PEOPLE'S PERCEPTION TOWARDS THE CONTRIBUTION OF COMMUNITY MALLS TO LOCAL ENVIRONMENT AND QUALITY OF LIFE – A CASE STUDY ON THREE COMMUNITY MALLS IN BANGKOK

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ABSTRACT

'Community mall' is a new type of shopping mall in Thailand. Over the past years this type of mall has spread throughout the urban areas of Bangkok. One of the major advantages of community malls is to move goods and services closer to people, thus reducing traffic congestion in the city center. 'Community mall' is a popular term used to describe a neighborhood shopping mall. The characteristics include various facilities and services such as supermarkets, drug stores, restaurants, retail stores, learning centers and banks under an open-air style arcade. Moreover, green recreation areas are usually part of community malls' concept.

This study investigated people's perception of community malls' contribution towards the improvement of local environment and quality of life at three different locations. Questionnaires were distributed to 90 respondents to investigate their personal perception. Interviews with the management of the community malls were carried out to provide additional information. The study found that more than 50% of the respondents indicated improvements in their travel behavior such as reduced distance travelled, reduced time spent driving and reduced fuel consumption. In addition, the appealing design of trees and green space, places to sit and relax and condition of sidewalks were highly appreciated. From the study it can be concluded that in the perception of the people, the quality of life and the local environment have improved by the establishment of community malls.

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INTRODUCTION

1.1 Background

Bangkok is well known for its severe traffic problems that have been building up since the economic boom of the mid 1970's, where infrastructures did not grow with the country's economy and modernization (Rujopakarn, 2000). While sanitation, education and other challenges may improve with economic growth, moving around in urban areas often becomes more difficult, especially in developing countries. Bangkok in particular is challenged by this problem, for as the city developed various suburban real estate projects, high-end shopping malls in tourist areas, and increased foreign investments, so its urban transportation models, appropriate city planning and sustainability concepts remain neglected. *"The way cities are built affects to large degree how people will live for hundreds of years to come"* (Penalosa, 2002, page 1)

Bangkok was known as "Venice of the East" from late 17th - 19th (figure 1.1) century during the time King Rama I up to when King Rama V ruled the country. The city was drained and constructed with waterway networks as the main means of transport system and used for trading and to spread out fertile agricultural areas. Back then, the city was constructed with definite plans in mind, where canals were dug with a clear purpose and modern roads were well planned with several lanes and wide pedestrian pavements. Such example can be seen on Rajadamneon Avenue. However, the modern technology that came with economic boom and often under the influence of political corruptions led to inappropriate urban transport planning that shaped Bangkok city to grow haphazardly. In that time, the automobile equated to wealth and modernity, thus canals were paved over to make roads and road projects became the only outlook for the city's transport (Kanchanalak, 2012).

Figure 1.1: Thailand in the olden time known as "Venice of the East" (from Kachanalak, 2012)

Thailand was introduced to international planning concepts through the implementation of the 1st national economic and social development plan (1962-1966). The 1st – 3rd (1962-1976) plans emphasized the acceleration of economic growth and basic infrastructure development without much consideration of land use. The 4th plan (1977-1981), included the concept of channeling economic and urban growth away from Bangkok to regional cities as well as major recommendations such as the construction of a mass transit system, roads under a public transport oriented policy and the restriction of car ownership / use. However, the plan failed to meet its objectives after officials invested 10 billion baht on major roads development in Bangkok inner areas to satisfy pressures within the existing built up areas (Rujopakarn, 2000).

Several road projects have been established in Bangkok. Most of which have proved to be short term relief to traffic problem. Increased road space induced travel and encouraged vehicle ownership to grow, which then impacted on traffic congestion (Noland, 2003; Jansuttipan 2012)

In 2003, Bangkok had 600 new cars being added to the roads everyday (Kenworthy, 2003). Accordingly to the Thailand Automobile Institute, the trend in domestic car sales and exports rose from 1998 to 2012 (Figure 1.2). Statistics show that the end of November 2010 Thailand had 28,287,374 million vehicles registered for road use. 4,479,310 were private car, 4,882,861 were pick-up trucks, 17,094,099 were motorcycle, 87,255 public buses and 814,990 were trucks. Bangkok held record for highest ratio. (Thailand Automobile Institute, 2012).

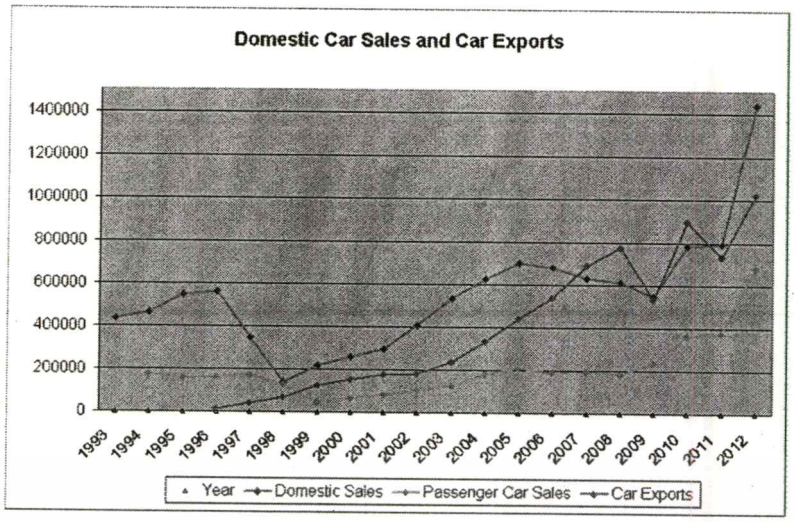


Figure 1.2: Total Domestic Car Sales and Car Export 1993 – 2012 (from Thailand Automobile Institute, 2012)

The recent political scheme the *'First Car Policy'* that provided aids to first car owners with 100,000 baht tax break have showed to add much to the long term congestion problem in Thailand. Statistics show that the number of new cars appearing each day in Bangkok has increased drastically since the policy has been put to practice. Prior to the implementation of the *'First Car Policy'*, Bangkok had approximately 20,000 new cars registered each month during the past 10 years. However, this figure has jumped during July to October 2012, with 20,000 new cars being registered each day (Manager Online, 2012).

For Bangkok to be able to move its inhabitants and economy efficiently, the implementation of an efficient mass transit system is urgently required. Even though there are Mass Transit Systems available in Bangkok, the area covered is still very limited. Since operation in 1999, "Sky Train" (BTS) only has two lines with 29 stations, travelling the total distance of 25.7 kilometers, serving approximately 600,000 passengers per day (BTS Public Company Limited Official Website). In 2004, the CBD district of Bangkok opened a third line, an underground rail system (MRT) along 19.7 kilometers, serving approximately 240,000 passengers per day (Partnership for Development, 2006). In 2010, a new high speed elevated railroad called the Suvarnabhumi "Airport Link" provided connections between the new Airport to MRT Phetchaburi station and BTS Phaya Thai station along 28.5 kilometers travelling

distance. In total there is 75.2 kilometers of mass transport systems servicing in Bangkok (Airport Rail Link official website).

Plans that have been initiated to improve Bangkok transportation foresee heavy investment in the expansion of BTS and MRT lines to connect suburban travelers to their existing city lines. BMA have planned to allocate 55.6 billion baht to complete the first two BTS extensions (Jeerawan, 2009) and by 2015 approximately 34 kilometers will be completed (The Krungthep Thanakom Company Limted Official Website, 2010). In 2011, the MRT purple line and the two extension lines of the blue line have been constructed. The combined route distance of the "Metro" alone will total 91 kilometers with 3 "Metro" lines covering an increasing number of areas around Bangkok. The Blue line, once completed will form a lariat-shaped loop encircling the city (The Nation, 2011). On the south side of the city, plans to extend the "Airport Link" is rather small with only one light rail train connecting Bangna to Suvannabhumi Airport (Jeerawan, 2009).

Bangkok being the capital city occupies the largest urban area in Thailand. Bangkok registered population is approximately 8.2 million residents, although with non-registered total is estimated to be approximately 14,000,000 residents (Adams, 2013). The structure of Bangkok is high density in inner area and a sprawl that expands into outer areas covering 1,500 square kilometers (Thavisit, 2006).

Because the mass transit systems still does not reach all areas of the city, other modes of public transport are used to get to the final destination or to link to another transport system like bus, river-taxi, motorcycle-taxi or taxi. On many occasions, citizens living in the outer suburb have to change 3 modes of public transport before they can reach their final destination. For example, travel from Chacheongsao (a province located just outside of Bangkok) require a local two rows bus known as 'song taew', a train, and a mini-van 'rod tuu' to reach Victory Monument in the city centre. In addition, the service time table for trains and 'song taew' are short and generally end at 9:00 pm.

Developing countries such like Thailand generally have more than one entity operating the public transports. According to Rachel Kyte, World Bank Vice President of Sustainability Development said *"Having a large number of small operators allows for*

low-cost services, but the quality is poor due to severe competition. Other disadvantages include dangerous driving practices, pollution and a tendency to have too much service on profitable routes and virtually no service on non-profitable routes. Meanwhile, single publicly owned entities may offer higher quality of service, but costs tend to be high and the quantity of service is often inadequate". These are some of the challenges public transport faces, hence are the factors that encourage people to travel in private car for comfort and safety reasons (Kyte, 2012, page 1).

