter of The Walled City, Famagusta

For establishing the factors for enhancing residential satisfaction in historic urban quarter of the Walled City, this study proceeds four stages as follows.

First, as shown in chapter two, Table 7 (p. 101), this study follows the previous studies of satisfaction with residential and determines and also groups the general sustainability performance factors of residential satisfaction into economic, social, culture and environment dimensions. Also, Figure 20 shows stage 1 of creation of sustainability performance factors of residential satisfaction in the Walled City.

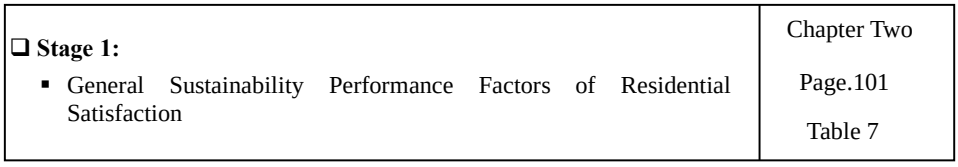


Figure 20. Stage 1 of Creation Sustainability Performance Factors of Residential Satisfaction in The Walled City.

Second, as shown in chapter three, Table 10 (p. 128), this study follows the previous studies of residential satisfaction and determines and also groups the sustainability performance factors of residential satisfaction into economic, social, culture and environment dimensions specially in historic areas. Furthermore, Figure 21 shows stage 2 of creation of sustainability performance factors of residential satisfaction in the Walled City, Famagusta.

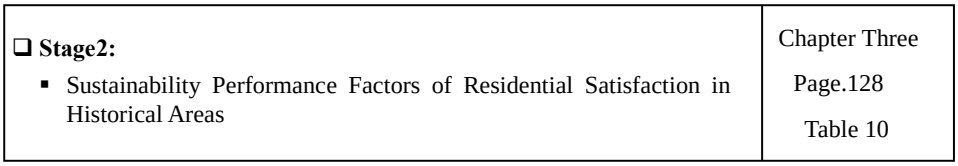


Figure 21. Stage 2 of Creation Sustainability Performance Factors of Residential Satisfaction in The Walled City.

Third, this study combines the general sustainability performance factors of residential satisfaction (chapter two, Table 7; p. 101) with the sustainability performance factors of residential satisfaction in historical areas (chapter three, Table 10; p. 128), as presented in chapter three, Table 11 (p. 131). Table 11 shows the sustainability performance factors in historic urban quarters. Moreover, Figure 22 shows stage 3 of creation of sustainability performance factors of residential satisfaction in the Walled City.

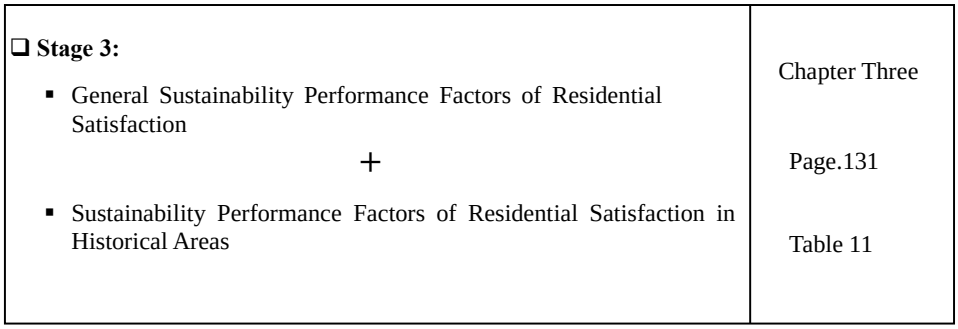


Figure 22. Stage 3 of Creation Sustainability Performance Factors of Residential Satisfaction in The Walled City.

Lastly, this study adding some specific-related factors based on the characteristics of the Walled City, Famagusta to the Table 11 (p. 131) which result in Table 12 (p.174). Moreover, Figure 23 shows stage 3 of creation of sustainability performance factors of residential satisfaction in The Walled City.

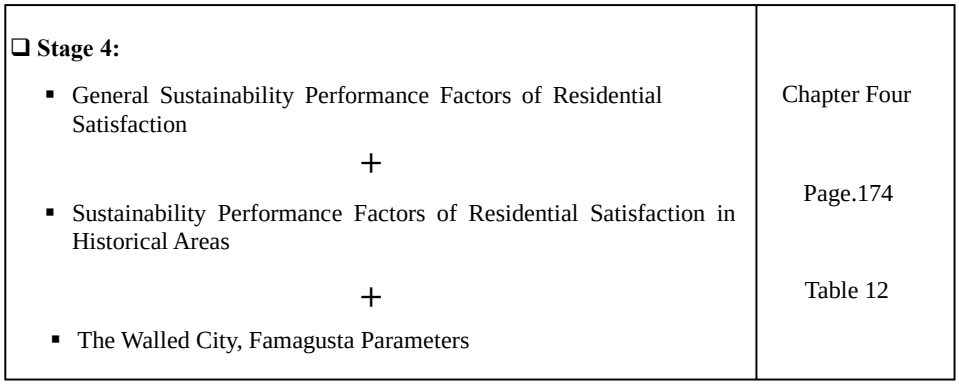


Figure 23. Stage 4 of Creation Sustainability Performance Factors of Residential Satisfaction in The Walled City.

Also, Figure 24 in the following page presents the summary of four stages of creation of sustainability performance factors of residential satisfaction in the Walled City, Famagusta.

❑ **Stage1:** ▪ General Sustainability Performance Factors of Residential Satisfaction Chapter Two (Table 7)	Dimensions	Sustainability Performance Factors of Residential Satisfaction
	Economic	Cost of housing (affordable price for buy and rent)
		Tenure options (owner/rent)
		Cost of living within the housing area (good prices of services)
		Job opportunities in the housing area
		Job creation in the form of home-based enterprise
	Social	Access to social infrastructure (schools, public transport, health center)
		Provision of recreational/ sporting facilities
		Access to social amenities (shopping centers, playground)
		Housing near to the places of work and worship
		Level of social mix in housing environment
		Quality of internal spaces of housing units
		Privacy in dwelling units
		Housing contribution to the aesthetics of urban landscape
		Social networks
		Security/safety concerns
		Management rules
	Cultural	Compatibility of housing form and design with resident's culture (interior layout and external dwelling form)
		Availability of cultural facilities and activities
		Compliance of design of new houses with historical and cultural values
	Environmental	Housing density
		Building type
		Dwelling environment quality: number, natural ventilation and lighting, size and location of (bedrooms, bathrooms, living rooms), size of corridor, dwelling structure
		Construction techniques and materials (floor, wall, ground)
		Neighborhood environmental quality: noise level, availability of thing to do, relaxing, attractiveness, pedestrian walkaways, shopping facilities, children's play areas, parking facilities, night lighting
		Open Spaces and green areas (presence, care, maintenance)
		Landscaping elements (plants, pavement, street furniture, man-made object, trees)
		Storm water discharge system
		Waste management system
		Main sources of power and water supply
❑ **Stage 2:** ▪ Sustainability Performance Factors of Residential Satisfaction in Historical Areas Chapter Three (Table 10)	Dimensions	Potential Factors
	Economic	Cost of living
		Housing cost (affordability of the house)
		Tenure (owner/ rent/ shared right with government)
		Being the owner
	Social	Availability of social infrastructure within neighborhood (schools, health center, bus stop)
		Attachment to the neighborhood
		Social interactions with neighbors and neighborhood
		Provision of recreational and sport facilities
		Social network
		Safety
		Accessibility to work place
		Management rules and performance of local authorities
		Quality of internal design (courtyard and balcony, layout of the rooms)
		Accessibility to social amenities (city center, shopping facilities, supermarket)
		Privacy within houses
		Diverse neighbors in terms of ethnicity, race, and age
	Culture	Access to cultural activities
		Adequate cultural center
		Cultural heritage, antique and historical buildings, historic environment (preservation because of aesthetic value)
	Environmental	Dwelling environment (location, size and number of rooms, ceiling height, temperature, color, electric indoor lighting, ventilation, feeling of safety, relationship of space)
		Neighborhood environment (noise level, street lighting, rest areas, road crossing/traffic density, crowdedness, attractive appearance of neighborhood, parking facilities, layout of the neighborhood, availability of outdoor relaxation, general cleanness of the environment)
		Construction materials
		Walkability/ side walk
		Building type
		Building density
		Storm water discharge system
		Electricity and water supply
		Size/ nearby open spaces, green area
		Waste disposal facilities
❑ **Stage 3:** ▪ General Sustainability Performance Factors of Residential Satisfaction + ▪ Sustainability Performance Factors of Residential Satisfaction in Historical Areas Chapter Three (Table 11)	Dimensions	Sustainability Performance Factors of Residential Satisfaction
	Economic	Cost of housing (affordable price for buy and rent)
		Tenure options (owner/rent)
		Cost of living within the housing area (good prices of services)
		Job opportunities in the housing area
		Job creation in the form of home-based enterprise
		Being the owner
	Social	Availability and access and to social infrastructure (schools, public transport, health center)
		Attachment to the neighborhood
		Provision of recreational/ sporting facilities
		Social interactions with neighbors and neighborhood
		Access to social amenities (shopping centers, playground, city center, supermarket)
		Housing near to the places of work and worship
		Level of social mix in housing environment
		Quality of internal spaces of housing units
		Privacy in the house
		Housing contribution to the aesthetics of urban landscape
		Social networks
		Security/safety concerns
		Management rules and performance of the local authorities
	Cultural	Compatibility of housing form and design with resident's culture (interior layout and external dwelling form)
		Availability and access to cultural facilities, cultural activities and cultural centers
		Compliance of design of new houses with historical and cultural values
		Housing heritage, antique buildings and historic environment (aesthetic and historic value)
	Environmental	Housing density, Building type
		Dwelling environment quality: number, location, natural ventilation and lighting and size of (bedrooms, bathrooms, living rooms); ceiling height, relationship of spaces, color, size of corridor, feeling of safety, temperature, structural safety
		Construction techniques and materials (floor, wall, ground)
		Neighborhood environmental quality: noise level, availability of thing to do, outdoor relaxation, rest area, parking facilities, night lighting, air pollution, attractive appearance of neighborhood, crowdedness, walkability/side walk, layout of the neighborhood. cleanness of the environment
		Open Spaces and green areas (presence, care, maintenance)
		Landscaping elements (plants, pavement, street furniture, man-made object, trees)
		Storm water discharge system
		Waste management system
		Main sources of power and water supply

