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## THE RESEARCH MODELLING IN NEIGHBOURHOOD QUALITY

Norainah Abdul Rahman, Dasimah Omar, Abdul Ghani Salleh

### ABSTRACT

The paper aims to explain the previous research modelling in developing neighbourhood quality for the residents' needs in their housing and neighbouring areas. The research modelling will be based on physical, social and economic elements. The elements of physical aspects are dwelling unit, facilities and services, accessibility and surrounding environment. Social aspects will be measured through socio-demographic, social community and social interaction. The economic aspects, on the other, hand will focus on socio-economic of the residents. In developing the neighbourhood quality, the satisfaction model has been developed either in physical model, physical and social model or physical, social and economic model. The residents will evaluate the physical attributes using the satisfaction scale. Many researches in developed countries and developing countries use different settings for the studies such as housing scheme, medium housing scheme, public housing, low cost public housing, private public housing and informal housing. The setting location for the studies has been set either at rural area, urban area, medium density area, high density area and low density area. In Malaysia the neighbourhood quality research is focused more on low cost housing areas for the low income people in physical and social multivariable. The research modelling applied mainly to the physical, social or economic model. Further research can be expanded at mixed housing development through the mixture of physical, social and economic models.

*Keywords: Neighbourhood Quality, Physical Model, Social Model, Economic Model, Residents' Satisfaction*

Correspondence Author: Norainah Abdul Rahman, Faculty of Architecture Planning and Surveying  
Universiti Teknologi MARA (Perak). Email: [norai760@perak.uitm.edu.my](mailto:norai760@perak.uitm.edu.my)

Dasimah Omar, Faculty of Architecture Planning and Surveying, Universiti Teknologi MARA Shah Alam.  
Abdul Ghani Salleh, School of Housing Building and Planning, Universiti Sains Malaysia.

### INTRODUCTION

Neighbourhood quality is the physical, social and economic elements influencing on the residents' satisfaction and necessity. Instead of the physical element that has a big manoeuvre in providing the high contact to the residents' satisfaction, the social and economic factors also give an impact in neighbourhood quality. Neighbourhood quality can be defined as neighbourhood security, increase in property values, neighbourhood homogeneity, neighbourhood satisfaction, dwelling satisfaction, positive social image of neighbours, exclusive tendencies, community organization and avoidance to parts of the city (Erkip, 2010). Serrano (2009) revealed that the neighbourhood environment characteristics such as noise, pollution, environmental problems and crime or vandalism influenced the provision of neighbourhood quality. Whilst (Rehdanza & Maddison, 2008) stated that the neighbourhood characteristics influence individuals is living, for example, in a predominantly residential area, industrial or commercial area. Controls are also included for the size of the town or city as well as the distance to the nearest larger city or the closest transport link in neighbourhood quality. Most researches are involved with physical factors (Aiello,

Ardone, & Scopelliti, 2010; Erkip, 2010; Fornara, Bonaiuto, & Bonnes, 2010; Lovejoy, Handy, & Mokhtarian, 2010; Mohit, Ibrahim, & Rashid, 2010), social factors (Aiello, et al., 2010; Erkip, 2010; Lovejoy, et al., 2010; Rogers & Sukolratanamete, 2009) and economic factors (Aiello, et al., 2010; Erkip, 2010; Lotfi & Koohsari, 2009; Lovejoy, et al., 2010; Serrano, 2009).

In addition, for better neighbourhood quality, most theoretical research framework has used the satisfaction model. The satisfaction model as noted by Aiello et al. (2010) states that the residential satisfaction, considered as a multidimensional variable refers to different domains of urban residential quality. Socio demographic (gender, age, etc.) and residential (length of residence in the place, number of people living together, etc.) variables were also included in the model. In the past model, socio demographic and residential variables predict the dimensions of perceived urban quality, and these, in turn, predict neighbourhood attachment, considered as the final criterion. Among neighbourhood features, presence of facilities, quietness, pleasantness of buildings and social relationships emerged as the best predictors of neighbourhood attachment. Lovejoy et al. (2010) recognised the satisfaction model as satisfaction

levels in combination with perceptions of the neighbourhood environment as a reflection of respondents' preferences. The concept of "satisfaction" is generally defined as the extent to which needs are met, perhaps contrasting with some other types of attitudinal queries that some argue draw more on affective, normative, or cognitive beliefs, determinants of residential satisfaction, consideration as potential determinants to the attributes of residents' physical, socio cultural, and economic environment; the facilities, services, or other benefits nearby; and attributes of individuals themselves.