Kyte further added that the social image of public transport is another barrier. *"In developing country cities, as income levels go up, people like to demonstrate their enhanced income status by shifting from public modes to personal motor vehicles. The public transport system is seen as the only option for people who cannot afford their own vehicle. As a result, people tend to look down on someone who is using public transport. Getting the image of public transport right is a challenge"* (Kyte, 2012, page 1).

Bangkok being widely spread out and without an efficient rail network is becoming car oriented. That is similar to other 'Car-oriented Cities', such as Los Angeles, Delhi, Cairo and Mexico City (Newman and Kensworthy, 1999). This has made transportation become increasingly linked with impacts on the environment, society and economics (Penalosa, 2003 and Litman, 2010).

Environmental aspects produce concerns on the level of air pollution and noise produced by vehicles. A study by the GTZ shows that in developing countries, air pollutants such as particulate matter and lead, as well as excessive noise pollution contributed to health problem (Schwela, 2001). Bangkok air pollution is rated moderate; however measures need to be taken given the increasing trend in vehicle ownership. In addition, transport also consumes a lot of other resources like time, imported fuel (Walsh and Kolke, 2002), materials and land use (Petersen, 2002).

Transportation has becomes an important dimension in the concept of sustainability, which governments need to address in the coming decades to sustain the environment while improving the quality of life in the city. Some of the main areas for improvement

must consider the efficient use of energy resources, livability and measures to protect the health and safety of people in communities (Schwela 2002).

Some examples of sustainability that stakeholders have picked up includes choosing to use 'green' fuel instead of traditional fuel, driving more energy efficient vehicles, recycling of waste and reducing the consumption of valuable materials. Some commercial areas have prohibited motor vehicle access to lower health risk and increase safety for pedestrians (Kodukula, 2006).

In retail, online shopping has played a role in reducing travel to shops and services. Online shops deliver the item purchased to consumers by post, which helps to minimize travel. There are numerous services that can be done online, for example, internet banking. In terms of retail shopping, one of the booming concepts in Bangkok is 'Community Mall' or 'Nighborhood Center' (Bangkok Post, 2012).

Community malls or neighborhood shopping centers have been defined as:

1. A geographical definition: The smallest type of shopping center, comprising 30,000 to 100,000 square feet. It provides for the sales of convenient goods (food, drugs and sundries) and personal services that meet the daily needs of an immediate neighborhood trade area. A supermarket is the principal tenant.
2. And a retail definition: One of the several standard classes of shopping centers recognized by the Urban Land Institute. The neighborhood shopping center provides for the sale of convenient goods and personal services. It typically has about 50,000 square feet of store area but ranges from about 30,000 square feet to 100,000 square feet (American Marketing Association, 2012).

It is without a doubt that community malls strive for economic benefits. However, there are benefits in the social and environmental aspects, by providing convenient access to goods and service for people through a safe and pleasant outdoor environments and pedestrian areas. These qualities and elements are essential in public space as well as in shopping environment. In addition, public space that integrates nature helps to enhance the neighborhood infrastructure and residents' quality of life as a whole. This new style

of shopping mall is in contrast to the typical air conditioned, building block department stores (Amranand, 2012).

In 1993, the 'Emporium' shopping mall situated on Sukhumvit road in Bangkok advertised in their marketing strategy *"All of life's needs for the Sukhumvit resident, so that 300,000 families here never need to go anywhere else"*. The publicity image mirrored an Indian god, Shiva in a form of a female with 4 hands, holding 4 different objects. The advertising campaign attempted to identify with the key groups of customers inhabiting the area that the mall is in a place for *"one-stop living"*. The 'Emporium' was not a stand-alone shopping mall. The project comprised of a 38 storey building with 350 rooms in a 5 star hotel and a prestige office building. It is clear that customers from the hotel 'Emporium Suite', and offices in 'Emporium Tower' shop at the mall (Bangkok Post, 1993).

Consequently, retail and services that are located in or near residential areas and offices will reduce personal travel. It is no longer necessary to travel greater distance; into the commercial area for basic needs, such as to buy food, go to restaurants, shop or take children to day care and education center, clinics and banks as the goods and services are available near the home and work place. The Environment, Heritage and Local Government stated in its 'Guidelines for Planning Authorities on Sustainable Residential Development in Urban Area (Cities, Towns, Villages)' stated that *"the need to travel can be minimized if other commercial, leisure and community uses, including local employment where appropriate, can be located in close proximity and are well served by public transport"* (Environment, Heritage and Local Government, 2009).

Each person's mode of travel is a factor contributing to environment and quality of life. As mentioned earlier, energy consumption, air pollution contribute to environment. Moreover, peoples' ability to live, leisure and commute impact on their quality of life. Community malls cannot fulfill these ideals if they do not affect the community's travel behavior, i.e. reduce trip distance, and shift travel to non-motorized forms of transport or public transport. In addition, consideration should be given to locating community malls near or integrated with other developments i.e., residential areas, neighborhoods, housing developments and offices to assist in generating and reinforcing the area to be accessible to all by walking or using public transport. Thus, to promote a steady stream

of customers use facilities and services at community malls or neighborhood shopping malls (Environment, Heritage and Local Government, 2009).

Since the layout of community malls is one of open public space, there are various ways to incorporate green space for the community to enjoy. Public open space can have a positive impact on physical and mental well being as it provides spaces to meet, interact; exercise and relax. However, it needs to be appropriately designed, properly located and well maintained to encourage its use. It is one of the key elements in defining the quality of life in the residential environment, in which community malls attempt to contribute (Environment, Heritage and Local Government, 2009).

The main focus of this research was to study the people's perception towards the contribution of community malls to local environment and quality of life. The case study consisted of three community malls in different parts of Bangkok. The study was determined collect information on people's relationship with community mall, their purpose of visit, travel behavior and the environmental and physical characteristics created for the community.

1.2 Research questions

This study answered the following question:

1. How have three different community malls in Bangkok contributed towards improving the local environment and quality of life in its areas?

1.3 Objective of the research

The overall objectives of the study were to investigate the benefits community malls have upon communities living in Bangkok urban growth areas.

1. Firstly, to investigate community malls contribution towards local environment in the areas such as increase green space, reduce air pollution, reduce fuel consumption for access of goods and services, reduce car use, encourage use of

non-motorize form of transport in some aspects to help reduce traffic congestion in city center.

2. Secondly, to investigate the benefits community malls have upon the quality of life, in the area of livability such as increased pedestrian zone, increase recreation area, safe and clean road side and improved public transport to and from goods and services.

1.4 Hypothesis

This study began with the hypothesis that the establishment of community malls has brought benefits to local environment and improved the communities' quality of life.

1.5 Philosophical and conceptual framework

The philosophical framework of this thesis lies in the concept of urban environment. It particularly looks at the improvements community malls contribute towards local environment and quality of life. This research was set out to study the people's perceptions on community malls and benefits contributed towards Bangkok transport setback. Sampling groups, interview with community mall owners and examples from other countries were used to help determine whether transport problems such as traffic congestion, car dependency, inadequate public transport and long travel distance could be relieve through the establishment of community malls. Social and environmental aspects considered were, convenience, facilities for community's enjoyment and participation in sustainable living. E.g., bicycle lane, shuttle bus, green space and road safety. The study would study 3 different community malls as models to see whether community malls would become one of a useful tool for Bangkok sustainable urbanization and transportation.

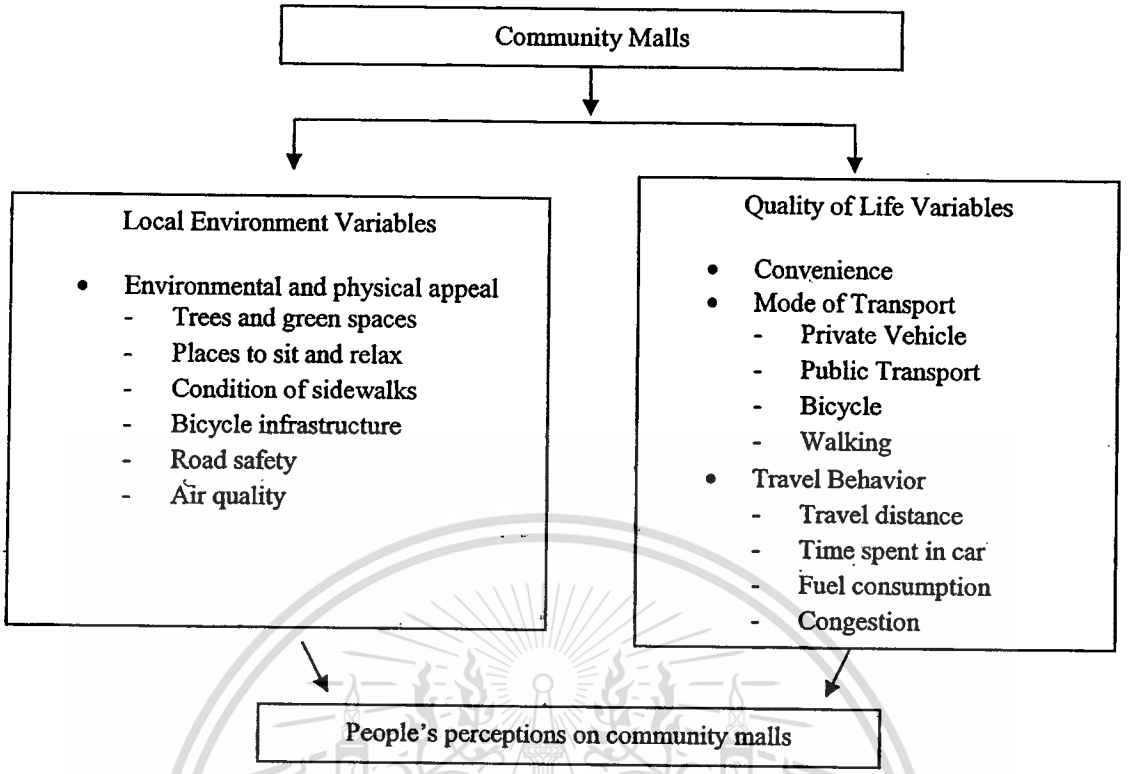


Figure 1.3: Conceptual Framework

1.6 Expected outcome

The results of this study will help in finding:

Recommendations for future developments of community malls in Bangkok. The findings will contribute towards improving the environment and quality of life, especially within residential areas i.e., provide convenient access to goods and services, improve the environmental and physical outlook of neighborhoods, increase recreation area and encourages non-motorized form of transport to reduce fuel consumption, air pollution and congestion in Bangkok.