❑ **Stage 4:** ▪ General Sustainability Performance Factors of Residential Satisfaction + ▪ Sustainability Performance Factors of Residential Satisfaction in Historical Areas + ▪ The Walled City, Famagusta Parameters Chapter Four (Table 12)	Dimensions	Dwelling	Neighborhood	
			Micro	Macro
	Economic	• Cost of housing • Tenure options • Being the owner	• Job creation in the form of home-based enterprise	• Cost of living • Job opportunities
	Social	• Quality of internal spaces of housing units • Privacy	• Social interactions • Level of social mix • Housing contribution to the aesthetics of urban landscape	• Access and availability to social infrastructure (schools, public transport, health center) • Attachment • Provision of recreational/ sporting facilities • Social interactions • Access to social amenities • Housing near to the places of work and worship • Level of social mix • Social networks • Security/safety concerns • Management rules and performance of the local authorities
	Culture	• Compatibility of housing form and design with resident's culture • Cultural heritage, antique and historical buildings, historic environment (aesthetic and historic value) • Houses renovation rules and regulation		• Availability and access to cultural facilities, cultural activities and cultural centers • Compliance of design of new houses with historical and cultural value • Historic environment (aesthetic and historic value) • Conservation of the cultural heritages by UNDP program
	Environmental	• Building type • Number, location and size of (bedrooms, bathrooms, living rooms) • Ceiling height • Relationship of spaces • Color • Size of corridor • Natural lighting • Felling of safety • Temperature • Natural ventilation • Construction techniques and materials • structural safety • Storm water discharge system • Main sources of power and water supply	• Housing density • Noise level • Outdoor relaxation • Parking facilities • Night lighting • Cleanness • Open Spaces and green areas • Storm water discharge system	• Housing density • Noise level Availability of thing to do • Rest area • Parking facilities • Night lighting • Attractive • Appearance of neighborhood • crowdedness • Walkability/side walk • Layout of the neighborhood • Cleanness • Open Spaces and green areas • Landscaping elements • Waste management system • Mix-use functions

Figure 24. All Stages of Creation Sustainability Performance Factors of Residential Satisfaction in the Walled City

Table 12 in below presents the sustainability performance determinants of residential satisfaction in Walled City. Particularly, based on Marans and Rodger (1975) classification which explained in chapter two, page 62, the sustainability performance determinants of residential satisfaction categorized into dwelling, and micro and macro-neighborhood scales. Moreover, based on the characteristics of the Walled City, Famagusta, added factors to the Table 12 include "houses renovation rules and regulation", "conservation of the cultural heritages by UNDP program" and "mix-use functions".

Table 12. Sustainability Performance Factors of Residential Satisfaction in the Walled City, Famagusta from the Scale View

Dimensions	Dwelling	Neighborhood	
		Micro	Macro
Economic	• Cost of housing • Tenure options • Being the owner	• Job creation in the form of home-based enterprise	• Cost of living • Job opportunities
Social	• Quality of internal spaces of housing units • Privacy	• Social interactions • Level of social mix • Housing contribution to the aesthetics of the urban landscape	• Access and availability to social infrastructure (schools, public transport, health center) • Attachment • Provision of recreational/ sporting facilities • Social interactions • Access to social amenities • Housing near to the places of work and worship • Level of social mix

			• Social networks • Security/safety concerns • Management rules and performance of the local authorities
Culture	• Compatibility of housing form and design with resident's culture • Cultural heritage, antique and historical buildings, historic environment (aesthetic and historic value) • Houses renovation rules and regulation		• Availability and access to cultural facilities, cultural activities and cultural centers • Compliance of design of new houses with historical and cultural value • Historic environment (aesthetic and historic value) • Conservation of the cultural heritages by UNDP program
Environment	• Building type • Number, location and size of (bedrooms, bathrooms, living rooms) • Ceiling height • Relationship of spaces • Color • Size of corridor • Natural lighting • Felling of safety • Temperature	• Housing density • Noise level • Outdoor relaxation • Parking facilities • Night lighting • Cleanness • Open Spaces and green areas • Storm water discharge system	• Housing density • Noise level Availability of thing to do • Rest area • Parking facilities • Night lighting • Attractive • Appearance of neighborhood • crowdedness • Walkability/side walk • Layout of the neighborhood • Cleanness • Open Spaces and green areas

	• Natural ventilation • Construction techniques and materials • structural safety • Storm water discharge system • Main sources of power and water supply		• Landscaping elements • Waste management system • Mix-use functions

4.2.2.1 Data Collection

As shown in Table 12, the comprehensive set of sustainability performance factors of residential satisfaction in historic urban quarter are determined from literature review. According to the determining factors as shown in Table 12, the initial questionnaire survey is designed. Remarkably, before conducting the final questionnaire survey and data collection, this study performs the pilot study by distributing the primary questionnaire survey to pilot participants. As Morgan et al. (2012) suggested, the pilot study should be conducted to assure the clarity of the items and whether to add or delete some items based on the pilot participants' views. Also, it helps in the identification of those questions that do not seem clear to participants, or issues with the questionnaire that might result to answers that are biased.

For performing the pilot study, this study selected 12 pilot participants who have resided for more than five years in the Walled City from the residential and commercial zones of 1, 2, 3, and 4 Figure 25 illustrates the different zones inside the Walled City and shows the exact locations of commercial and residential zones.

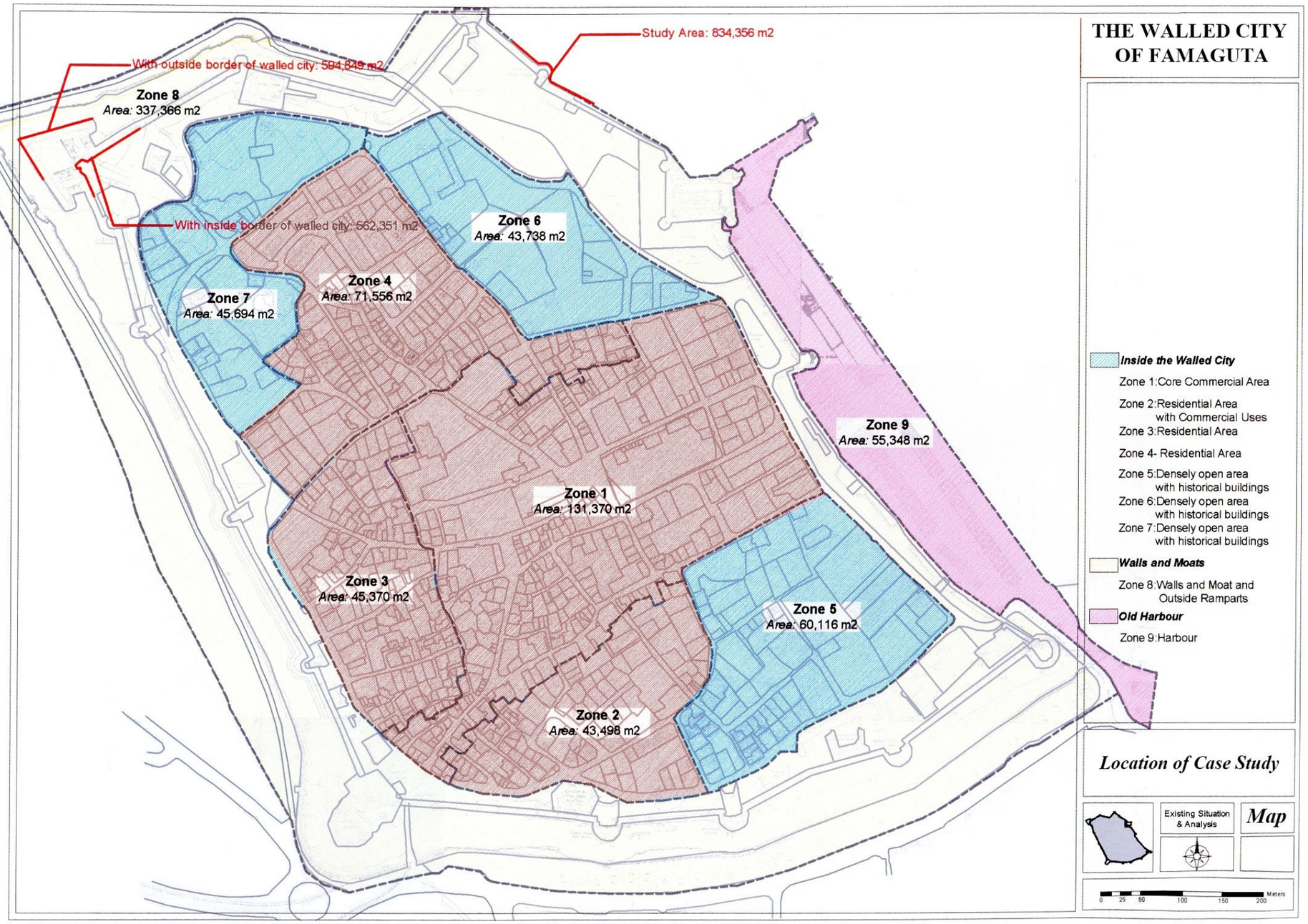


Figure 25. Location of Zones Inside the Walled City
Source: Municipality of Famagusta (2005)

To select the pilot participants, this study uses the convenience sampling technique. Administering survey in convenience sampling is aimed at willing, geographical proximity and accessible participants (Sekaran and Bougie, 2010). The respondents were asked to carry out evaluation, if the factors enumerated within the questionnaires, contained an appropriate number of factors of performance and if other factors, may be involved or eliminated from the ones listed in the questionnaires. At the end sustainability performance factors, thoughtfully, respondents were offered spaces to rate, and list the other sustainability performance factors as may be identified by the participants.

Consequently, after the pilot survey, respondents added four factors including "suitability of housing acquisition process" and "adaptability of housing units for future needs" from economic dimension, and "architectural design of housing in relation to cultural value" from cultural dimension and "reduce dependency on car within the Walled City" from environmental dimension. The pilot participants also eliminate some factors based on their opinion from economic dimension including "being the owner" and "job opportunities in the housing area".

Also, they excluded "social interaction", "attachment", and "access to social amenities" from social dimension. Specially, the pilot participants eliminate some factors based on their opinion from cultural dimension including "compatibility of housing form and design with resident's culture", "preserving cultural heritage, antique and historical buildings, and historic environment", "houses renovation rules and regulation", "availability and access to cultural facilities, cultural activities and cultural centers", and also "conservation of the cultural heritages by UNDP program".

Moreover, the pilot participants suggested to reform two questions by asking general questions from participants about “dwelling environment quality” and “neighborhood environmental quality” factors. Although prior studies considered the dwelling environment quality factor by number, location, and size of (bedrooms, bathrooms, living rooms); ceiling height, relationship of spaces, color, size of corridor, feeling of safety, temperature, and structural safety and also neighborhood environmental quality factor by noise level, availability of thing to do, outdoor relaxation, rest area, parking facilities, night lighting, air pollution, attractive appearance of neighborhood, crowdedness, walkability/side walk, layout of the neighborhood, cleanness of the environment, this study follows the pilot participants’ suggestion and ask these two factors in general.

After performing the pilot study, the final questionnaire survey designed. Appendix A shows the sample of ultimate questioners were prepared. In the Appendix A, section A shows the questionnaires about the socio-demographic characteristics of respondents. It requested questions about backgrounds in order to establish filters, that allow for comparisons of the opinion of various groups, on the essence of factors like age, income and gender. Also, the section B of the Appendix A was designed based on Table 13 which shows the entire potential factors after the pilot study.

Table 13 shows the code of each factors for further evaluation of the data and also shows the four added factors from perceptions of residents as pilot survey. As demonstrated in Table 13, the potential factors of performance were identified, with the pioneer aims of determining the criticalities of these, from the perspective of the residents for the sustainability performance factors, followed by uncovering the contrasts (if any), between respondents on the basis of ethnicity (foreign or local) and

the residence's profile (social class) on the rank of the factors of sustainability performance, and lastly, placing the sustainability performance factors established, into underlying categories.