The model used by the researchers can be classified into three categories which are the physical model (Hur, Nasar, & Chun, 2010; Lee, Ellis, Kweon, Hong, 2008; Ogu, 2002; Westaway, 2006), the physical and social model (Marino Bonaiuto, Fornara, & Bonnes, 2003; Dunstan, et al., 2005; Fornara, et al., 2010; Lotfi & Koohsari, 2009) and the physical, social and economic model (Aiello, et al., 2010; Erkip, 2010; Lovejoy, et al., 2010; Serrano, 2009). These factors are important in providing adequate and enough facilities to the neighbourhood quality for the residents' necessity and residents. There are three main factors for further discussion in influencing the provision of good neighbourhood quality. The first discussion is the physical factors which are spatial, functional and environmental. The second discussion is the social factor which is the socio-demographic background of the residents and other social factors related. Finally, the economic factors are the socio-economic background of the residents. In continuation to the theoretical framework, the discussion will start with the physical model, followed by the physical and social model and finally the physical, social and economic model.

### **Neighbourhood Quality in Developed and Developing Countries**

Largely, the research in evaluating and measuring the neighbourhood quality uses the residential satisfaction model as a theoretical background. Many of the researchers use the multivariable factors in evaluating the neighbourhood quality. This section will discuss the satisfaction model development in the current years through evaluating and measuring the neighbourhood quality in housing and neighbourhood area. The discussions also will categorise theoretical concepts into physical, social and economic factor of housing and neighbourhood in developed and developing countries

#### ***The Physical Model***

Most of the studies used multivariable in conceptualising their study in evaluating residential satisfaction in physical factor for the neighbourhood quality in housing and neighbourhood area. Ogu (2002) developed the conceptual satisfaction model

in physical factor in housing and environment for the study in low, medium, high cost housing in Benin City, Nigeria. The elements involved in housing are conditions of housing unit, privacy in the house, room condition, wall and door materials, and adequate number of rooms, toilet facility, and access to water supply. While the elements in environment involved are neighbourhood condition, access road, storm-water drains, maintenance of environmental facilities, collection of refuse and street lighting. Meanwhile, Westaway (2006) conceptualised the satisfaction model in illegal housing in Doornkop, Soweto, South Africa by combining the multivariable elements. The multivariable used for the evaluation study are housing, schools, clinics, transport, refuse, street light, police, recreation, local government and jobs. Study done by Lee, Ellis, and Hong (2008) used natural elements of landscape structures or recreation facilities, trees, grass, water and paved structure as neighbourhood facilities for the neighbourhood quality evaluation neighbourhood in city of College Station, USA. Whereas Hur, Nasar, and Chun (2010) evaluated greenery which covered physical measure of the attributes of the environment (vegetation rate, building density), perceived attributes of the environment (naturalness, openness) and evaluation of the attributes of the environment (satisfaction with presence of trees, satisfaction with amount of open spaces, satisfaction with density of housing) in neighbourhood area in Franklin County, Ohio, USA.