1.7 Chapter outline

The thesis has been divided into 5 chapters. The current chapter, Introduction, discussed the background of the study along with the research questions, objectives and the conceptual framework based on the study conducted. Chapter 2 will discuss the literature that has been reviewed to support the study. The aspects of local environment,

public space, the impact on car dependency, urbanization, land use, livability, and non-motorized transports practices are included. Chapter 3 will elaborate the methodology of the research along with questionnaire for 90 samples and interview with malls managers and staffs. Chapter 4 will explain the result and discuss the outcome. Chapter 5 will conclude the study with recommendations and discuss the scope for future research and limitations on this study.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

The aim of this chapter is to present the previous research that has been carried out on community malls and sustainability. Various forms of urban development, transportation and consumption will be cited along with the impacts of car dependency and strategies for reducing these impacts. Bangkok urbanization will be described in connection to land use and livability to highlight the essential components required in cities as well as the contribution that pedestrian zoning and a pleasant environment can have for citizens wellbeing.

2.2 Local environment, recreational space and quality of life

The word 'environment' is commonly used to describe 'natural' environment and means the sum of all living and non-living things that surround an organism, or group of organisms. Environment includes all of the biotic and abiotic factors that act on an organism, population, or ecological community and influence its survival and development. Biotic factors include the organisms themselves, their food, and their interactions. Abiotic factors include items such as sunlight, soil, air, water, climate, and pollution. Organisms respond to changes in their environment by adaptations in form and behavior (The American Heritage Science Dictionary, 2010).

In urban development, environment concerns political, social and economic movements. Some of the goals include reducing world consumption of fossil fuels, reducing and clean up all sorts of pollution (air, sea and river) with future goal of zero pollution, clean / green energy sources that have low carbon emissions, sustainable use of water, land, and other scarce resources and protection of biodiversity (Ecological Problems, 2013).

The local environment of different urban forms e.g., neighborhoods or residential areas, refers to the immediate surroundings of those areas. The goal is to create high quality places for the resident and visitors. It has been described as (i) local environment

should enhance and protect green infrastructure and biodiversity. (ii) minimize car use through management of walking, cycling space and accessibility to public transport. At the same, promote efficient use of land, energy and minimize green house gas emissions. (iii) local environment should present an attractive, well maintained appearance of the place, a distinct sense of place and a quality public space to enhance social integration in the communities. (iv) a mix of land uses should be applied. As well as provide good range of community and support facilities that are easily accessible to minimize transport demand. Most importantly, local environment should deliver a quality of life in terms of amenity, safety and convenience (Environment, Heritage and Local Government, 2009).

To specifically describe recreational space, a study conducted in New York City concluded that the success of these spaces in attracting people depends on their characteristics and elements. European cities recreational spaces often include theatrical opportunities and traditional markets, (Whyte, 1980). Both studies categorized the characteristics and elements appearing in successful recreational spaces in relation to traditional markets as:

- Sitting elements such as benches, chairs, steps with adjustability choices to facilitate rest, socialization and comfort.
- Aesthetic and comfort elements such as trees and water accompanying sitting areas to provide pleasant and restful experiences.
- Retail elements such as traditional markets provide variety and activities for recreational spaces. Food venders, surrounded stores, cafes and open restaurants to attract people and support socialization.
- Theatrical opportunity that comprise of performance and sitting venue i.e., an amphitheatre-like slope or a stage with seating. The gathering of people, performers and activities gives a festive atmosphere and entertainment for the public.
- Accessibility that is convenient for the public to travel to and from the area.
- Visibility and landmark to draw attention and invite people.
- Enclosure elements such as shelters, arcades and walls provide intimacy and comfort.

Quality of life concentrates on the present well-being of groups or individuals. The areas covered may be categorized into five dimensions i.e., physical wellbeing, material wellbeing, social wellbeing, emotional wellbeing, and development and activity. Quality of life and the natural environment form an important relationship for the economy, especially, in the area of poverty and sensitivity towards natural environment. These concepts can be linked to ecological economics or sustainable development (Dasgupta, 2001). Quality of life measures and aims to set standard for various aspects in their concerned dimensions.

2.3 Applying quality of life principles in cities and community malls

In pre-car times, cities were planned depending on the needs of pedestrians, taking into account both their social and business needs; there were porticos, canopies and other facilities to protect from weather, and travel distances were kept short so that destinations could be reached on foot or by bicycle. But this approach of planning changed as cars become more common, and has now been abandoned in many cities and particularly, those in developing countries. Cities came to be planned with the primary focus being personal mobility and reducing the inconvenience of people walking to shops, work places and other destinations (Mumford, 1961).

The changes to urban form that were enabled by the private cars have facilitated an unparalleled physical expansion of cities. Firstly, the rise of motorized road transport freed industry from the need to locate near the city center, allowing them to relocate almost anywhere, such as the urban fringe where land was cheaper. Such a move encourages urban sprawl. In this sense, the rise of car use and personal mobility encourages suburban development that is further away from the CBD, and increases the distance to work places and other destinations. Secondly, manufacturing industries and governments need to move goods and provide services, and the ensuing expansion helped make cities car dependent. Slow development and poor management of public transport and an increased focus on new road projects has a negative impact on sustainability by lowering population densities and increasing energy consumption (Mumford, 1961). Many cities today, Bangkok included, have followed the path that Mumford warned against.

In 2006, the Irish government recommended in the Environment, Heritage and Local Government guidelines that residential authorities should promote increased residential densities in appropriate locations, including in cities and larger towns (defined in the guidelines as towns with 5,000 or more people). The recommendation was based on significant social, economic and environmental considerations including the trend towards smaller average household sizes, the need to encourage the provision of affordable housing, particularly in the greater area and the need to reduce CO2 emissions by reducing energy consumption and to support a more efficient use of energy in the residential and transport sectors, in line with Ireland's commitments under the Kyoto Protocol (Environment, Heritage and Local Government, 2009).

Advice on the criteria to be considered in the design and assessment of higher density residential development include designs that have appropriate building heights, avoid overlooking and overshadowing, provide adequate private and public open space, such as landscaping where appropriate and safe play spaces, suitable parking space near schools, and the provision of child care centers (Environment, Heritage and Local Government, 2009).

Such design guidelines link directly to the design planning of neighborhood centers and community malls, as they are one of the key elements in defining the quality of the residential environment and livability. For neighborhood centers and community malls to meet quality of life criteria, they need to be well designed, include public open spaces, friendly green spaces, and be connected with adequate transport systems. It is believed that public open space can have a positive impact on physical and mental wellbeing of residents, as it provides spaces to meet, interact, exercise and relax, and provides a refuge where the air is cooler and cleaner (Environment, Heritage and Local Government, 2009).

2.4 Impact of car dependent cities

Especially in developing countries, city residents are becoming dependent on private cars and cities are being redesigned to become more cars friendly. China's capital, Beijing, has been transformed from a bicycle and bus city in just the past 10 years. Many policies in developing countries are being framed to encourage motorized means

of travel, resulting in greatly reduced use of the non-motorized modes and thus making them less safe.

Along the way, this dependency on private cars caused the auto city to lose much of its traditional community support processes (Newman and Kensworthy, 1999). For example, the increase in the car dependent nature of neighborhoods reduced the business of small, local shops within the neighborhood as the large departmental stores became more accessible by car. This change in neighborhood design encourages people to drive more for a trip that could have been done by a walk within the neighborhood, or by bicycle (Santosh, 2006).

Common problems such as air pollution, noise pollution, road accident, loss of public space to cars and parking have reduced the value of the urban spaces and caused difficulty for people who were used to walking and cycling (Hardin 1968). Today's unfriendly and unsafe streets are polluted with particulate matter and noise. Transportation is a major contributor of noise pollution, especially in urban areas. Extended exposure to excessive noise has been shown to produce physical and psychological damage, because of its annoyance and disturbance and this adds to mental stress and fatigue (Schwela, 2002).

To some extent, all cities face traffic congestion problems, and these are exacerbated where car dependency is high. Whether congestion occurs only in certain areas of the city or only during the rush hours, hence, the economic and social arguments are that people are wasting their time, burning fuel unnecessarily and tempers are rising. Transport infrastructure in auto cities concentrate more on road projects rather than on the implementation of an efficient public transport or mass transit system. As people are forced to buy a car to travel conveniently, ownership costs become a burden for people, for example, taxes, certificate costs, maintenance costs, and fuel costs. If developing cities implement rapid transit, travel will be more efficient and natural resources and energy consumed can be reduced. Examples of the efficient rapid transit in European countries include, e.g., The Tube in London, The Metro in Paris and the bicycle infrastructure in many European cities (Penalosa, 2002).