Table 13. Sustainability Performance Factors of Residential Satisfaction

Dimension	Sustainability Performance Factors of Residential Satisfaction	Code	Pilot
Economic	Cost of housing	(ESPF01)	
	Job creation in the form of home-based enterprise	(ESPF02)	
	Tenure options	(ESPF03)	
	Suitability of housing acquisition process	(ESPF04)	(Pilot Survey)
	Cost of living within the Walled city	(ESPF05)	
	Adaptability of housing units for future needs	(ESPF06)	(Pilot Survey)
Social	Access to social infrastructure	(SSPF01)	
	Social networks	(SSPF02)	
	Provision of recreational/ sporting facilities	(SSPF03)	
	Security/safety concerns	(SSPF04)	
	Housing near to the places of work and worship	(SSPF05)	
	Suitable Management rules	(SSPF06)	
	Level of social mix in housing environment	(SSPF07)	
	Quality of internal spaces of housing units	(SSPF08)	
	Privacy in the house	(SSPF09)	
	Housing contribution to the aesthetics of urban landscape	(SSPF10)	
Cultural	Architectural design of housing in relation to cultural values	(CCPF01)	(Pilot Survey)
	Suitability of housing to occupants' culture	(CCPF02)	
	Compliance of design of new houses with historical and cultural values	(CCPF03)	
Environmental	Quality of dwelling environment	(ETSPF01)	
	Neighborhood environmental quality	(ETSPF02)	
	Housing density	(ETSPF03)	
	Natural ventilation and lighting	(ETSPF04)	
	Quality of construction techniques and materials	(ETSPF05)	
	Landscaping elements	(ETSPF06)	

	Reduced dependency on car within the Walled city	(ETSPF07)	(Pilot Survey)
	Storm water discharge system	(ETSPF08)	
	Waste management system	(ETSPF09)	
	Main sources of power and water supply	(ETSPF10)	
	Open spaces and green areas	(ETSPF11)	

Moreover, to find the important factors of residential satisfaction, this study follows based on "Marginal improvement priority" approach, which were requested from respondents to conduct assessment of the sustainability performance factors via a 5-point Likert Scale (1–5): 1 = least important; 2 = less important; 3 = slightly important; 4 = important; 5 = very important. The "Marginal improvement priority" approach introduced by Galster (1985) and is related to the psychological construct theory, which argued that residents consciously/ unconsciously rank their priorities and select the important factors. Section B of Appendix A shows the 5-point Likert Scale for each potential factor.

Furthermore, this study to collect the data set, it uses the convenience sampling technique. Administering survey in convenience sampling is aimed at willing, geographical proximity and accessible participants (Sekaran and Bougie, 2010). Accordingly, this study conducted two survey questionnaires with emphasis on the residents who live inside and outside of the Walled City during March to September, 2019. For the inside of the Walled City, it conducted the survey questionnaires from residents who live in the commercial (zone 1) and residential (zone 2, 3, 4) areas (Figure 25). Also, it conducted the survey questionnaires from residents who live the adjacent districts of the Walled City by considering that they have relatives or friends in the Walled City and/or they lived before in the Walled City.

Figure 26 shows the locations of the adjacent districts of the Walled City, which conducted the survey. Overall, this study gathered data from 245 (out of 915 population size[7]) (26.77%) households dwelling in Famagusta's historic urban quarters of the Walled City, and 167 of households living the adjacent districts of the Walled City.

Figure 26. Location of the Adjacent Districts

[7] http://www.magusa.org/belediye-meclis-tutanaklari.aspx

4.2.2.2 Evaluation of the Data

This study utilized quantitative approach: both inferential and descriptive analysis techniques for evaluation of the data. The background of the analytical technique choice (parametric or non-parametric) was attained by a test of normality via the use of the one-sample Kolmogorov-Smirnov approach, for a large data sample. The confirmation of the field data's non-normality (K-S stat. = 0.643; p-value = 0.2902) informed the usage of the tools which were non-parametric statistical. In particular, descriptive-analytical tools (Relative Importance Index (RII)) and inferential statistics including the U test with Mann-Whitney, exploratory factor analysis are employed. These tools are discussed and below;

I. Relative Importance Index (RII): This refers to a technique of descriptive statistical analysis, for the extraction of core factors or variables, from the complex multivariate data. When the interest of the researcher is to determine or extract core vital factors from a population or multitude, this index is suitable. The Relative Importance Index (RII) is often expressed in percentages. Mathematically, RII is obtained as:

$$RII = \frac{\sum_{i=1}^{n} W_i n_i}{A \times N} \times 100 \quad (1)$$

where W_i = weight of each total response that the respondents give. It ranges from 1 to 5, in this case

n_i = total number responses in each box of response

A = the highest weight in the scale: "5"

N = the total number of respondents (Morenikeji, 2006)

II. Mann-Whitney U-test: This is a non-parametric statistical equivalence of an independent samples t-test. Nonetheless, the Mann-Whitney U test is utilized

in testing whether there is a difference in two samples' means (in this case, local, foreigner). This U-test is computed as:

$$U = N_1N_2 + \frac{N_1(N_1+1)}{2} - R_1 \quad \text{OR} \quad U = N_1N_2 + \frac{N_2(N_2+1)}{2} - R_2 \quad (2)$$

where N_1 and N_2 = sample size

R_1 and R_2 = sum of the ranks for each of the samples.

III. Factor Analysis: When the interest of a researcher is to multiply and condense a multivariate data, hence pointing out interesting and essential relationships among data of observation, this is referred to as an advanced statistic. The Exploratory Factor Analysis (EFA) is appropriate especially, when the researcher is interested identifying factors on the basis of data which is available, in order to maximize the explained amount of variance. This thesis used the estimation technique of exploratory factor analysis to extract and condense critical determinants of satisfaction with residence, in historic urban quarter of Famagusta's Walled City, Famagusta.

To establish relationships among the variables, a multiple correlation analysis technique was utilized. The coefficients of the correlations (via the product-moment method) as shown in Table 14, between the pairs of k variables, are arranged and determined, by way of a correlation matrix, R:

Table 14. Correlation Matrix Table

	X_1	X_2	X_3	….	X_k
X_1	r_{11}	r_{12}	r_{13}	….	r_{1k}
X_2	r_{21}	r_{22}	r_{23}	….	r_{2k}
Variables X_3	r_{31}	r_{32}	r_{33}	….	r_{3k}
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
X_k	r_{k1}	r_{k2}	r_{k3}	….	r_{kk}

where r_{ij} is computed as:

$$r = \frac{Cov\,(X,Y)}{\sqrt{(Var\,(X))(Var\,(Y))}} = \frac{\sum_{i=1}^{n}[(X-\bar{X})(Y-\bar{Y})]}{\sqrt{\left[\sum_{i=1}^{n}(X-\bar{X})^2\right]\left[\sum_{i=1}^{n}(Y-\bar{Y})^2\right]}} \quad (3)$$

where

r is the correlation coefficient,

$\mathrm{Cov}\,(\mathrm{X},\mathrm{Y}) = \sum_{\mathrm{i}=1}^{\mathrm{n}}[(\mathrm{X}-\bar{\mathrm{X}})(\mathrm{Y}-\bar{\mathrm{Y}})]$ is the covariance of X and Y series,

$\mathrm{Var}\,(\mathrm{X}) = \sum_{\mathrm{i}=1}^{\mathrm{n}}(\mathrm{X}-\bar{\mathrm{X}})^2$ is the variance of X series,

$\mathrm{Var}\,(\mathrm{Y}) = \sum_{\mathrm{i}=1}^{\mathrm{n}}(\mathrm{Y}-\bar{\mathrm{Y}})^2$ is the variance of Y series

n = number of observations,

$\bar{\mathrm{X}}$ and $\bar{\mathrm{Y}}$ and mean values of series of X and Y values,

X and Y are variables of interest.

In the study area, to explain the extracted sustainability performance factors' contribution, the study adopts scores of the component, which are the original variables' individual contribution to the variance, for each factor of sustainability performance of the extracted sustainability performance factors, explained by each component. It is calculated via the formula:

$$CS_{ik} = \sum_{j=1}^{n} D_{ij}L_{jk} \quad (4)$$

where

CS_{ik} is the score of ith observation in kth component,

D_{ij} is the standardized value for jth factor in ith observation,

L_{jk} is the loading of factor j on component K,

Summation is over all N variables.

However, in order to remove severe autocorrelation, the Principal Component Analysis (PCA) was used, in the data for the production of reliable and stable orthogonal outcomes, that will offer determinants for satisfaction with residence in the historic urban quarter of Famagusta's Walled City. Using SPSS window program version 25.0, the statistical analysis was executed. The significance level is set at 0.05. Moreover, Figure 27 shows the summary and steps of evaluation of the data.

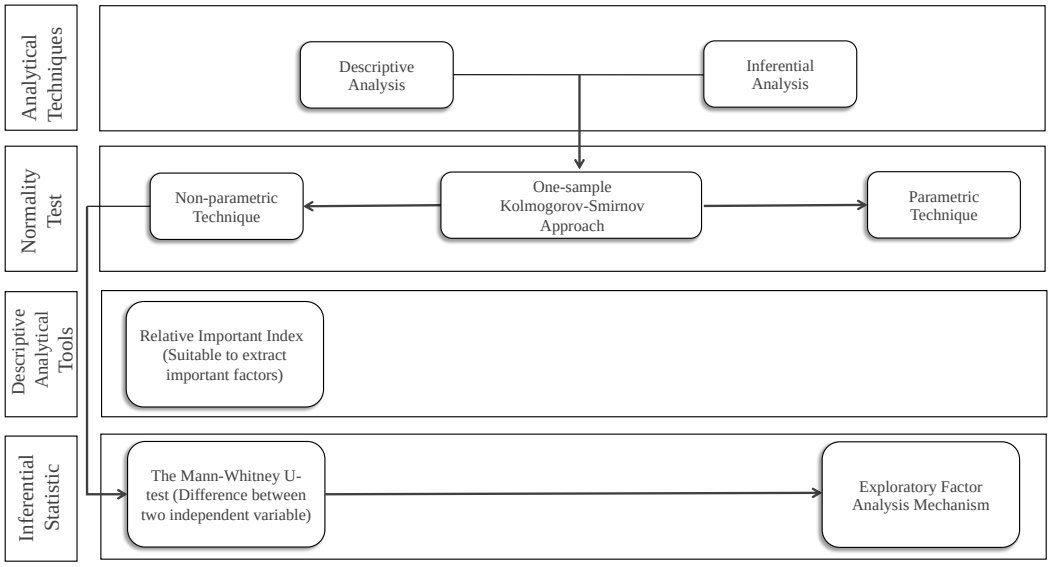


Figure 27. Summary of Evaluation of the Data

4.2.2.3 Results and Interpretation

4.2.2.3.1 Socio-demographic Characteristics

This study used descriptive analysis for socio-demographic characteristics. As presented in Table 14, the descriptive analysis result shows that there is a total of 228 (55.3%) males in the study, comprising of 31.6% who are living inside the Walled City and 23.8% who are living outside the Walled City. The total number of females is 184 (44.7%) comprising of 27.9% living inside the Walled City and 16.7% living outside the Walled City. The variations in gender distribution across the groups are not statistically significant ($\chi^2 = 1.270$, $p=0.260>0.05$).