#### ***The Physical and Social Model***

Numerous studies used multivariable in physical and social factor in evaluating residential satisfaction in housing and neighbourhood area for neighbourhood quality study. Djebarni and Al-Abed (2000) established the concept by doing research on public housing in Yemen. The satisfaction concept implicated three main variables which are area satisfaction with social environment (neighbours, privacy, playgrounds), satisfaction with roads (road access, road noise, road lighting) and satisfaction with facilities location in the neighbourhood (facilities location, distance to work, location of schools, provision of amenities). A previous study in neighbourhood area on the city of Rome, Italy, has constructed the conceptual framework for the study. Five main multivariables were used for the concept which are architectural/town-planning features (architectural and town-planning space, organization of accessibility and roads, green areas), socio-relational features (people and social relations), functional features (welfare services, recreational services, commercial services, transport services), context features (pace of life, environmental health, upkeep and care) and neighbourhood attachment (Bonaiuto, et al., 2003). At the same time as Rukwaro and Olima (2003) emphasized, study at medium cost housing in Claycity estate, Kenya with physical and social factors which integrated physical



planning (land use including land grabbing), management of city assets, development control, buildings, car parks, and informal settlements; security (regular and community policing), infrastructure (roads, transport systems, street lighting, water and sewerage and solid waste management), social welfare (public health, medical facilities, civil education, social issues such as street people, unemployment and public transportation), and environment (green areas, forests, air and water pollution).

The study in housing area in Saga City Japan by Ge and Hokao (2004) developed conceptual framework for evaluation for the satisfaction in neighbourhood quality which covered the convenience, amenity, health, safety and community. The multivariable physical factors for the neighbourhood facilities elements included school (elementary school, middle school, and high school), public transportation (bus stop, railway station), shops (supermarket, food shop, convenience store, and commercial land), post office and banks, cultural facilities, sports facilities, medical and welfare facilities for the evaluation neighbourhood quality. Dunstan et al. (2005) has produced the conceptual framework in five main items in study at neighbourhood in Neath Port Talbot in South Wales, Australia. The items apprehended are physical incivilities (broken or boarded up windows, vandalism to private property, abandoned cars, stray dogs roaming, illegal parking, burnt out properties, dog litter in street, littered pathways or street, vandalism to public property), territorial functioning or personal investment (low external beautification, poor garden maintenance, poor property maintenance, no neighbourhood watch signs), defensible space (low defensible space, dense properties, maximum possible), natural environment (few trees in front gardens, predominant outlook not green, few trees in public space, no planted vegetation, no green space) and miscellaneous (absence of recreational space, poor path condition, vacant properties, commercial outlook, industrial outlook, presence of derelict land, undesirable parking arrangements, poorly maintained shared areas).

Ge and Hokao (2006) and Ge et al. (2006) used the same conceptual framework in their study in housing area in Saga City Japan in 2004 for the study in high density housing in Japanese cities and the study in residential area for Changjiang Delta Region of China. Similar to Bonaiuto et al. (2006) who used the same conceptual framework in previous study in neighbourhood area in the city of Rome, Italy in the year 2003 for the study in medium and low cost housing in Italian cities. Tu and Lin (2008) have constructed the framework by using six evaluation scales and eleven underlying factors which covered urban planning and design, security and social

relationship, transportation and commercial services, residential atmosphere and facility management.

Zhao (2009), on the other hand, used two main elements to conceptualise the study in residential area in Ningbo city, China. The first factor is measuring the perceived environmental qualities of urban residential for spatial aspects (architectural-planning space, organization and accessibility of space, green space), human aspects (people and social relations), functional aspects (welfare, recreational, commercial, transport services), contextual aspects (pace of life, environmental health, upkeep) and second measuring residential attachment (being away, fascination, extend, compatibility). In recent years, the satisfaction concept in neighbourhood quality for neighbourhood facilities is incorporated with the neighbourhood attachment. The concept involved with organization of accessibility and roads (internal functionality, external connections), green areas, social relational features (security, discretion, sociability), welfare services (school services, social care services), recreational services (sport services, social-cultural activities), commercial services, transport services, pace of life (relaxing versus distressing, stimulating versus boring), environmental health, upkeep (macro upkeep, micro upkeep) and neighbourhood attachment (Fornara et al., 2010).