Many cities, especially in developing countries, lack an efficient and convenient mass transit system that can move large numbers of people to their destinations. Mass transit systems are often publicly owned by large stakeholders and under government subsidies. In Thailand, public buses, mini-vans and taxis are privately owned by a range of small stakeholders. According to the World Bank Vice President of Sustainability Development *"...having a large number of small operators allows for low-cost services, but the quality is poor due to severe competition. Other disadvantages include dangerous driving practices, pollution and a tendency to have too much service on profitable routes and virtually no service on non-profitable routes"* (Kyte, 2012, page 1). This succinctly reflects the situation of public transport services in Bangkok apart from the highly efficient but limited sky train and subway systems.

Kyte further added that the social image of public transport is another barrier. *"In developing country cities, as income levels go up, people like to demonstrate their enhanced income status by shifting from public modes to personal motor vehicles. The public transport system is seen as the only option for people who cannot afford their own vehicle. As a result, people tend to look down on someone who is using public transport. Getting the image of public transport right is a challenge"* (Kyte, 2012, page 1). Again, an accurate reflection of the attitude of people in Bangkok and their strong desire to purchase their own car and cease travelling on public modes.

Through this arrangement, automobile domination impacts heavily on the social domain as funds have been put into road maintenance projects, mainly serving the wealthier sector of the community. In a fairer, more equitable society, resources put into road maintenance could be shifted to benefit the poor through an efficient and safe public transportation system and the non-motorized modes. And most importantly, it would allow cities to become a place primarily for people rather than for vehicles (Penalosa, 2002).

In terms of safety, transportation has a very unfortunate impact on societies by increasing the potential for accidents. The increased variation in speeds and vehicle density in cities results in high exposure to accidents that may end in the loss of life, permanent disability, injury and damage to property. Worldwide deaths and injuries from road accidents are now in the millions every year with statistics showing that

deaths from road accidents have reached 1.24 million (World Health Organization, 2013). Accidents also causes numerous non-quantifiable impacts like loss of time, grief to the near ones of the victim, and inconvenience to the public (Lacroix and Silcock, 2002).

Accidents from the transport sector are widespread and common. A recent study has predicted that death and disabilities resulting from road accidents in comparison with other diseases will rise from 9th to 3rd rank between 1990 and 2020. Road accidents as a cause of death and disability could outrank stroke and all infectious diseases, just below heart disease and clinical depression. Significantly lower accident rates are achieved in the more developed countries through improved road design and maintenance, improved vehicle design, driver education, and law enforcement. However in the developing nations, the rapid growth of personalized vehicles and poor infrastructure, road design, and law enforcement has resulted in growing accident rates (Lacroix and Silcock, 2002).

2.5 Reducing the impact of cars

A number of methods are at hand to reduce the negative impact of cars. Land use policies that promote higher densities, mixed land uses where new residential areas are linked to efficient rail networks as well as investment in non-motorized modes can minimise distances between destinations and the need to travel by car. Sustainability agenda has recommended how cities should be structured to avoid the biggest threat of car dependency in cities. Experience has shown that car dependent cities can change over time and can become more sustainable through well planned re-urbanization processes that work towards traffic calming, and which provide transit and bicycle infrastructure in both old and new suburbs, and improved street planning that consider pedestrians, cyclists and growth management (Newman and Kenworthy, 1999).

Traffic calming involves a major redesign of roads, including the narrowing of entrances to the streets, building chicanes, imposing lower speed limits, speed humps, the introduction of street furniture such as tables and benches, and the planting of trees and other vegetation. Such measures will reduce traffic speeds and encourage greater pedestrian use. One of the new ways of implementing traffic calming in Debenhams in

England was to turn the busy roundabout into a pedestrian friendly zone. Taxis and buses are the only motorized forms of transport allowed to enter the roundabout, leaving more space for people to ride bicycles and walk (The Bristol Post, 2012).

Many cities in developed countries have pedestrianised their streets and urban villages into a walking core as people discover the beauty and joy in natural and active ways of living. Even Thailand has introduced 'walking streets' in Phuket and Pattaya as well as Khao San Road in Bangkok. As popular as these streets are with Thai people, they are nevertheless all in the major tourist centers of the country. Other cities in Asia have also found success in applying sustainability principles to urban environments. Singapore and Hong Kong have invested heavily in rail networks and introduced policies to limit car ownership and use. Both cities have built booming service economies partly on the back of clever sustainability planning with an emphasis on livability. Many European cities such as Zurich, Copenhagen, Stockholm and Freiburg are also examples of true success stories of sustainability planning (Newman and Kenworthy, 1999).

Following the example of Singapore, London has introduced and strictly enforces restrictions on the use of cars in the central district. Through the imposition of an entry fee upon private cars that enter the CBD district during peak hours, people are encouraged to use public transport, bicycles and walk.

Another traffic planning solution that has been successfully utilized by many cities is to redesign the central city into a pedestrian zone. The aim is to keep cars out of the central city and encourage people to walk, ride bicycles or use the provided public transport options. Fort Worth in Texas created 'The Pedestrian Paradise' with architect Victor Gruen's plan to *"let people drive up to the edge of the business center on spacious perimeter expressways, give them plenty of parking space, then make them get out and walk. Allow no cars at all in the central area and endow it with so many eye-filling, imaginative and compelling features that workers and shoppers would rather head for the heart of Fort Worth than anywhere else in Texas"*(Bello, 1958, page 45). This is one solution to the kind of urban form found in the United States, but with imagination could be adapted to the more dense Asian cities.

As examples, the major aspects to consider in overcoming car dependency includes traffic calming, favoring alternative modes of travel, applying economic penalties and land use management to sustain non-auto dependency. Cities such as Freiburg in Germany, Boston in the United States and Perth in Australia have applied different strategies for overcoming car dependency. Zurich in Switzerland as well as Hong Kong and Singapore has employed a range of strategies (Table 2.1).

Table 2.1: Zurich, Hong Kong and Singapore Strategies for Overcoming Automobile Dependence (from Newman and Kenworthy, 1999)

Traffic Calming	Favoring Alternate Modes	Economic Penalties	Non-Auto Dependent Land Uses
Zurich			
Regional traffic calming. Extensive thirty kilometer per hour zones. Development of selected transit malls and pedestrian zones. Reclamation of traffic lanes for light rail. Enforcement of car restraint.	Expansion of the light rail and heavy rail systems and bike / pedestrian lanes. Carefully timed coordination among all services modes. Professional marketing and passenger information campaigns. No extra road capacity and a cap on parking. Rainbow Pass for transit system.	Usual European fuel tax and registration. No congestion pricing. High parking fees.	Containment of growth. Transit directed growth. New urban villages around the rail system. Some mixed use.
Hong Kong and Singapore			
Very low levels of road space to start with and limited amount of new road building to cater to private cars. Limited use of pedestrainization and formal traffic calming schemes. Increasing pedestrian orientation in central area through wide sidewalks, etc.	Heavy investment in mass rapid transit systems. Priority to buses through bus-only lanes, bus-only streets and bus-only turns. Buses favored as surface access to central city through traffic restriction zone (Singapore). Heavy parking restrictions. Effective integration between trains and buses. Development of circumferential rail transit services as well as radial services.	High cost of car ownership and use through high taxes on cars and fuel and certificate of entitlement to purchase cars in Singapore. High parking charges.	City wide planning totally based around the integration of high-density, mixed-use nodes at rail stations on the rapid transit system. Increasing orientation toward pedestrians and cyclists for local access to nodal centers and to transit. Land use planning totally predicated on encouraging non auto modes.

2.6 Bangkok Urbanization

Bangkok, once known as the 'Venice of the East', consisted of a network of canals and people were accustomed to travel by boat. The waterway networks were the main means of transport and were used for trading and spread as far out as the fertile agricultural areas (Kanchanalak, 2012). Only in the 1980's did Bangkok transform itself into an auto city. The result of this development has brought terrible traffic jams, air pollution, traffic accidents and a great loss of livability among its citizens, especially those in the lower income group.

Bangkok has approximately 9 million citizens (United Nation Thailand, 2013) and around 7 million cars registered in the third quarter of 2012 (Jitsomboon, 2012). There are three rapid
transit systems BTS, MRT and the Airport Link servicing 75 kilometers in Bangkok (BTS Public Company Limited, MRT Public Company Limited and Airport Rail Link official websites). Being the capital city, Bangkok attracts a great deal of migrant rural laborers and semi skilled craft men seasonal workers. Without these laborers, Bangkok city and suburbs could not have grown and economic development could not have progressed to where it is today.

Bangkok has developed into a sprawling low density city as people move away from expensive rent and highly congested inner city. The shortage of housing and land has caused the city to grow further away from the city center and into the middle and outer city. The inner and middle city is covered by the BTS, and MRT. Places out of this range are considered outer city areas. Bangkok central business district (CBD) is not situated only in the core, but diverse and cover areas such as Sukhumvit, Silom, Sathorn, Wireless, Plernchit, Phaholyothin, Rama IV roads all the way to Victory Monument (CBRE Thailand Official Website, 2012).