The age distribution of the respondents covers from those less than 20years to those above 60years. From the result, most of the respondents are people within the age range of 21 years and above. Particularly, a total of 94 representing 22.8% of the total respondents are within 41-60years and live inside the Walled City while 62(15.0%) are within the same age but live outside the Walled City. 78(18.9%) of the respondents are above 60years of age and live inside the Walled City, while 57(13.8%) are of same age group (>60years) but live outside the Walled City. A total of 101(24.5%) which comprises of 62(15.0%) who are living inside the Walled City and 39(9.5%) who are living outside the Walled City within the age range of 21-40years. Only about 20(4.9%) comprising 11(2.7%) and 9(2.2%) of the total respondents are below 20years of age. These variations are statistically insignificant ($\chi^2 = 0.520$, $p=0.914>0.05$).

The monthly income distribution of the respondents as captured in the analysis indicate that a greater percentage earn 3000-4000₺, 21.4% and 16.5% respectively for those living inside and outside the Walled City. This is followed by those earning 2000-3000₺ per month with 12.4% for those living inside the Walled City and 9.7% for

those living outside the Walled City. Only a few (6.3% and 3.2% for those living inside and outside the Walled City, respectively) earn below 2000₺. The variations across the groups are not statistically significant ($\chi^2 = 3.227$, $p=0.521>0.05$).

The outcome of home ownership among the respondents indicates that 33.7% are home owners living inside the Walled City, while 18.4% are home owners who live outside the Walled City. Meanwhile, 25.7% of the respondents are rentals living inside the Walled City, while 22.1% are rentals living outside the Walled City. The statistical difference shows a significant variation between the two groups ($\chi^2 = 5.015$, $p=0.025<0.05$).

Also, from the result in Table below, there is an unmistakably predominant difference in the distribution of length of residency between respondents living inside and those living outside the Walled City ($\chi^2 = 13.658$, $p=0.008<0.05$). As shown in the result, most of the respondents (96.1%) have stayed in their various locations for at least 5years as at the time of data collection. These findings therefore, authenticate high level of reliability of the respondents as regards to the subject matter. More so, this study established no significant variation in distribution of respondents who are indigenes of the place and those who are foreigners ($\chi^2 = 0.522$, $p=0.470>0.05$).

Also, from the result of Table 15 shows that (36.7%) of respondents is local and live inside the Walled City, while (23.5%) of respondents is local and live outside the Walled city. Furthermore, (22.8%) of respondents is foreign (Non-Turkish Cypriot) (e.g., Turkish, Pakistani, Nigerian, Iranian) and live inside the Walled City, while (17.0%) of respondents is foreign (Non-Turkish Cypriot) and live outside the Walled City.

Table 15. Socio-demographic Characteristics of the Respondents

Socio-demographic characteristics	**Variables**	**Inside (n=245)**	**Outside (n=167)**	**Statistical difference** χ^2	**df**	**p-value**
Gender	Male Female	130(31.6%) 115(27.9%)	98(23.8%) 69(16.7%)	1.270	1	0.260
Age	<20years 21-40years 41-60years >60years	11(2.7%) 62(15.0%) 94(22.8%) 78(18.9%)	9(2.2%) 39(9.5%) 62(15.0%) 57(13.8%)	0.520	3	0.914
Monthly income (Turkish lira ₺)	<2000₺ 2000-3000₺ 3000-4000₺ 4000-6000₺ >6000₺	26(6.3%) 51(12.4%) 88(21.4%) 47(11.4%) 33(8.0%)	13(3.2%) 40(9.7%) 68(16.5%) 30(7.3%) 16(3.9%)	3.227	4	0.521
Home ownership	Owner Rental	139(33.7%) 106(25.7%)	76(18.4%) 91(22.1%)	5.015	1	0.025**
Length of residency	<5years 5-10years 21-30years 31-40years ≥41years	9(2.2%) 33(8.0%) 69(16.7%) 71(17.2%) 63(15.3%)	7(1.7%) 20(4.9%) 29(7.0%) 76(18.4%) 35(8.5%)	13.658	4	0.008**
Ethnicity	Local (Turkish-Cypriot) Foreign (Non-Turkish-Cypriot)	151(36.7%) 94(22.8%)	97(23.5%) 70(17.0%)	0.522	1	0.470

In summary, Table 15 shows that the majority of respondents were male and between (41-60) years old in both inside and outside the Walled City. Besides, the majority of respondents were in middle-income level between (3000 – 4000 Turkish lira) in both inside and outside the Walled City. Also, it shows that the majority of respondents were owners and renters inside and outside the Walled City, respectively. Likewise, the majority of respondents have lived between 31-40 years in both inside and outside the Walled City. Moreover, Table 15 shows that the majority of respondents were local (Turkish-Cypriot). Furthermore, Figure 28 presents the socio-demographic characteristic distribution of respondents based on majority.

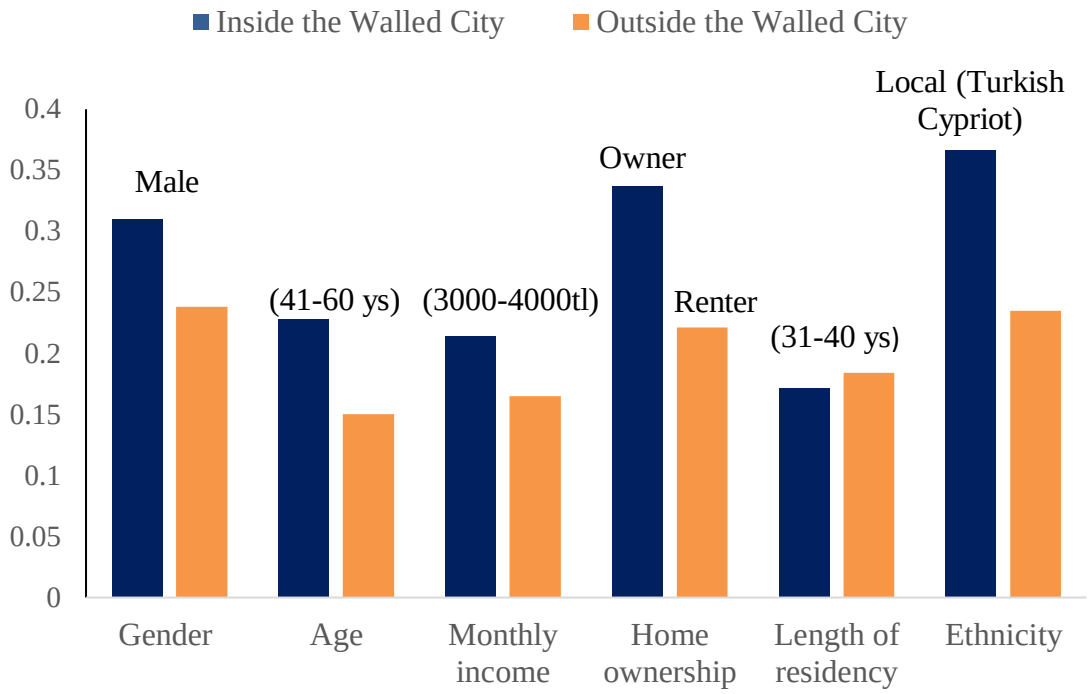


Figure 28. Socio-demographic Characteristic Distribution of Respondents Based on Majority

4.2.2.3.2 The Order of the Potential Factors of Residential Satisfaction

To ascertain the essence of the factors identified for residential satisfaction, through subjective perception, the Relative Importance Index (RII) analytical technique was used.

As mentioned in the previous section, it is a descriptive statistical technique for the extraction of core factors or variables, from complex multivariate data. Also, it is most applied when the interest of the researcher is to determine or extract core vital factors of satisfaction with residence from a population or a multitude. Table 15 ranks the overall sustainability performance factors of residential satisfaction and also it ranks the performance factors based on respondents' groups profile (homeowner and renters), region (historic urban quarter dwellers and those one residing outside), and ethnicity (local and foreign). Based on overall ranking score (RII) and also Fisher's

statistics, for acceptance and rejection, for the top fifteen (15) factors, extraction was made on a benchmark score of 60%. Table 15 shows that 15 determinants are relatively more important and it should be extracted for further analysis.

These important factors are “Cost of housing” (ESPF01), “Tenure options” (ESPF03) and “Cost of living in the Walled City” (ESPF05) factors which extracted from the economic dimension. Also, “Access to social infrastructure” (SSPF01), “Security/ safety concerns” (SSPF04), “Suitable Management rules” (SSPF06), “Level of social mix in housing environment” (SSPF07) and “Quality of internal spaces of housing unit” (SSPF08) determinants extracted from the social dimensions.

Furthermore, from the cultural dimension “Architectural design of housing in relation to cultural values” (CPF01), “Suitability of housing to occupant’s culture” (CPF02) and “Compliance of design of new houses with historical and cultural value” (CPF03) factors were extracted. Lastly, from the environmental dimension “Quality of dwelling environment” (ETSPF1), “Neighborhood environmental quality” (ETSPF2), “Reduce dependency on car in the Walled City” (ETSPF7) and “Open spaces and green areas” (ETSPF11) determinants were extracted. Moreover, Figure 29 shows the extracted factors from Table 16.

Table 16. The Order of the Sustainability Performance Factors based on the Respondents'

Code	Profile		Region		Ethnicity		RII (%)	Decision
	Home owner	Renter	HUQ dwellers	Those living outside	Local	Foreigners		
	RII (Rank)	RII (Rank)	RII (Rank)	RII (Rank)	RII (Rank)	RII (Rank)		
Economic Sustainability Performance Factors (ESPF)								
ESPF01	89.33	88.61	79.34	98.6	88.24	89.70	88.97	Extract
ESPF02	49.87	55.57	44.10	61.34	50.76	54.68	52.72	Ignore
ESPF03	75.69	76.81	68.72	83.78	77.24	75.26	76.25	Extract
ESPF04	56.12	52.54	55.12	53.54	53.12	55.54	54.33	Ignore
ESPF05	88.62	88.26	89.23	87.65	89.01	87.87	88.44	Extract
ESPF06	50.22	48.62	50.76	48.08	48.22	50.62	49.42	Ignore
Social Sustainability Performance Factors (SSPF)								
SSPF01	86.80	88.74	89.22	86.32	78.14	97.40	87.77	Extract
SSPF02	45.88	48.68	43.65	50.91	39.14	55.42	47.28	Ignore
SSPF03	52.15	49.63	52.02	49.76	27.45	74.33	50.89	Ignore
SSPF04	89.11	85.35	88.90	85.56	78.44	96.02	87.23	Extract
SSPF05	52.12	50.02	52.44	49.7	55.03	47.11	51.07	Ignore
SSPF06	88.01	84.93	86.77	86.17	80.06	92.88	86.47	Extract
SSPF07	83.74	88.14	88.25	83.63	76.43	95.45	85.94	Extract
SSPF08	62.57	67.79	69.32	61.04	62.00	68.36	65.18	Extract
SSPF09	49.87	49.69	48.97	50.59	38.24	61.32	49.78	Ignore
SSPF10	48.25	47.29	50.03	45.51	53.92	41.62	47.77	Ignore
Cultural Sustainability Performance Factors (CSPF)								
CPF01	80.96	81.18	79.88	82.26	78.59	83.55	81.07	Extract
CPF02	61.00	60.16	62.16	59.00	53.98	67.18	60.58	Extract
CPF03	79.38	80.62	81.22	78.78	61.77	98.23	80.00	Extract
Environmental Sustainability Performance Factors (ETSPF)								
ETSPF01	82.77	83.21	79.67	86.31	70.58	95.40	82.99	Extract
ETSPF02	78.63	81.11	80.21	79.53	81.74	78.00	79.87	Extract
ETSPF03	51.01	48.99	44.56	55.44	60.22	39.78	50.00	Ignore
ETSPF04	43.06	44.18	48.37	38.87	40.71	46.53	43.62	Ignore
ETSPF05	44.00	40.74	40.77	43.97	38.85	45.89	42.37	Ignore
ETSPF06	44.89	45.47	46.34	44.02	47.92	42.44	45.18	Ignore
ETSPF07	85.34	84.22	86.11	83.45	83.87	85.69	84.78	Extract
ETSPF08	47.11	45.89	47.22	45.78	56.11	36.89	46.50	Ignore
ETSPF09	48.95	49.35	48.57	49.73	36.29	62.01	49.15	Ignore
ETSPF10	50.22	46.48	49.03	47.67	45.87	50.83	48.35	Ignore
ETSPF11	73.90	72.26	71.54	74.62	79.33	66.83	73.08	Extract