There are several studies focusing only on one factor in evaluating the neighbourhood quality for the conceptual framework in physical and social factor. The community interaction is used to evaluate the impact of physical factor in neighbourhood quality. Friedman and Rosenbaum (2007) who did a research in neighbourhood area in the United States has conceptualised the framework by using two different places. The first place is at central city dwellers and second place is at suburban, both places included reference person reports within 1/2 block of housing unit, trash or junk, numbers of open spaces, abandoned buildings, buildings with bars on window. Rogers and Sukolratnametee (2009) developed the conceptual framework in neighbourhood area in Houston Texas, USA. The interaction with the ecology element which was incorporated is well-defined (clear centre, clear edge), mixed-use (type of households, land uses and activities), density (compact neighbourhood, lot sizes in acres), pedestrian friendly (front porches and balconies, distance between houses and nearest pedestrian activities, garage on façade, presence of sidewalks, tree-line streets, street widths, interconnected streets, separate pedestrian network), public space (distance from furthest house to nearest park, integrated network of parks and open space in community).

Other studies focused on neighbourhood facilities and public facilities factor for the conceptual framework. Apparicio, Se'guin, and Naud (2008) emphasized the conceptual framework by focusing on accessibility of public and private



services and facilities in Public Housing Buildings in Montréal, Canada. The multivariable used included cultural facilities (library, cinema, and cultural disseminator), educational facilities (elementary school, secondary school, adult training centre), health services and facilities (medical clinic, dentist, hospital, large pharmacy, small pharmacy), sports and recreational facilities (arena, activity centre, youth centre, community garden, park - larger than 1-10 hectare, wading pool, outside skating rink, inside swimming pool, outside swimming pool), bank services (national bank, other bank branches), other services and facilities (local employment centre, day care centre, public market, shopping centre, subway station, supermarket). A Similar study done by Lotfi and Koohsari (2009) on neighbourhood area in Tehran, Iran conceptualised the framework by evaluating the accessibility of public facilities for residents' satisfaction. Two main variables used for the framework are socio-economic inequalities and access to public spaces (such as local parks, stores and elementary schools).

#### ***The Physical, Social and Economic Model***

The majority of studies used multivariable physical, social and economic factor in conceptualising the study framework. The study in housing area in Southern Taiwan used three main multivariable combination factors for neighbourhood facilities satisfaction model evaluation used in neighbourhood quality. The first factor is perceived social capital which included participating in activities together, greeting each other, mutual concern for each other, providing assistance during an emergency, being able to find somebody to talk with when in need, maintaining public hygiene in the neighbourhood, solving problems together and feeling happy with the neighbourhood. The second factor is perceived security incorporated with quiet and peaceful environment, spacious and roomy environment, order and good public security in the neighbourhood, feeling safe in the neighbourhood. The last factor is adequacy of services and facilities which integrated with adequate lighting and convenient transportation (Yang et al., 2002). In a research done on housing area in western Virginia, USA, the conceptual model used a combination of factors for neighbourhood facilities which are physical factor in the upkeep of homes and yards, landscape in the neighbourhood, street lighting in the neighbourhood, crowding and noise level, nearness of neighbourhood to facilities needed, quality of the environment in the community and developed three type of model for the neighbourhood environment quality for the evaluation (Sirgy & Cornwell, 2002).

Research done by Gbakeji and Magnus (2007) in residential and neighbourhood area at Warri Metropolis, Delta State, Nigeria used seven indicators for the conceptual framework. The seven indicators are neighbourhood environmental quality,

quality of immediate surroundings, neighbourhood social setting, proximity and availability of neighbourhood facilities, housing aesthetics, housing facilities and housing structure. Serrano (2009) divided the concept into four main characteristics such as study in residential area in European Community Household. The first characteristic is the individual aspects which included socio-economic, socio-demographic, health, income, migration and labour situation. The second characteristic is the dwelling characteristics which involved types of dwelling-flat or house, number of rooms, existence of indoor flushing toilet, hot running water, terrace or garden, shortage of space, inadequate heating facilities, leaky roof and damp walls or floors. The third characteristic is neighbourhood or environment characteristics which consist of noise, pollution, environmental problems and crime or crime and vandalism. The final characteristic is the household characteristics which comprise duration of residence, annual income, household size, housing costs and variables regarding how households feel about their financial situation.