2.7 Land use and transport link

The term 'land use' describes how humans use the land (Lambin, Rounsevell and Geist, 2000). In the urban context, land use refers to how the area within the city has developed and may be residential, commercial, industrial (light or heavy), educational,

recreational, municipal or many other ways. It can also be a combination such as residential-rural where blocks may be larger and allow some amount of farming; or commercial-residential or recreational-educational. The term 'mixed land use' aims to explain an area of land that can be used for a variety of uses, as opposed to single land use which are solely residential or commercial. The way land uses are defined will determine the characteristics of the transport networks (Newman and Kentworthy, 1999).

Rodrigue (1998) expressed that land use is represented in two different types: formal and functional. Formal refers to the pattern, space and aspects related to nature. Functional land use relates to the economic nature of activities such as production, consumption, residence, and transport and is mainly a socioeconomic description of space. Each type of land use implies a set of relationships with other land uses. For example, commercial land use involves relationships with suppliers and customers. The relationship of customers and goods
involves the accessibility to goods and there must be efficient circulation. Since each type of land use has its own specific mobility requirements, transportation is a factor of activity and location, and is therefore associated intimately with land use.

The land use trends in car dependant cities are those of dispersion, or urban sprawl. A city grows in a specific pattern with areas allocated for a specific purpose or purposes, or function. Reasons for the location of the different functions include land value, accessibility and space for expansion purposes. Burgess and Hoyt (Prezi, 2013) land use model described that land use zone has a distinct character (figure 2.1). There is the central business district (CBD) where commercial administrations take place, with shops / offices, sometimes with good access by mass transit, but also with congested roads and only a few residential spaces as land costs are usually high. Next to the CBD and beyond is the inner city, inner suburbs and outer suburb which are transition zones, and a result of population growth. On the transport routes of canal and rail work are development of old and new industrial zones. Although this model describes an urban city land use in an effective manner, the model does not highlight the importance of mixed land use areas and overlooks the out of town transportation, which is the key relation between land use and transport.

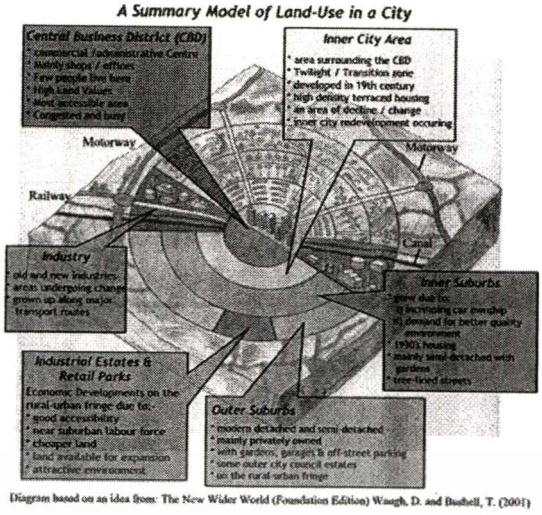


Figure 2.1 Burgess and Hoyt Land Use Model (from Prezi, 2013)

As cities expand outwards, more travel is needed to reach destinations. However, if areas of the city have mixed land uses, travel distance can be greatly reduced because destinations are closer together. Compatible land uses, residential and commercial mixed land use where people can live and work in the same area will encourage non-motorized form of transport (NSW Department of Urban Affairs and Planning, 2001). Mixed land use in residential area with shops, restaurants, services, health facilities and employment minimise travel, reduce travel distance and the need to travel. This allows travel to be done by walking, bicycle or public transport to school, shops and hospitals. Asian cities have traditionally developed in this mixed way, but the trend now is for single use gated communities and individual houses in the suburbs that are car dependent.

Petersen (2002) stated that urban design and modern transport often do not fit together. In other words, the transport system now has to serve a broad range of urban structures, which evolved in pre-car times and which now offer unfavorable conditions to current traffic. However, for cities where land use has not been allocated appropriately, with poor pedestrian infrastructure and no allocated space for bicycles, it is difficult to encourage people to utilise these modes and public transport. For example, residents in Sukhumvit, living within 1-2 kilometers of the ""K Village"" community mall prefer to drive to the mall and restaurant because they feel unsafe to walk or cycle on the street.

Cities with high population density possess the essential requirement of a transit friendly urban form, as urban structures automatically limit the space for cars and

mobility needs can be served by public transport, walking or cycling. However, although Bangkok has reasonably high density of 140 people per hectare, the level of non-motorized transport was ranked the lowest in a study at 10% according to the Relative Performance and Provision for Transportation Modes in Global Cities (1990).

Newman (2001) depicted the traditional walking city and states (Figure 2.4) that this kind of city has high population density and an efficient mixed land use. Non-motorized transportation is featured strongly among these cities, as is seen in many European cities: inhabitants of Amsterdam and Copenhagen use the bicycle and walking for transport up to 35% (Relative Performance and Provision for Transportation Modes in Global Cities, 1990).

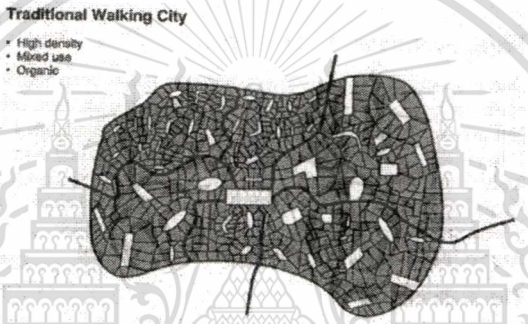


Figure 2.2: Traditional Walking City (from Newman and Kenworthy, 1999)

A range of strategies are available to cities to encourage non-motorized forms of transport and increase walking including orientation in central areas through wide sidewalks and reclaiming land for people rather than for vehicles. Over the years, officials in Hong Kong and Singapore limited road building for private cars, and instead favored alternate modes of travel through heavy investment in mass rapid transit systems, prioritized bus lane, bus only streets and turns. Furthermore, these governments imposed high costs on car ownership (Newman and Kenworthy, 1999).

2.8 Livability

Livability means fit or suitable to live in, habitable, possible to bear and endurable. There are also degrees of livability, whereby some places are more livable than others. The term is often used in urban planning and directed towards determining a city's characteristics and

what it should have to enrich the resident's living experience. Factors under consideration include the quality of public services (water and electricity), the economic environment (banking services), housing, the friendliness of the neighborhood, the availability of green space, the natural environment (climate, air and water quality and the record of natural disasters), law enforcement (low crime rates), education (standard and international school), medical and health care, unemployment levels, transport options, availability of consumer goods, recreation facilities such as entertainment, sports and culture (Mercer Survey, 2012).

Livability plays a role in shaping the urban environment by making it a better fit within the capabilities of local, regional and global ecosystems. A city can be looked at as a living organism, with inputs, outputs and wellbeing, and the city is given uniqueness by its dynamics or drivers such as the priorities put on economics, culture and transportation (Figure 2.3).

Figure 2.3: Extended Metabolic Model of Human Settlements (from Newman and Kenworthy, 1999)

Newman and Kenworthy (1999) explained the biological system as a way of looking at the resource input and waste outputs of settlements. In the model it is possible to specify the physical and biological basis of the city as well as its human basis. The physical and biological processes of converting resources into useful products and waste work in similar way the human body metabolic process or those of an ecosystem.

A sustainable city would consume few valuable resources; produce few wastes while at the same time, enhancing the livability aspects.

Using the model, developers and policy makers can rate their city, what are the good qualities, what are the poor qualities, how liveable is the city and how can it be improved. For instance, are there usable and sociable public areas apart from parks (e.g., pedestrian pockets, traffic-calmed streets, children's play areas in the street)? Is the development designed with public security and safety in mind (e.g., good street lighting, landscaping that provides clear sight lines and few hiding places for intruders, good views from kitchen and living room windows into public areas)? Are parks and children's play areas separated from or integrated with residential areas, and does traffic pose a threat when accessing these facilities? How much mixed land use is there and at what distance is it from the homes? Is a car needed for even short trips? What is the public transport service like, in both frequency and proximity of service and in the quality of shelters and its access to stops and stations? Is the development designed to facilitate social interaction on the street or are people always going to have to be in cars to go anywhere? (Newman and Kentworthy, 1999).