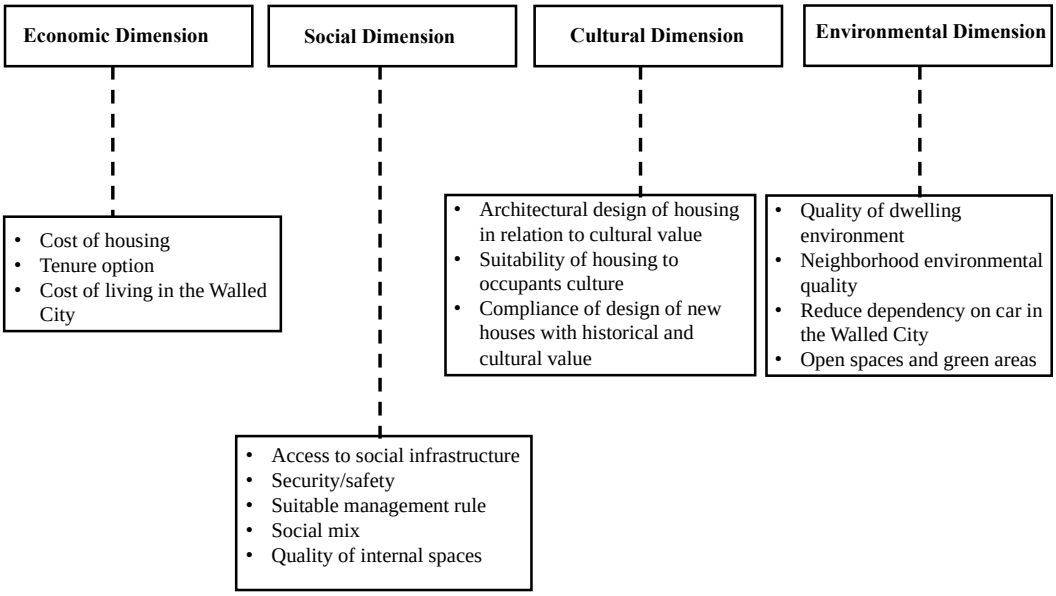


Figure 29. Extracted Factors from Table 16

4.2.2.3.3 Comparison of Relative Importance Index (RII) for Different Respondents' Groups

As explained in the previous subsection, the Relative Importance Index (RII) analytical technique was used to ascertain the vital essence of the factors identified through the use of the subjective perception of residents. Based on the Relative Importance Index (RII) analytical technique, the top fifteen (15) factors of residential satisfaction extracted. To test whether the selected (15) factors of residential satisfaction are different from respondent's perception or not. Therefore, it will enable the discovery by the analysis of whether the perception of factor's essence is significantly different on the basis of the profile of the respondents: (homeowner and renter); ethnicity: (locals and foreigners); (historic urban quarter dwellers and those living outside); as shown in Figure 30.

Also, in comparing the Relative Importance Index for the different respondents' groups, the non-parametric Mann-Whitney U-test was used in the pairwise comparison

within the groups (for the comparison of two independent groups of samples, see Mulliner and Maliene, 2015).

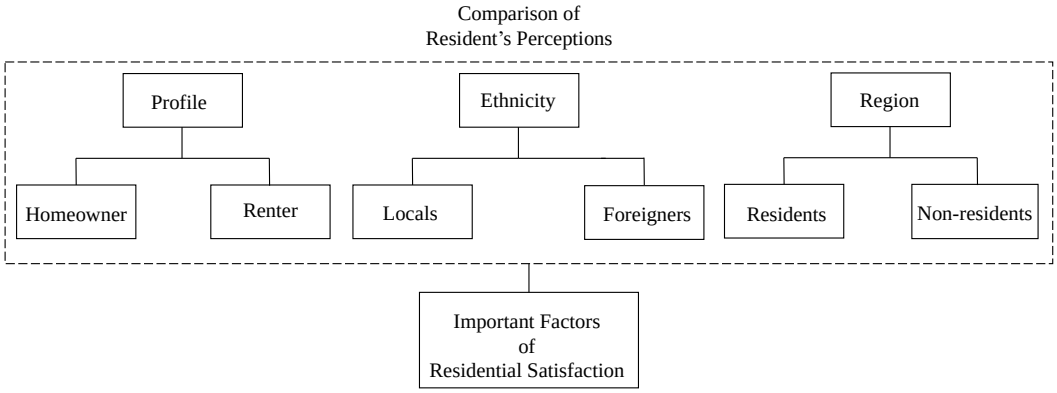


Figure 30. Comparison of Residents' Perceptions about Important Factors of Residential Satisfaction

As explained before the Mann-Whitney U test is appropriate for comparing two independent groups of samples. Therefore, Table 17 shows the Mann-Whitney U test results for the residents with different profile. As shown in Table 16, test results indicate that the respondents' opinions on the factor's vital essence do not vary extensively on the basis of their profile (homeowner or renter).

In details, results show that;

Based on Mann-Whitney U statistic there is no significant difference between homeowner or renter among participants for the economic sustainability performance factor of:

- Cost of housing (ESPF01), (p-value = 0.1453)
- Tenure options (ESPF03), (p-value = 0.2116)
- Cost of living in the Walled City (ESPF05), (p-value = 0.4790)

Also, based on Mann-Whitney U statistic there is no significant difference between homeowner or renter among participants for the social sustainability performance factor of:

- Access to social infrastructure (SSPF01), (p-value = 0.3710)
- Security /safety concern (SSPF04), (p-value = 0.6412)
- Suitable management rules (SSPF06), (p-value = 0.4021)
- Level of social mix/combination in the housing environment (SSPF07), (p-value = 0.7231)
- Quality of internal spaces of housing units (SSPF08), (p-value = 0.2477).

Furthermore, based on Mann-Whitney U statistic there is no significant difference between homeowner or renter among participants for the cultural sustainability performance factor of:

- Architectural design of housing in relation to cultural value (CPF01), (p-value = 0.5782)
- Suitability of housing to occupant's culture (CPF02), (p-value = 0.1051)
- Compliance of design of new houses with historical and cultural value (CPF03), (p-value = 0.6552).

Moreover, based on Mann-Whitney U statistic there is no significant difference between homeowner or renter among participants for the environmental sustainability performance factor of:

- Quality of dwelling environment (ETSPF01), (p-value = 0.8951)
- Neighborhood environment quality (ETSPF02), (p-value = 0.7723)
- Reduce dependency on car in the Walled City (ETSPF07), (p-value = 0.5316)

- Open spaces and green areas (ETSPF11), (p-value = 0.2844)

Table 17. Comparison within the Respondents' Profile Groups: Home owner vs. Renter

Rank	Code	Mann-Whitney U statistic	Probability values	Ho: No significant difference
1	ESPF01	Test value = 0.773	p-value = 0.1453	Insignificant
2	SSPF06	Test value = 0.381	p-value = 0.4021	Insignificant
3	SSPF01	Test value = -0.895	p-value = 0.3710	Insignificant
4	SSPF04	Test value = 0.225	p-value = 0.6412	Insignificant
5	ESPF05	Test value = 0.373	p-value = 0.4790	Insignificant
6	SSPF07	Test value = -0.534	p-value = 0.7231	Insignificant
7	ETSPF07	Test value = 0.216	p-value = 0.5316	Insignificant
8	ETSPF01	Test value = -0.173	p-value = 0.8951	Insignificant
9	CPF01	Test value = -0.326	p-value = 0.5782	Insignificant
10	CPF03	Test value = 0.924	p-value = 0.6552	Insignificant
11	ETSPF02	Test value = -0.829	p-value = 0.7723	Insignificant
12	ESPF03	Test value = -0.284	p-value = 0.2116	Insignificant
13	ETSPF11	Test value = 0.554	p-value = 0.2844	Insignificant
14	SSPF08	Test value = -0.338	p-value = 0.2477	Insignificant
15	CPF02	Test value = 0.212	p-value = 0.1051	Insignificant

Furthermore, from the Mann-Whitney U-test outcomes in Table 18 below demonstrates that the opinions of the respondents on the vitality of the factor, do not significantly differ on the basis of their region (residing outside or historic urban quarter dwellers).

In details, results show that;

Based on Mann-Whitney U statistic there is no significant difference between historic urban quarter dwellers or living outside among participants for the economic sustainability performance factor of:

- Cost of housing (ESPF01), (p-value = 0.1105)
- Tenure options (ESPF03), (p-value = 0.0761)
- Cost of living in the Walled City (ESPF05), (p-value = 0.0916).

Also, based on Mann-Whitney U statistic, there is no significant difference between historic urban quarter dwellers or living outside among participants for the social sustainability performance factors of:

- Access to social infrastructure (SSPF01), (p-value = 0.2117)
- Security /safety concern (SSPF04), (p-value = 0.2031)
- Suitable management rules (SSPF06), (p-value = 0.3314)
- Level of social mix in the housing environment (SSPF07), (p-value = 0.2301)
- Quality of internal spaces of housing units (SSPF08), (p-value = 0.0833).

Moreover, based on Mann-Whitney U statistic, there is no significant difference between historic urban quarter dwellers or living outside among participants for the cultural sustainability performance factors of:

- Architectural design of housing in relation to cultural value (CPF01), (p-value = 0.1226)
- Suitability of housing to occupant's culture (CPF02), (p-value = 0.6102)
- Compliance of design of new houses with historical and cultural value (CPF03) (p-value = 0.4032).