Lovejoy's et al. (2010) study in neighbourhood area in California, USA has produced the conceptual framework for the satisfaction model. The neighbourhood criteria used for the concept are attractiveness (attractive appearance of neighbourhood, high level of upkeep in neighbourhood, variety of housing styles), quietness (quiet neighbourhood, low level of traffic on neighbourhood streets), liveliness (lots of people out and about within the neighbourhood, lots of interaction among neighbours, diverse neighbours in terms of ethnicity, race, and age), big yards (large backyards, large front yards), safety (safe neighbourhood for walking, low crime rate within the neighbourhood, safe neighbourhood for kids to play outdoors, quiet neighbourhood), mixed-use (shopping areas within walking distance, other amenities such as community centre nearby, parks and open spaces nearby), good infrastructures (sidewalks throughout the neighbourhood, good street lighting, lots of off-street parking, garages or driveways) and socio-economics (age, annual household income, household size, education).

Although Aiello et al. (2010) studied on attention on facilities but the satisfaction model still used physical, social and economic model study in neighbourhood area in Rome, Italy. The attributes in socio-economic used for the study are persons living together, families composed by one member, families composed by four members or more, widows or widowers, high school graduates and degree holders, unemployed people, dependence index, old age index, and people working away daily from the neighbourhood. The physical attribute used residential urban quality indicators, architectural and town-planning features (architectural and town-planning space, organization of accessibility and



roads, green areas presence and care of green areas) services or facilities (home assisted old people, market places, commercial services, libraries, recreational services, sports services, restaurants, social and health-related assistance services, cultural services, public transportation), crime and security (crimes, pick-pocketing and bag-snatching, car burglaries, car accidents, intentional murders, arrests and denunciations). The social attributes used are social relations features (people and social relationships insecurity) and context features (psychological "climate", Chaotic lifestyle, environmental health, care and upkeep). Erkip (2010) concentrated on high density neighbourhood in Ankara, Turkey. The consideration for conceptual framework in satisfaction model wide-ranging the socio-demographic (sex, age), socio-economic (middle income, high income, homeownership, owner, tenant) and neighbourhood quality (neighbourhood security, increase in the property value, neighbourhood homogeneity, neighbourhood satisfaction, dwelling satisfaction, positive social image of neighbours, exclusive tendencies, community organization, avoided parts of the city).

### **Neighbourhood Quality in Malaysia**

Malaysia does not experience much research in residential satisfaction model for neighbourhood studies. Most research focuses on physical model or physical and social model. The researches used multivariable in evaluating and measuring the neighbourhood quality by using the satisfaction model. Generally the studies pay more attention on low cost public housing because of the issues in providing good quality of neighbourhood area for the low income people in Malaysia.

### ***The Physical Model***

Karim (2008) presented the satisfaction concept in low cost public housing in Shah Alam, Malaysia. The elements for conceptualisation in community facilities are kindergarten, primary school, secondary school, children's playground, playing fields, grocery shops, mini markets, food stalls, restaurants, private clinics, government clinics, 'surau', mosque, community hall and public phone. Salleh (2008), provided the satisfaction concept in low cost public housing in Penang and Terengganu, Malaysia. The study used three main variables for conceptualising the satisfaction model which are dwelling features (living area, kitchen area, dining room area, bedroom area, washing room area, room arrangement, air circulation, number of socket, level of socket, clothes line facilities, garbage line, noise), services (pipe repairs, electrical wiring, water supply, garbage disposal, safety) and facilities (preschool, primary school, secondary school, clinic or hospital, telephone, market, children's playground, public transport, parking lot, place of worship, community hall, facilities for handicapped, police station, fire

brigade, nursery). Some studies conceptualise only on single element for conceptualising the satisfaction evaluation in physical factors.