A report on location rating for expatriate (Table 2.4) published by ECA International ranked Bangkok at 11th place among Asian cities and globally at 79th place. The ECA criteria considered factors to form an assessment of the overall quality of living in over 400 locations worldwide. These factors include climate; availability of health services; housing and utilities; isolation; access to a social network and leisure facilities; infrastructure; personal safety; political tensions and air quality (ECA International, 2012).

ocation	Asia rank 2011	Asia rank 2012	Global Rank 2012
Singapore	1	1	1
Kobe	2	2	5
Hong Kong	5	3	11
Tokyo	3	4	17
Yokohama	3	4	17
Taipei	6	6	60
Macau	7	7	63
George Town	8	8	73
Seoul	10	8	73

ocation	Asia rank 2011	Asia rank 2012	Global Rank 2012
Kuala Lumpur	9	10	76
Bangkok			
Shanghai	12	12	83
Bandar Seri Begawan	13	13	92
Beijing	14	14	99
Nanjing	15	15	104
Guangzhou	17	16	112
Xiamen	16	16	112
Shenzhen	18	18	123
Tianjin	19	19	128
Dalian	20	20	130
Ho Chi Minh City	21	21	133
Hanoi	21	22	136
Chengdu	23	23	139
Chongqing	26	24	145
Wuhan	24	25	147
Denpasar	24	26	152
Bangalore	29	27	156
Metro-Manila	27	28	157
Xi'an	32	28	157
Vientiane	29	30	161
Shenyang	31	31	164
Chennai	28	32	167
Mumbai	33	33	172
Colombo	35	34	174
Ulaanbaatar	34	35	177
New Delhi	37	36	182
Phnom Penh	36	36	182
Jakarta	38	38	195
Kolkata	39	39	211
Yangon	39	40	215
Surabaya	41	41	218
Kathmandu	41	42	225
Tashkent	43	42	225
Dhaka	44	44	238
Ashgabat	45	45	244
Islamabad	46	46	251
Pyongyang	46	47	252
Karachi	48	48	261
Kabul	49	49	263

Table 2.2: ECA report on Most Livable Asian Location (ECA International, 2012)

2.9 Community mall

Shopping malls became popular post World War II and can be defined as a *"collection of retail stores with a common parking area and generally one or more large department, discount, or food stores, sometimes including an enclosed mall or walkway"* (International Council of Shopping Centers, 2007). Since then, malls have been adapted to suit the scale of the target customer group with consideration to its location: arcade shopping centers, neighborhood shopping centers, off-price shopping centers, regional shopping centers, strip-type shopping centers. The approximate population for community malls has been given as 40,000 – 100,000 people (International Council of Shopping Centers, 2007), with an operating area of 5,000 – 10,000 square meters (Pathnadabutr, 2012)

In Thailand, 'Community Mall' is a popular term used to describe a neighborhood shopping mall. The characteristics of community malls in Thailand generally include various facilities and services such as a supermarket, a drug store, restaurants, retail stores, learning centers and banks under an open air style arcade. The architecture often has a modern tropical flair to the design, with open-space walk ways and seating areas, unlike the traditional shopping mall that is fully air-conditioned and closed in (Amranand, 2012).

Siam Future Development Plc., a leading firm in the community mall industry in Thailand stated that the community mall concept is not new. It is a modern and urbanised Thai style market that sells groceries, with places for people to eat and meet, so it is not different from the traditional fresh market of the old days (Marukatat and Ngamkham, 2013). Due to the success of community malls such as J-Avenue and La Villa in Bangkok, many new community malls have opened up in many parts of Bangkok, some of which have added creativity in the architecture to increase attraction and differentiate from competitors.

2.10 Benefits of community malls

Sustainability derives various benefits from the establishment of community mall. Socially, people benefit from the convenience community mall provides. As products

and services are located closer to people, the need to travel declines *"as a community mall grows, it pulls in commerce. And as commerce grow; it pulls in more people to settle"* (Shop Owner, 2012).

Access to goods and services has been made easy and distance travel to leisure and entertainment has been reduced respectively. Economically, community malls open up opportunities for land developers by adding value to their housing projects, and increasing land values nearby. Retail space provides a place for small businesses and options for chain stores to expand to the suburbs and outer city, they hence create employment opportunities outside the CBD and in local neighborhoods. Environmentally, in tropical Bangkok, community malls consume less construction material and electricity due to their tropical outdoor design and smaller scale.

A recent poll by ABAC revealed that 71.6% of the people surveyed go to community malls to eat, while 41.3% see them as a place to meet and hang out with friends. More than half of the people questioned choose to go to community malls because of the proximity to their homes, while 46.9% find that community malls offer a full range of services and products. In addition, shopping ranked first as Bangkok people's favorite activity outside their homes (Amranand, 2012).

The outdoor architectural design usually provides for vegetated areas around the malls to cover up the bare concrete infrastructure. Once inside the community mall, there is open space throughout for people to sit and enjoy the outdoor activities that can be done with their family and friends, for example, taking children to play in the children's playground or walking the dog (Amranand, 2012).

Community malls incorporate aspects of nature to create a calming environment that is different from the typical shopping mall or department store. K-Village Executive Director Mr. Nilubol Nandabhiwat has said that community malls design has helped to reduce their electricity consumption, because most of the area such as corridors, walk ways are open-air and there is no need to use so much air-conditioning to keep the place cool. Instead fans are installed in outdoor sitting and walking areas (Nandabhiwat, 2012).

Community malls are designed to be friendly places of leisure and inspiration with pedestrian areas for people to walk and cycle, where children will not always be in cars, and where they have the chance to get in touch with nature and learn from one another (Jacobs, 1961). It fulfills aspects of Jane Jacob's ideas that life on the street has social benefits and improves livability. Having a safe open space attracts people to the street, children come to play on the street, and old people can walk, sit and meet friends. And when more people are on the street, street crime is reduced due to Jacob's 'eyes on the street' principle.

2.11 Conclusion

This chapter looked at the concept of sustainability and its application to urban environments. The literature shows that car dependence is common in cities with poor public transport systems and walking and cycling infrastructure is inadequate. Cities that do not improve their travel situation through investment and proper planning of an efficient public transport system will lose competitive advantage and weaken their economy. Car dependence also causes serious environmental and social impacts, reduces livability, causes congestion and damages air quality. On the other hand, this chapter has shown that the cities that have encouraged non-motorized travel options and increased their efficiency of transit have better diversity, choice and higher quality of life (Newman and Kenworthy, 1999).

Bangkok in spite of being heavily car oriented also has the characteristics of quite high population density and mixed land uses for developing a non-motorized and transit oriented planning approach. Pedestrianisation has been implemented in some areas of Bangkok and the outcome of the study shows improvement in livability for the people and businesses. The research method will be discussed in the next chapter.

CHAPTER 3
METHODOLOGY

In chapter 2, the current references related to the issues of urban environment were presented. Various case studies were looked at which highlighted the environmental, social and economic benefits and effectiveness community malls have upon cities. Benefits could be e.g., reduced travel distance to goods and services and to work. Other benefits could include reduced consumption of natural resources such as fuel used by vehicle and electricity used by the community malls. Encouragement of non-motorized forms of transports in small communities would result in better air quality, increased street appeal of the neighborhood and enhance livability for the environment. These studies were mainly on cities in Europe, USA, Hong Kong, Singapore and Thailand.

3.1 Research method

This research used a method of survey through questionnaires for data collection, using the Purposive Sampling method applied with Typical Case Sampling technique. In addition, interviews with community mall management were also conducted to provide further insight on the industry economic forefront, their plans for future projects and what they contribute towards improving the environment and social indicators. The interview data obtained were quantified in a descriptive manner. Furthermore, the interviews with the management were used to discuss limitations, recommendations and future development of community malls.

3.2 Study sites

There are a growing number and variety of community malls, neighborhood centers and small scale shopping malls in Bangkok in which to collect questionnaire data for this research.

The research was conducted on three community malls to try to capture the influence community malls have on people living and working in different environments and life styles. One was situated within Bangkok's CBD, the second was chosen at a middle distance from the center (middle city) and the third in the outer city area. Other criteria

such as community mall facilities, infrastructure, the energy efficiency of the buildings, accessibility to and from the community malls were taken into consideration during the selection process.

3.3 Sampling and sample size

Purposive Sampling Method, also known as a non-probability sampling method, has been used for the questionnaire. This method selected to include people of interest and exclude those who do not suit the purpose (Patton, 1990). For instance, the questionnaire could be distributed to customers, employees and business owners within the community malls being studied.

There is a wide range of purposive sampling techniques from which to choose (Patton, 1990; Kuzel, 1999). A typical case sampling technique was chosen for this research not only because it helps to access a particular subset of people, cases, events, settings, context, place for the study, but in particular because it classifies the subject as normal and typical. The word typical does not mean that the sample is representative in the sense of probability sampling, e.g. that the sample shares the same or similar characteristics of the population being studied. Rather, the word typical means that the researcher has the ability to compare the findings from a study using typical case sampling with other similar samples e.g. comparing samples, not generalizing a sample to a population. Therefore, with typical case sampling, you cannot use the sample to make generalizations to a population, but the sample could be illustrative of other similar samples.

Purposive sampling is considered to be more realistic than random size sampling in terms of time, effort and cost needed in finding informants (Tongco, 2007). However, such a method is not free from bias due to the non-probability method and informant reliability; and how consistent the information is across the community.

In purposive sampling, an interpretation of the results is limited to the population under study, in this case being the customers, employees and the business owners within the community malls under study. To make the study valid over a greater realm or to form the basis for a theory, the study may be repeated for confirmation in a

different population, but still using the non-probability sampling method (Bernard, 2002). Furthermore, it is essential for the researcher to know how to ask appropriate questions to draw out the information required (Zelditch, 1962) and also state the bias clearly when the result is being interpreted to not mislead people into assuming the result as the general conclusions (Tongco, 2007).

This study investigated the people's perception at three specific community malls as a case study. It did not aim to draw conclusions for other community malls in Bangkok. Therefore, the number of sample used could be limited to only 90 respondents. However, the study can be used to compare with other similar studies that also use non-probability method.

At each location, 30 questionnaires were distributed and in total there were 90 questionnaires completed for the three selected locations. For the sampling to be random, a questionnaire was distributed to every tenth subject that walked past the researcher. Fifteen questionnaires were distributed on a weekday and 15 questionnaires on a weekend day. The questionnaires were distributed in two sessions, morning session (11 am to 4 pm) and evening session (from 6 pm to 8 pm) to get a variety of patterns among the subjects.

Furthermore, a set of questions were prepared for the community mall owner or management to discuss their view on how the community mall has helped in sustainability. These questions were asked through email correspondence (at the owner's request) as well as by personal interview.