Furthermore, based on Mann-Whitney U statistic, there is no significant difference between historic urban quarter dwellers or living outside among participants for the environmental sustainability performance factors of:

- Quality of dwelling environment (ETSPF01), (p-value = 0.2314)
- Neighborhood environment quality (ETSPF02), (p-value = 0.1003)
- Reduce dependency on car in the Walled City (ETSPF07), (p-value = 0.1032)
- Open spaces and green areas (ETSPF11), (p-value = 0.1208)

Table 18. Comparison within the Respondents' Region: Urban Dwellers vs. Those Living Outside

Rank	Code	Mann-Whitney U statistic	probability values	Ho: No significant difference
1	ESPF01	Test value = -0.824	p-value = 0.1105	Insignificant
2	SSPF06	Test value = 0.629	p-value = 0.3314	Insignificant
3	SSPF01	Test value = 0.502	p-value = 0.2117	Insignificant
4	SSPF04	Test value = 0.533	p-value = 0.2031	Insignificant
5	ESPF05	Test value = 0.677	p-value = 0.0916	Insignificant
6	SSPF07	Test value = 0.609	p-value = 0.2301	Insignificant
7	ETSPF07	Test value = 0.772	p-value = 0.1032	Insignificant
8	ETSPF01	Test value = - 0.564	p-value = 0.2314	Insignificant
9	CPF01	Test value = - 0.902	p-value = 0.1226	Insignificant
10	CPF03	Test value = 0.887	p-value = 0.4032	Insignificant
11	ETSPF02	Test value = 0.744	p-value = 0.1003	Insignificant
12	ESPF03	Test value = -0.683	p-value = 0.0761	Insignificant
13	ETSPF11	Test value = -0.912	p-value = 0.1208	Insignificant
14	SSPF08	Test value = 0.639	p-value = 0.0833	Insignificant
15	CPF02	Test value = 0.712	p-value = 0.6102	Insignificant

However, from the comparative analysis of the Mann-Whitney U test presented in Table 19 below, it was obtainable that the opinions of residents on the essence of the ethnicity (Local or Foreigners) factor vary tremendously (p-values < 0.05). As shown in the result, though the two participant groups selected the same sustainability performance factor, the ranking order is quite different among the local as compared to the foreigners.

In details, results show that;

Based on Mann-Whitney U statistic there is significant difference between local or foreign among participants for the economic sustainability performance factor of:

- Cost of housing (ESPF01), (p-value = 0.0001)
- Tenure options (ESPF03), (p-value = 0.0401)
- Cost of living in the Walled City (ESPF05), (p-value = 0.0320).

Also, based on Mann-Whitney U statistic there is significant difference between local or foreign among participant for the social sustainability performance factor of:

- Access to social infrastructure (SSPF01), (p-value = 0.0001)
- Security /safety concern (SSPF04), (p-value = 0.0101)
- Suitable management rules (SSPF06), (p-value = 0.0002)
- Level of social mix in the housing environment (SSPF07), (p-value = 0.0015)
- Quality of internal spaces of housing units (SSPF08), (p-value = 0.0009).

Moreover, based on Mann-Whitney U statistic there is significant difference between local or foreign among participants for the cultural sustainability performance factor of:

- Architectural design of housing in relation to cultural value (CPF01), (p-value = 0.0301)
- Suitability of housing to occupant's culture (CPF02), (p-value = 0.0005)
- Compliance of design of new houses with historical and cultural value (CPF03), (p-value = 0.0022).

Furthermore, based on Mann-Whitney U statistic there is significant difference between local or foreign among participant for the environmental sustainability performance factor of:

- Quality of dwelling environment (ETSPF01), (p-value = 0.0038)
- Neighborhood environment quality (ETSPF02), (p-value = 0.0017)
- Reduce dependency on car in the Walled City (ETSPF07), (p-value = 0.0060)
- Open spaces and green areas (ETSPF11), (p-value = 0.0028).

Table 19. Comparison within the Respondents' Ethnicity: Indigenes and Foreigners

Rank	Code	Mann-Whitney U statistic	probability values	Ho: No significant difference
1	ESPF01	Test value = −2.512	p-value = 0.0001	Significant
2	SSPF06	Test value = −2.611	p-value = 0.0002	Significant
3	SSPF01	Test value = −2.980	p-value = 0.0001	Significant
4	SSPF04	Test value = −1.992	p-value = 0.0101	Significant
5	ESPF05	Test value = −2.005	p-value = 0.0320	Significant
6	SSPF07	Test value = −2.482	p-value = 0.0015	Significant
7	ETSPF07	Test value = 2.325	p-value = 0.0060	Significant
8	ETSPF01	Test value = -2.022	p-value = 0.0038	Significant
9	CPF01	Test value = −2.186	p-value = 0.0301	Significant
10	CPF03	Test value = −2.401	p-value = 0.0022	Significant
11	ETSPF02	Test value = 2.532	p-value = 0.0017	Significant
12	ESPF03	Test value = 2.112	p-value = 0.0401	Significant
13	ETSPF11	Test value = 2.194	p-value = 0.0028	Significant
14	SSPF08	Test value = −2.612	p-value = 0.0009	Significant
15	CPF02	Test value = −2.582	p-value = 0.0005	Significant

As the summary of comparison of Relative Importance Index (RII) for different respondents' groups, this study demonstrated that the opinions of the respondents are not dependent on the profile of the resident (homeowner and renters) and (urban dwellers and those living outside) which in line with Husna and Nurijan (1987) study.

However, this study showed that the opinion on the essence of a criteria varies tremendously according to ethnicity in Famagusta, North Cyprus. This offers the indication that the perceptions and opinions of the residents, about the essence of the factor, were not consistent within the country. This is in-line with the views by Riazi and Emami (2018), who showed that the moderator in relationships between residential satisfaction and neighbors is ethnicity. The improvement of interaction with neighbors of similar ethnicity, is attempted by ethnic groups. Furthermore, Shuey et al. (2018) pointed out that the impact of the preferences of the ethnicity/race of families, for neighborhood and housing conditions. Regarding all the design

principles, and practices, ought to be consistent culturally, so that they could not be predefined, contextually.

4.2.2.3.4 Factor Analysis of the 15 Factors

Irrespective of the groups of participants, same elements were selected irrespective, hence a joint statistical analysis can be conducted to advance the determination of the core factors of sustainability performance for attaining increased satisfaction with residence in the area of study. The Exploratory Factor analysis (EFA) technique was used, to achieve this target. The choice of technique is as a result of the aim of the research, in exploring and presenting the vital factors for heightened residential satisfaction, as a precursor for further enhancement of sustainability in the area of study.

Some tests like Kaiser-Meyer-Olkin (KMO) was run before the factor analysis, in measuring the adequacy of sampling; the test of sphericity of Bartlett, and Pearson correlation were conducted in order to ascertain whether series of data, is qualified for factor analysis. Table 20 shows the resultant outcomes below. The 65.7% KMO statistic value, portrays that the sample is sufficient, while the 79.094 estimate of the Bartlett's Chi-Square, and the $0.000 < 0.05$ associated probability value indicate the appropriateness of the factor model. In Table 20 below, the Pearson correlation results are presented.

This correlation's test matrix (used also in Mohit et al., 2010) measures the partial correlation between the measures in the area within the top 15, which are descriptively extracted sustainability performance factors, and comprise of cultural, environmental performance, social, and economic. The resultant outcome demonstrates high coefficients of correlation, which is indicative of problems of serial autocorrelation

among variables exhibiting a strong immense/vital positive correlation, while negative correlation is shown by others. The Principal Component Analysis (PCA) technique solved this autocorrelation problem.

Table 20. Pearson Correlation Matrix

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15
X1	1.00														
X2	0.672	1.00													
X3	0.735	0.695	1.00												
X4	0.681	0.709	0.782	1.00											
X5	0.711	0.882	0.674	0.617	1.00										
X6	0.503	0.863	0.896	0.775	0.793	1.00									
X7	0.788	0.684	0.778	0.722	0.749	0.639	1.00								
X8	0.808	0.722	0.763	0.834	0.618	0.777	0.745	1.00							
X9	0.633	0.882	0.673	0.841	0.338	0.607	0.720	0.766	1.00						
X10	0.692	0.617	0.538	0.802	0.899	0.587	0.922	0.681	0.724	1.00					
X11	0.513	0.542	0.771	0.498	0.597	0.589	0.754	0.496	0.587	0.508	1.00				
X12	0.732	0.687	0.709	0.688	0.555	0.542	0.739	0.855	0.634	0.448	0.696	1.00			
X13	0.811	0.722	0.738	0.716	0.677	0.736	0.950	0.704	0.902	0.701	0.747	0.782	1.00		
X14	0.825	0.912	0.968	0.763	0.592	0.787	0.749	0.762	0.734	0.723	0.597	0.599	0.908	1.00	
X15	0.796	0.809	0.689	0.617	0.893	0.682	0.746	0.774	0.619	0.883	0.578	0.865	0.798	0.775	1.00

Where,
X_1 = ESPF01= Cost of housing
X_2 =SSPF06= Suitable management rules
X_3 =SSPF01= Access to social infrastructure
X_4 =SSPF04= Security/safety concerns
X_5 =ESPF05= Cost of living within the Walled City
X_6 =SSPF07= Level of social mix in housing environment
X_7 =ETSPF07= Reduced dependency on car within the Walled City
X_8 =ETSPF01= Quality of dwelling Environment
X_9 =CPF01=Architectural design of housing in relation to cultural values
X_{10}=CPF03= Compliance of design of new houses with historical and cultural value
X_{11} =ETSPF02= Neighborhood environmental quality
X_{12} =ESPF03= Tenure options
X_{13} =ETSPF11= Open spaces and green areas
X_{14} =SSPF08 = Quality of internal spaces of housing units
X_{15} =CPF02= Suitability of housing to occupant's culture

To explain variations in the data observed, the factors are reduced into a parsimonious number of clearly defined matrix which are uncorrelated, via the use of the varimax rotation technique. The resultant outcome as shown in Table 21in below, of this

statistical calculation saw to the emergence of eight vital components out of 15 sustainability factors. As demonstrated in Table 21 from the usage of the Principal Component Analysis (PCA) technique, these eight important factors extracted were "Cost of Housing" (ESPF01), "Suitable management rules" (SSPF06), "Security/safety concerns" (SSPF04), "Cost of living within the Walled city" (ESPF05), "Level of social mix in housing environment" (SSPF07), "Tenure options" (ESPF03), "Open Spaces and green areas" (ETSPF11), and "Suitability of housing to occupant's culture" (CPF02) respectively from the perception of residents.