### ***The Physical and Social Model***

Hashim (2005) presented conceptual framework in a study of neighbourhood in Central Shah Alam, Malaysia. The community facilities used to evaluate the satisfaction by the residents' encompassing with secondary schools, primary schools, Islamic primary schools, public kindergartens, mosques, 'surau' (small mosque), community halls, fields and playgrounds, open spaces and recreational areas and community programs. Whereas Omar (2008), has constructed focusing on the community facilities and social facilities for conceptual framework for the study of low cost public housing in Malaysia. The community facilities include schools, playing fields, religious centres, community halls, recreational areas and libraries. Meanwhile, the community facilities include secondary and primary schools, community hall, religious centre, business area and shop lots. A bus terminal is provided for public transportation service and open spaces.

Mohit et al. (2010) has conceptualised the framework for the study in low cost public housing in Kuala Lumpur, Malaysia. The satisfaction model conceptualised with five main variables which are dwelling unit features (living area, dining space, kitchen space, bedroom-1, bedroom-2, bedroom-3, toilet, bathroom, dry area, socket, house ventilation), dwelling unit support services (corridor, staircase, lift, fire fighting, cleanliness of drain, street lighting, garbage collection, cleanliness of garbage house), public facilities (open space or play area, car or motorcycle parking, prayer hall, multi-purpose hall, perimeter road, pedestrian walkways, public phone, local shops, food stalls), social environment (noise level, accident situation, crime situation, security control, community relations), neighbourhood facilities (distance to the nearest town centre, distance to work place, distance to school, distance to police station, distance to the hospital, distance to the shopping centre, distance to market, distance to public library, distance to religious building, distance to the Light Railway Transit (LRT) Station, distance to the bus station, distance to the fire station).

## **DISCUSSION AND CONCLUSION**

Generally the research in neighbourhood quality has been influenced by the physical, social and economic factors. Thus, many researchers focus mainly on the formulated study, the theoretical and conceptual model by using these three factors either in physical, social or economic settings. These three factors use the multivariable as a basis in formulating the model. Physical model can be divided into four categories which are dwelling unit, facilities and



services, accessibility and surrounding environment. Social model can be separated in terms of socio-demographic, social community and social interaction. The economic model will focus on the socio-economy of the resident profile background. As discussed earlier, there are not many studies done in neighbourhood quality in Malaysia especially at mix housing development areas. Most researches focus on low cost housing area for the residents' needs and requirements for low income people in Malaysia.

The studies used multivariable in evaluating and measuring the housing and neighbourhood area as a general findings of all multivariable. Basically, the theoretical framework for the research used either physical model or physical and social model. Thus, for further research in neighbourhood quality in Malaysia, the possibilities that can be focused as in depth research is probably only on one type which is the physical aspect such as dwelling unit, facilities and services or accessibility and surrounding environment. The social aspect perhaps can focus on socio-demographic, social community or social interaction. Economic aspect may concentrate on socio-economic of the resident. The possible setting area for the in depth study probably at high cost housing scheme, medium cost housing scheme, public housing or mixed housing development area. The location of the study can be in medium density area, high density area and low density area. The possible satisfaction conceptual model used for evaluating can be in physical, social and economic model. The expected result will be categorised in terms of socio-economic and socio-demographic to the physical, social and economic factors. The expected outcomes will evaluate the existing situation provided to the residents in housing and neighbourhood area. With these expected findings, it will help confirm the factors influencing housing and neighbourhood areas for a satisfied neighbourhood quality. The expected implication will be compared with the existing standards and guidelines used by the local authority for future improvement and development for the needs and satisfaction of the people.

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Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim  
Rektor  
Universiti Teknologi MARA  
Cawangan Perak



Tuan,

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Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

**“BERKHIDMAT UNTUK NEGARA”**

Saya yang menjalankan amanah,

**SITI BASRIYAH SHAIK BAHARUDIN**  
Timbalan Ketua Pustakawan

PROF. MADYA DR. NUR HISHAM IBRAHIM  
REKTOR  
UNIVERSITI TEKNOLOGI MARA  
CAWANGAN PERAK  
KAMPUS SERI ISKANDAR

*nar*