3.4 Questionnaire

The questionnaire that was used for the study (Appendix 1) has been designed to support both hypothesis and answer the research questions. The first 4 questions collect the informant's demographic and personal data such as, age, gender, occupation and residential or work area). Questions 5-7 inquire on the informant's usage of the community mall, why they come and why do they prefer go to the community mall rather than to a major shopping mall. Questions 8-10 collect information on the informants home or office travel distance to the mall, their travel patterns (with and

without private vehicle). Finally questions 11 and 12 will inform the views of the informant regarding the community mall's environment and its influence on car use.

The questionnaire underwent a Construct Validity Method (Phelan and Wren, 2005), where the language and sequence of the questions were reviewed by an urban transport and sustainability expert. Moreover, the questionnaire proceeded with the Test-retest Reliability Method, where 15 sets of questionnaires were distributed at each community malls under study. The goal was to assess the stability of the questionnaire and consistency of the results.

The questions used to interview the community mall owners or management (Appendix 2) has been designed to collect information on the community mall's contribution to local environment and quality of life. The first 3 questions gather information on the business's and industry's background. Questions 4-6 collect information on who is the community mall target group as well as ask how many people live and work within the area. The remaining 9 questions open the discussion on local environment and quality of life aspects, especially on transportation such as the number of car parking spaces, the availability of bicycle parking and public transport connections. The questions also asked whether or not sustainability has played a role in influencing the community malls future project. The validity of the questions for the management was also reviewed by an urban transport and sustainability expert.

3.5 Interpretation of results

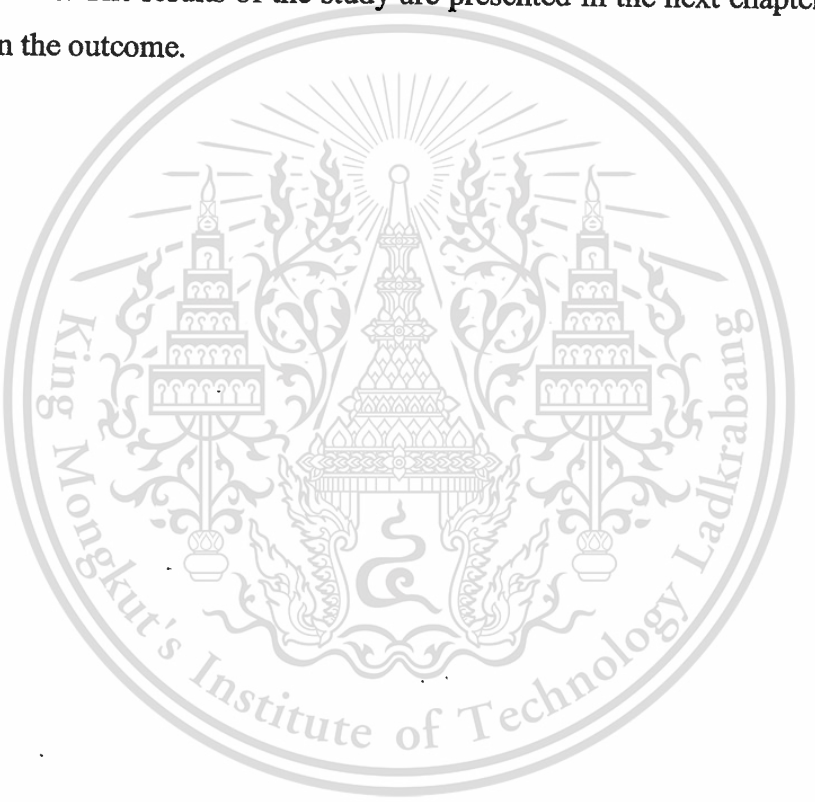
The results obtained have been interpreted within the limit of the population under study. The results of the respondent's answers are analyzed and illustrated in percentage form. The findings from the study will provide valuable information of the customer profile and provide details on how community malls can be adapted to meet higher quality local environment and improve the quality of life of its visitors.

The information gained from the mall managers and owners is descriptive and so there was no interpretation in percentage form. The information will be used to understand the malls' level of environmental and social considerations. To further recommend improvements in this regard, and to enhance the livability of the local community.

3.6 Conclusion

This chapter reviewed the steps involved in conducting the study. The chapter began with discussing the research methodology, information on research sites, and sampling method used. The chosen method was the Purposive Sampling Method as described by Tongco (2007).

The study was conducted using questionnaires and expert interviews. The results were obtained from the customers, workers, owner and management of the studied community malls. The results of the study are presented in the next chapter along with discussion on the outcome.



CHAPTER 4
RESULTS AND DISCUSSION

The concept of local environment, quality of life, urbanization and transportation were discussed in the earlier chapters. Livability that concerns social and environment were explored through land use, walkability, transportation and travel behavior. The current retail business known as community mall has been studied, so to collect evidence of the people in Bangkok travel behavior and benefit community mall contribute towards local environment and quality of life. The method of conducting the research, sample selection and sizes using purposive – typical case sampling technique (Patton, 1990; Kuzel, 1999) were also discussed in Chapter 3. The aim of the current chapter is to document the results of the research conducted and explain the validity of the results based on theoretical and practical knowledge.

This chapter begins with general information of the community malls studied. The respondents demographic, purpose of visiting the community mall, living distance, mode of travel, opinions on the environmental and physical characteristics are interpreted within the limit of its population under study and illustrated in percentage form. The three community malls management views are cited in descriptive form.

4.1 Community malls under study

Three community malls were selected for the study. Each community mall is located in different parts of Bangkok (CBD, middle city and outer city). This section provides detail information on the community mall outlook environmentally and physically. The community malls under study were:

- "K Village" (CBD)
- "The Nine" (middle city)
- "The Paseo" (outer city)

The nature of the three researched community malls has one key characteristic different to the traditional shopping mall or department store that is closed-in or inside air-

conditioning building, whereas the community malls are open-air and customer have to go outside to get to the next shop or different part of the building. This open-air style fits more to the traditional Thai style market.

4.1.1 "K Village"

"K Village" is a community mall located in Sukhumvit soi 26. It is situated a few minutes from Sukhumvit road, Bangkok's main commercial artery and shopping route and is close to Rama 4 road another main thoroughfare. "K Village" is a popular hang-out spot for residents and office workers in the area. The mall has a medium size gourmet supermarket, providing a wide range of basic and international ingredients suitable for the multicultural communities living nearby. There is a selection of Thai and international fine dining, fashion boutiques, health and beauty clinics established in the two-storey buildings. In addition, Ayutthaya Bank has opened a small branch.

The community mall is open-air. The walk way and pedestrian areas are wide and vapor fans are turned on to help keep the temperature comfortable (figure 4.7). The buildings are surrounded by large trees with relaxing outdoor spaces such as benches, courtyard (figure 4.2 – 4.4) and a children's playground (figure 4.9). "K Village" is bicycle and dog friendly, bicycle parking is available and a dog toilet with plastic poop bags is provided on the premises. Artworks and cultural aspects such as paintings are displayed at the mall, which can be exhibited inside the mall's art gallery or displayed in the pedestrian area (figure 4.6). "K Village" is located in a residential area with nearby office buildings. It was designed as a place for friends and family to meet in a relaxing ambient. Friends can conveniently meet after work and family can enjoy leisure time in a safe outdoor environment on weekends. Construction began in 2007 and opened for business in March 2010.

Figure 4.1: The environment at the entrance of "K-Village"

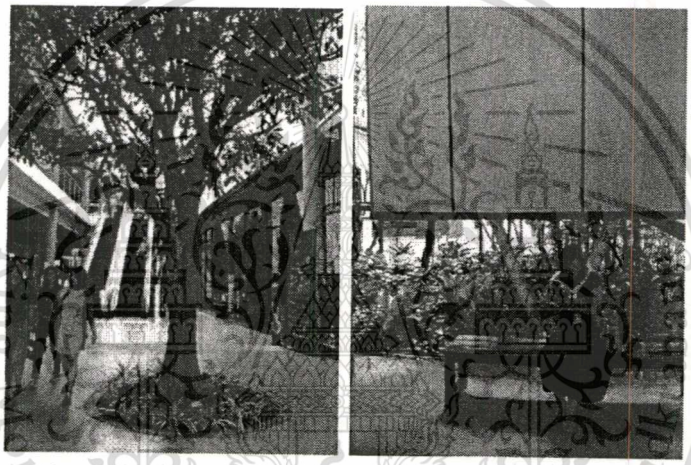


Figure 4.2 - 4.3: The environment inside "K-Village" with trees (left) and places to sit (right)