Table 21. Component Scores and Communalities Matrix

Factors	Component Scores								Communalities
	1	2	3	4	5	6	7	8	
ESPF01	**0.868**	0 .144	0.053	−0.028	−0.018	0.012	−0.007	−0.003	0.984
SSPF06	−0.101	0.057	−0.042	**0.592**	−0.071	0.113	0.023	0.014	0.898
SSPF01	0.536	−0.347	0.075	−0.020	−0.221	0.004	−0.117	0.022	0.822
SSPF04	−0.390	0.102	**0.604**	−0.073	−0.203	0.031	−0.026	0.106	0.865
ESPF05	0.529	**−0.501**	−0.032	0.301	0.008	0.233	0.385	−0.007	0.867
SSPF07	−0.390	0.093	0.133	−0.221	**0.512**	−0.028	0.282	−0.151	0.793
ETSPF07	−0.101	0.140	−0.301	0.354	0.209	−0.072	0.326	−0.211	0.912
ETSPF01	0.223	−0.301	0.065	−0.335	0.021	0.044	−0.411	0.023	0.865
CPF01	−0.314	−0.225	0.119	0.430	0.221	−0.023	−0.152	0.046	0.766
CPF03	0.223	0.092	−0.009	−0.462	0.381	−0.053	0.221	0.035	0.945
ETSPF02	0.223	−0.055	0.123	−0.372	0.272	−0.228	0.214	−0.103	0.854
ESPF03	−0.466	0.073	−0.206	0.222	0.045	**0.621**	0.004	−0.005	0.882
ETSPF11	0.215	0.146	−0.411	0.261	−0.212	0−.192	**0.622**	−0.011	0.940
SSPF08	0.356	0.174	−0.330	−0.211	0.322	−0.332	0.253	−0.067	0.911
CPF02	0.226	0.064	−0.012	−0.336	0.337	−0.107	0.201	**0.442**	906
Eigenvalue	5.16	3.23	2.53	1.43	1.12	1.04	0.98	0.72	
Variance exp. (%)	28.7	19.5	17.9	10.3	9.4	7.2	4.6	2.1	
Cumulative %	28.7	48.2	66.1	76.4	85.8	93.0	97.6	99.7	

4.3 Determinants for Enhancing Residential Satisfaction in Historic Urban Quarter of The Walled City, Famagusta

Although interventions for the attainment of sustainability and regeneration in historic urban quarter have directed the attentive gaze of several scholars (see Doratli et al., 2007; Vehbi and Hoskara, 2009; Tanrıkul, Hoskara, 2019), the intervention of professionals, government agencies, and experts for sustainable revitalization of the historic urban quarter alone, can be counterproductive and inefficient. What other potential strategies of efficient intervention can be executed in historic urban quarter? To address this question, this study attempts to find out the important factors of residential satisfaction from sustainability views. Furthermore, unlike of prior studies (Anderson and Weidemann, 1997) and housing quality (e.g., Altaş and Özsoy, 1998) which evaluated the level of residential satisfaction based on the existence related factors in the literature, this study by using pilot study, which help to find better residents' perception, provide more accurate determinants for enhancing residential satisfaction in historic urban quarter.

According to the PCA analysis, the eight important factors of residential satisfaction are presented in Figure 31. These factors are "Cost of housing" (ESPF01), "Suitable management rules" (SSPF06), "Security/safety concerns" (SSPF04), "Cost of living within the Walled City" (ESPF05), "Level of social mix in housing environment" (SSPF07), "Tenure options" (ESPF03), "Open spaces and green areas" (ETSPF11), and "Suitability of housing to occupant's culture" (CPF02).

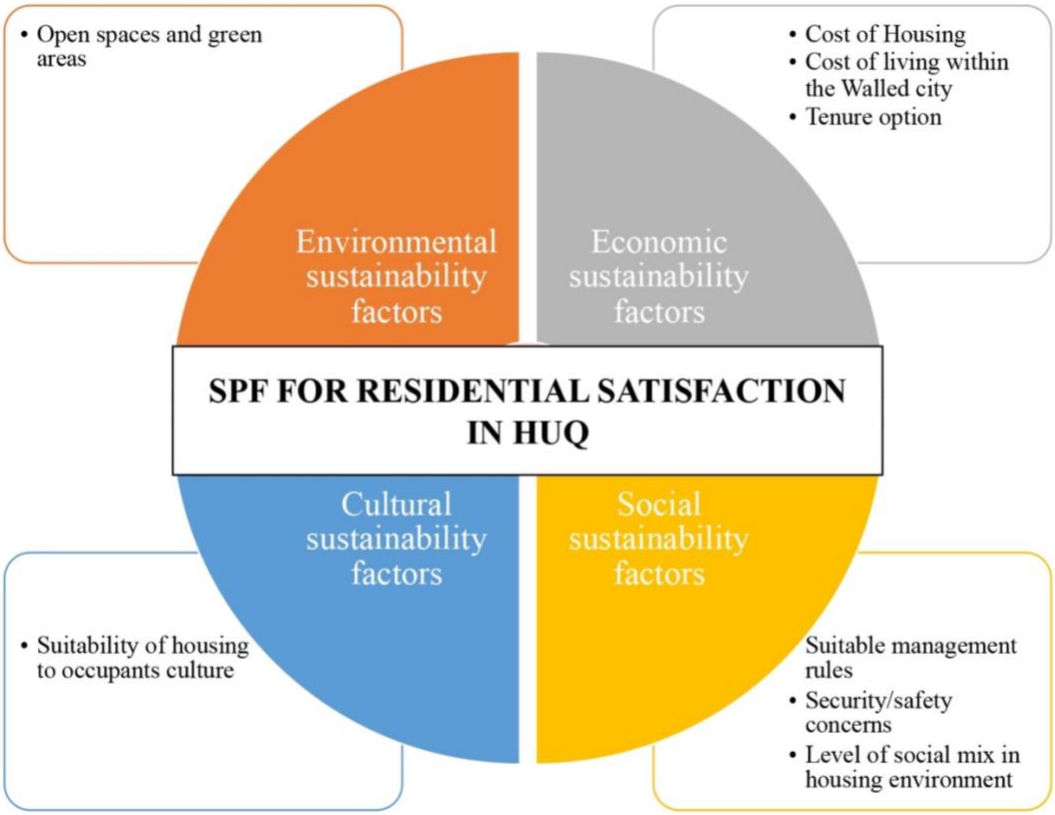


Figure 31. Determinants for Enhancing Housing Satisfaction in Historic Urban Quarter of The Walled City, Famagusta

In the following parts it will explain the important factors according to perception of respondents from economic, social, cultural and environment dimension;

- **Economic Dimension (Dwelling Scale):**

Research results demonstrated that currently, inhabitants of historic urban quarter in the Walled City perceive “Cost of housing” and “Tenure option” from economic dimension are the key tremendous factors impacting satisfaction with residential. Therefore, in below it will describe in more detail.

- ***Cost of housing***

Research outcomes demonstrated that in current times, residents of historic urban quarter in the Walled City perceive "Cost of housing" from economic dimension as the key significant factors influencing residential satisfaction. This is not a surprising result since the renting/cost of housing and its relation to income, has been mostly used in the literature for residential satisfaction, in measuring the levels of residential satisfaction amongst residents (Baiden et al., 2011). This finding is consistent with Zanuzdana et al. (2013) study, that asserted that lower satisfaction with housing is significantly associated with inhabitants with lower-income level, and vice versa (Fallahi and Mehrad, 2015). Also, in another study by Kahreman (2013) stated that affordability of dwelling and being the owner of the house can impact on economic features which has relation to housing satisfaction especially in old settlements. As expected, this factor is important in historic urban quarters as old houses may impose preservation costs on residents resulting to increase cost of housing and reduce the level of satisfaction.

- ***Tenure option***

Also, resultant outcomes portrayed that currently, residents of historic urban quarter in the Walled City consider "Tenure option" from economic dimension as another key factor impacting satisfaction with residential. Furthermore, results are similar to prior studies (Rohe and Basolo ,1997; Ogu, 2002; Vera-Toscano and Ateca- Amestoy, 2007) indicate that "Tenure options" is important factor of residential satisfaction. Some studies highlighted homeownership as being the key determinant in the definition of housing satisfaction's economic dimension (Varady and Carrozza, 2000; Baiden et al., 2011). According to White and Schollaert (1993) propose a model for cognitive well-being and home ownership, and uncovered that the latter increases

feelings of general well-being, sense of pride and interaction with other inhabitants in the community, and satisfaction with the residential environment. However, in the case of historical blocks Jiang et al. (2018) found that tenure option is significantly influence to relocation of residents. Also, homeownership does not need to pay for rent and may decrease cost of living resulting to higher satisfaction between residents.

- **Economic Dimension (Macro Neighborhood Scale):**

Moreover, results revealed that residents of historic urban quarter in the Walled City perceive "Cost of living within the Walled City" from economic dimension as another core tremendous factors influencing satisfaction with residential.

- ***Cost of living within the Walled City***

Fokkema et al. (1996) argued that cost of living is matter and a higher cost of living is the serious problem of residents in their housing area. Also, recently, Ibem et al. (2019) discussed that living a place with lower cost of living in terms of good prices and services corresponds with increasing residential satisfaction. This cost in not only limited to the regular daily costs and may increase by bearing indirect costs such as renovation of houses. Particularly, the indirect costs are likely higher in historic urban quarters due to existing old houses.

- **Social Dimension (Micro and Macro Neighborhood Scale):**

In continuation, residents of historic urban quarter in the Walled City perceived "Suitable Management rules", "Security/safety concerns" and "Level of Social mix" from social dimension are other core significant factors impacting residential satisfaction.

- ***Suitable management rules***

This is a particularly interesting finding because the impact of rules of management on the level of satisfaction among residents, have been recognized by only a few studies. An earlier study by Francescato et al. (1989) made suggestions on the impact

of management rules, practices, and policies, on satisfaction. Erdogan et al. (2007), in a study, showed that the activities of local authorities (e.g., the urban planners and housing policymakers) have certain impacts on housing satisfaction. These research studies presented arguments that through the implementation of strategies and regulations which are effective, municipalities and local authorities could better the state of conditions which impact the residents' satisfaction, practically. Mohit et al. (2010) offered suggestions that local authorities play roles which are substantial in the improvement of satisfaction with residence, with their function of determining and implementing management policies that are suitable management. Especially, as historic urban quarters are culturally rich places, management rules (e.g., social) and performance of the local authorities to conduct social events or programs may lead to increase social interaction which followed by higher satisfaction level in macro neighborhood scale.

- ***Security/safety concerns***

Also, residents of historic urban quarter in the Walled City perceived "Security/safety concerns" from social dimension is another key significant factor influencing residential satisfaction. This finding negates the report of Oktay and Rustemli (2011) that discovered safety as not being a concern for the residing majority including the historic urban quarter of the Walled City, and there are no issues with social attributes. Therefore, it appears from our resultant outcomes that historic urban quarter inhabitants are beginning to recognize the vitality of safety provisions and related factors, as with several other scholars. For example, Turkoglu (1997) highlighted that residential satisfaction level is lower in the traditional area due to the lack of safety. Also, Riazi and Emami (2018) made the discovery that principles of design on the

satisfaction with residence had a tremendous 0.183 value, that mainly related to provisions on security and safety.

According to the authors, these design features include parking safety, the safety of the indoor space, the lighting of public areas, and security for children in public areas. First-time buyers of homes, considered the feature of personal security, when arriving at a decision on out rightly purchasing. According to Teck-Hong (2012), some factors influencing the satisfaction with residence, include the neighborhood's crime rate, and the probability of owning a home among first-time homebuyers. Temelová and Dvorˇáková (2012) mentioned that, residents have lower satisfaction due to night-time safety in the historical core area. A community, with good leisure facilities, which is safe, encourage residential satisfaction (Ren and Folmer, 2017). Therefore, having a such perception and concern about safety leads residents to have lower satisfaction level in the historic urban quarter of Walled City.

- ***Level of social mix***

Also, residents of historic urban quarter in the Walled City perceived "Level of social mix" from social dimension as another key significant factor influencing residential satisfaction. Moreover, consistent with the finding Jun and Jeong (2018), results showed that social mix is important factor and higher social mix between residents can increase satisfaction level. Furthermore, based (Musterd and Andersson, 2005; Joseph et al., 2007), arguments, the higher level of social mix corresponds with increasing urban attractiveness and decreasingly distressed neighborhoods. Higher mixed habitation such as mix of incomes and social backgrounds (e.g., ethnicity, age) can enhance social integration in a community, which followed by higher level of residential satisfaction.

Consequently, Lovejoy (2010) confirmed that a higher social mix led to higher residential satisfaction in traditional environments. Since historical urban quarters is threatened by physical and functional obsolescence, contains very old buildings, and undesirable environment diminishing attractiveness, residents have less tendency to live in historical area, resulting to reduced social mixing and residential satisfaction subsequently. Therefore, high level of social mix can increase residential satisfaction in historical urban quarter of the Walled City.

- **Environmental Dimension (Micro and Macro Neighborhood Scale):**

Furthermore, results showed that "The open spaces and green areas" from environmental dimension is another important factor of residential satisfaction in the Walled City.

  - ***The open Spaces and green areas***

This finding is consistently, the study by Zhu et al. (2017) stated that open spaces (e.g., parks, public plazas, river) and green areas increase people's psychological perception and lead to increase satisfaction degree of residents. Adewale et al. (2019) found that residents are least satisfied with the sizes of open spaces in traditional core area. They mentioned that size of open spaces promotes decent and healthy living environment resulting to higher satisfaction levels. Also, Temelová and Dvorˇáková (2012) recommended that open spaces and green areas which are furnished with enough benches can increase residential satisfaction in the historical core. Historical urban quarters have relatively fewer open spaces and green areas than non-historical areas. Therefore, this factor is important from perception of residents.

- **Cultural Dimension (Dwelling Scale):**

  - ***The suitability of the housing occupants' culture***

Moreover, results show that “The suitability of the housing occupants’ culture” is another important factor of residential satisfaction in the Walled City. Similarly, Ibem et al. (2013) found that the performance of the design of the buildings and the number of bedrooms in the buildings in relation to their culture (convenience) of the inhabitants is important.

In summary, there are eight critical factors which impact the level of satisfaction significantly in historic urban quarters of the Walled City, Famagusta. These findings have important implications for housing policy makers and local authorities and recommend that satisfaction of residents depends on social, economic, environment, and culture dimensions. Remarkably, findings suggest that residential satisfaction is not achievable if one of these dimensions will be ignored.

Chapter 5

CONCLUSION

A resident's residential satisfaction is not simply an essential constituent of the life quality of such resident, but it also ascertains their form of response to their environment of residence. Determining the important factors of satisfaction particularly based on residents' perceptions, expectations, and experiences have important policy implications for housing decision makers.

Especially, investigating the factors that determine residential satisfaction in historic urban quarters are relatively more important than non-historic areas as cultural, architectural, and historical values are more prominent. Nevertheless, historic urban quarters are threatened relatively more by physical and social decay, poor structural conditions and technical infrastructure.

Moreover, the expectation of people regarding their environment of residence and their housing have been changed due to evolving conditions of life, spurred by processes of globalization, and historic urban quarters are not exempted. Considering these characteristics, it makes it important for scholars and researchers to investigate satisfaction with residence in historic urban quarters, and by determining important factors of satisfaction are more able to control the increases of the dissatisfaction's levels and relocation of residents. Also, understating the important factors of

satisfaction helps to enhance the attractive demeanor of historic urban quarters and well-being of residents.

Focusing on the literature, numerous studies have investigated residential satisfaction in non-historical and historical areas. Findings of numerous studies showed that residential satisfaction in non and historical areas are impacted mainly by socio-demographic characteristics, dwelling and micro-micro neighborhood. More specifically, focusing on non-historical areas, the findings of previous studies showed that socio-demographic characteristics can be included the factors such as gender, ethnicity, ownership of house, level of income and length of stay.

Also, prior studies highlighted that dwelling and micro-micro neighborhood can be included the factors such as neighborhood quality, dwelling quality, public facilities, and housing density. Furthermore, for the historical areas, findings of prior studies indicated that residential satisfaction is impacted mainly by factors such as social networks, social infrastructure, dwelling quality, safety, living cost, and affordable dwelling.

However, unlike several studies which have explored the determinants of residential satisfaction in non-historical areas such as public and private housing, less attention has been paid to examine the potential factors of residential satisfaction in historical areas bases on residents' perceptions, expectations and experiences. In addition, after a deeply reviewing the literature, it found that most of the studies of residential satisfaction have employed either a single or combination of the multi-dimensions such as social and environment, social and culture, economic and environment in their studies. In other words, there is a lack of exploratory research on the multi-dimensional

for evaluating residential satisfaction by considering the factors of environmental, economic, social, and cultural dimensions in historic urban quarters.

Therefore, this study aimed to fill the gap by availing comprehensively a list of factors based on the social, environment, economic, and culture dimensions to evaluate residential satisfaction within the context of historic urban quarters. It also aimed to examine whether the potential factors of residential satisfaction differ based on respondent's living within the inside and outside of the Walled City, and respondent's ethnicity and profile. To achieve this aim, this study selected the historical urban quarters of the Walled City, Famagusta as a case study of this research. The Walled City characterized by valuable cultural heritages, traditional character and architectural value while it is plagued by dilapidating buildings, poor structural conditions, and poor living environment, in addition to infrastructural and sanitary systems that are outdated.

Furthermore, this study uses a sustainability concept to determine the multidimensions of social, environment, economic, and culture. Also, it follows the prior studies and the literature to group the potential factors into the dimensions of social, environment, economic, and culture. Remarkably, this study constructs the potential factors of residential satisfaction in historical urban quartets by combining the potential factors of residential satisfaction in non-historical areas, in historical areas, and specifically in the Walled City.

By performing the quantitative analytical technique, the rank of the important factors of residential satisfaction based on residents' perception, expectations and experiences are listed as follows.

From the economic dimension, results showed the “Cost of housing”, “Tenure options” and “Cost of living within the Walled City” are the most essential factors of satisfaction for residents living in the Walled City.

From the social dimension, results showed the “Suitable Management rules”, “Security/safety concerns” and “Level of social mix in housing environment” are the most vital factors of satisfaction for residents living in the Walled City.

From the environment dimension, results showed the “Open spaces and green areas” is the most vital factor of satisfaction for residents living in the Walled City.

From the culture dimension, results showed the “Suitability of housing to occupant’s culture” is the most important factor of satisfaction for residents living in the Walled City.

Also, the findings show that opinion of residents for the important factors differ considerably by ethnicity (local/foreign). However, analytical processes demonstrated that the opinions of respondents, do not depend on their profile (homeowner/renter) and it does not have different among respondents within the inside and outside of the Walled City.

This thesis’ findings will aid the better comprehension of the perceptions, experiences and expectations of residents, in historic urban quarters. They are also of usefulness to urban planners, municipalities, and housing policy decision-makers, for the improvement of environments of residential satisfaction in accordance with the modern expectations and needs of residents. Also, the resultant outcomes of this

research study provide some insights that add to the academic literature on residential satisfaction, as it creates new windows of opportunities for further research to carry out testing and application of the proposed determinants, in a case-study survey-based research of other historic houses and urban areas. Furthermore, for the process of sustainable development, this can be deemed a vital step, because the identification of the determining factors of residential satisfaction, aids the satisfaction of the contemporary needs of residents, in historical environments with urban and physically degraded fabrics.

Despite the provision of important factors of residential satisfaction in historic urban quarters, by this thesis, subsequent studies should be carried out in environments with more history, to allow for an extensive picture and comparison of their findings, with ours.

Also, future research should use a larger and more extensive sample size of respondents in the evaluation to find more accurate findings. Furthermore, it would be interesting if such studies would analyze residents' views on the relevance of factors for further enhancement of residential satisfaction in historic urban quarters alongside the opinions of residents such as professionals, experts and academics.

Besides, it would be interesting for further research to prepare questionnaires based on perceptions, expectations, experiences, and also emotion to evaluation of residential satisfaction in historic urban quarter. Furthermore, residential satisfaction changes over time and is thus a dynamic process. After the research was completed, many tourism and recreational buildings were quickly occurred as an adaptive reuse projects in the Walled City, Famagusta. Therefore, it would be remarkable for further studies

to also consider such adaptive reused projects and investigate its impact on residential satisfaction. Moreover, it would be interesting for further research to compare whether the perceptions of residents for the potential important factors of residential satisfaction are different based on other socio-demographic characteristics such as age groups, male/female and level of income. Lastly, further studies should also be considered to measure the extent of residential satisfaction in the historic urban quarter such as the Walled City, Famagusta.

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APPENDIX

QUESTIONNAIRES

Questionnaires consent form

I would be appreciated for accepting to participate in this survey.

The questionnaires aim to explore the significant determinants which affect positively or negatively on the level of residential satisfaction in the case of the Walled City, Famagusta. Our findings can contribute to the decision makers of the Walled City to increase the level of residential satisfaction through enhancing either the negative or positive determinants.

Your participation in this research is completely voluntary.

There is no risk in participation in this research.

If you wish to participate in this study, please sign the form below.

Researcher signature _____

Participant's signature _____

(Date) _____

Section A: Socio- demographic Characteristics

Gender	Male	Female			
Age	Below 18	(19-30)	(31-61)	>61	
Monthly income family	<2000₺	2000-3000₺	3000-4000₺	4000-6000₺	>6000₺
Home ownership	Owner	Rental			
Length of residency	<5 Years	5-10	10-20	20-40	>40
Ethnicity	Foreign (Non-Turkish-Cypriot)	Local (Turkish-Cypriot)			
Region	Inside HUQ	Outside HUQ			

Section B: Potential Factors

ESPF	5 (VI)	4 (I)	3 (SI)	2 (LI)	1 (LI)
Cost of housing	5	4	3	2	1
Job creation in the form of home-based enterprise	5	4	3	2	1
Tenure options	5	4	3	2	1
Suitability of housing acquisition process	5	4	3	2	1
Cost of living within the Walled City	5	4	3	2	1
Adaptability of housing units for future needs	5	4	3	2	1
SSPF	5 (VI)	4 (I)	3 (SI)	2 (LI)	1 (LI)
Access to social infrastructure	5	4	3	2	1
Social networks	5	4	3	2	1
Provision of recreational/ sporting facilities	5	4	3	2	1
Security and safety issues	5	4	3	2	1
Housing near to the places of work and worship	5	4	3	2	1
Suitable management rules					
Level of social mix in housing environment	5	4	3	2	1
Quality of internal spaces of housing units	5	4	3	2	1
Privacy in the house	5	4	3	2	1
Housing contribution to the aesthetics of urban landscape	5	4	3	2	1
SSPF	5 (VI)	4 (I)	3 (SI)	2 (LI)	1 (LI)
Architectural design of housing in relation to cultural values	5	4	3	2	1
Suitability of housing to occupants' culture	5	4	3	2	1

Compliance of design of new houses with historical and cultural value	5	4	3	2	1
ETSPF	5 (VI)	4 (I)	3 (SI)	2 (LI)	1 (LI)
Quality of housing environment	5	4	3	2	1
Neighborhood environmental quality	5	4	3	2	1
Housing density	5	4	3	2	1
Natural ventilation, lighting	5	4	3	2	1
Quality of construction techniques and materials	5	4	3	2	1
Landscaping elements	5	4	3	2	1
Reduced dependency on car within the Walled City	5	4	3	2	1
Storm water discharge system	5	4	3	2	1
Waste management system	5	4	3	2	1
Main sources of power and water supply	5	4	3	2	1
Open spaces and green areas	5	4	3	2	1