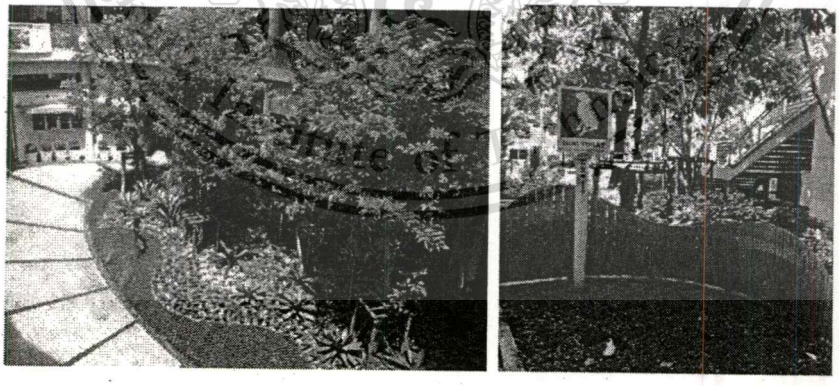


Figure 4.4 and 4.5: The environment inside "K Village" courtyard and dog toilet

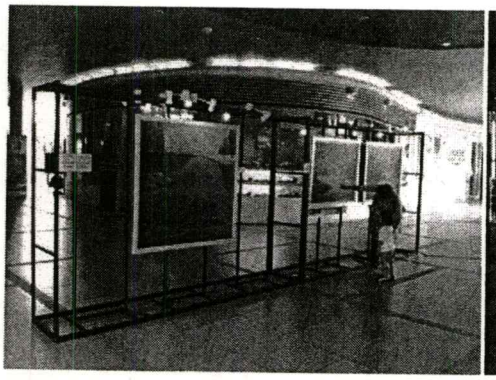
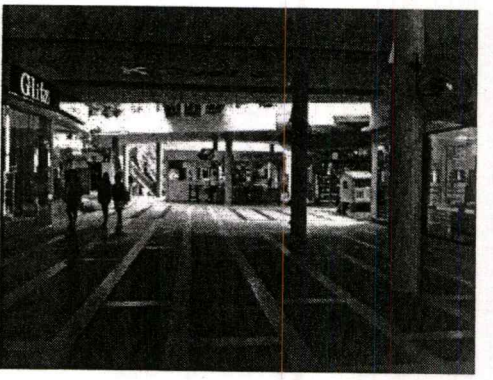



Figure 4.6 and 4.7: "K-Village" open space for art displays and corridoor

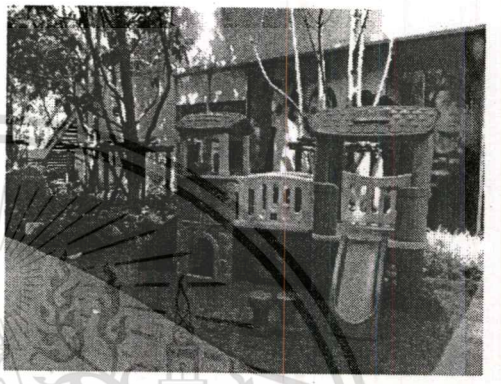



Figure 4.8 – 4.9: "K-Village" bicycle parking area and children's play ground

The surroundings area consists of a mix land uses, private houses, condominiums, schools, hotels, mega shopping malls such as The Emporium, Tesco Lotus, Big-C, Nihomachi (strip type shopping mall) and office buildings.

4.1.2 "The Nine"

"The Nine" Neighborhood Center ("The Nine") is situated right on the main road of Rama 9. This location is accessible by car from both suburbs in the outer city, and it is adjacent to a large housing community called "Seri Village" and just a few kilometers from the Motorway entrance going to Chonburi, the Suvannabhumi Airport and other residential areas such as On-nuch – Ladkrabung, Romkhao and Kingkaew.

"The Nine" facilities and services are separated into 5 categories: life style, dining, beauty, fashion and learning. The life style zone includes services such as banks, book store, gadgets and gift shops. The dining zone provides a selection of dining experiences from traditional Thai, Chinese, Japanese and Italian food to fine dining and wine bars. The beauty services include hair salon, spa services for body and nails as

well as a high-end skin doctor clinic and salt therapy from Jordan. Fashion stores include shoes, accessories and a famous spectacle chain store. The learning zone is organised with a child play center, language, music and art school.

The architecture and interior design style is tropical modern. There is a large open-air space from the ground floor to the ceiling, and it thus provides a very pleasant environment and ambience for customers (figure 4.10). Public seating is available throughout the ground and second floors (figure 4.12). It is relaxing to walk around each floor, especially when seeing trees growing beside the building. There are two entrances to the community mall, one on the main road and one on the "Seri Village" road. It is possible for the resident in the "Seri Village" and the nearby streets to walk to "The Nine", because of the location and the quiet street environment.

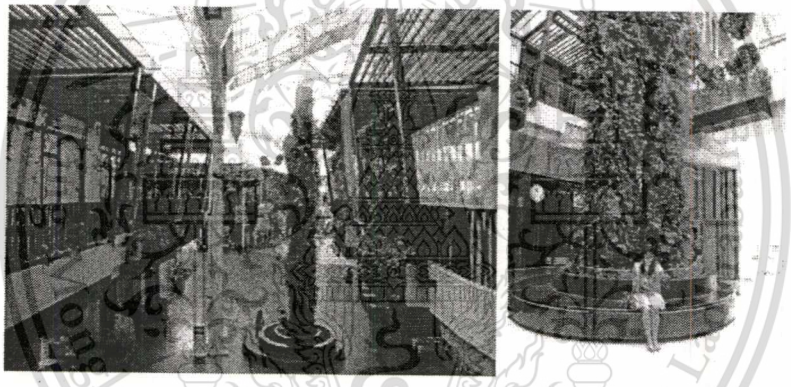


Figure 4.10 – 4.11: The environment within and places to sit within "The Nine".

Figure 4.12 – 4.13: "The Nine" open spaces for activities ("The Nine" official website).

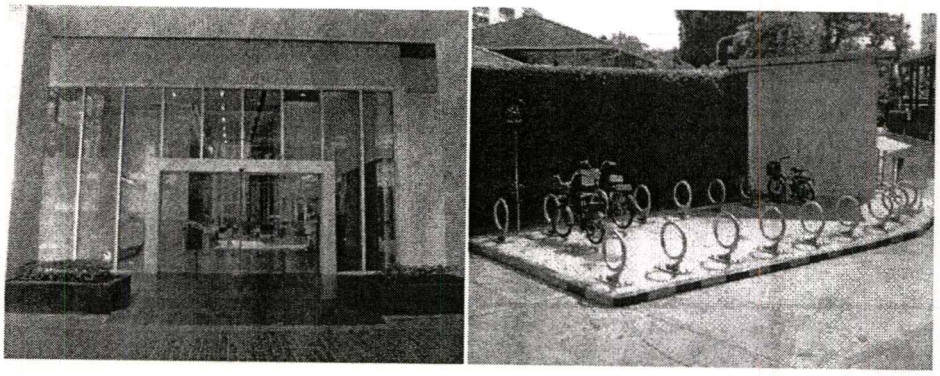


Figure 4.14 and 4.15: Tanachart Bank office building and bicycle parking

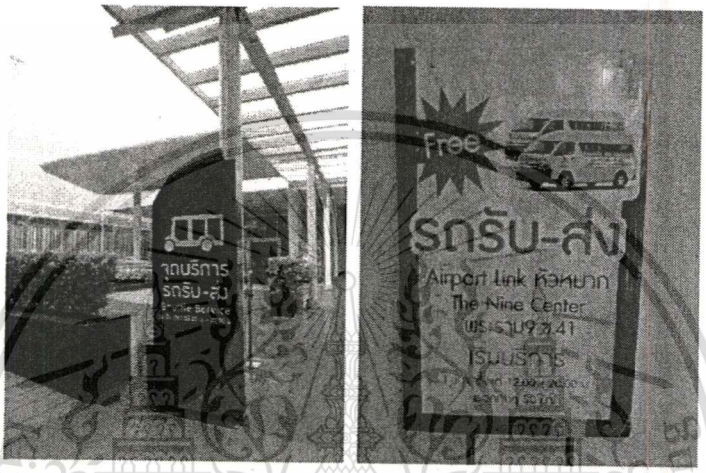


Figure 4.16 and 4.17: "The Nine" bus stop for car park pick up (left) and shuttle bus service from Huamark Airport Link station to "The Nine" (right)

4.1.3 "The Paseo"

"The Paseo" serves the On-nuch – Ladkrabung and Suvannabhumi areas since 2008. This community mall is situated on the main road of On-nuch – Ladkrabung and is central to many high-end housing projects and condominiums that recently spread to the outer side of Bangkok. Ladkrabung is one of the closest suburbs to the Suvannabhumi Airport and industrial sites, and it therefore houses many blue collar workers. "The Paseo" facilitates over 100 permanent stores and 100 temporary stores in the form of a night market 5 days a week (figure 4.20). The services include banks, health care clinics, beauty spa, children learning center, child care, restaurants and fashion stores.

The green space provided is rather small; however it is situated near the bus stop and provides shade and a pleasant environment for the public transport user (figure 4.24). The main parking lot is situated behind the building, which separates car fumes from

the main shopping environment. The road environment is safe with various crossing areas and the foot path is not congested like on Sukhumvit road.

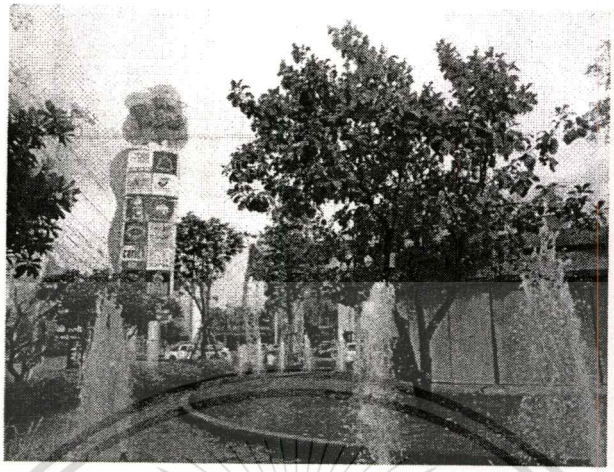


Figure 4.18: "The Paseo" entrance

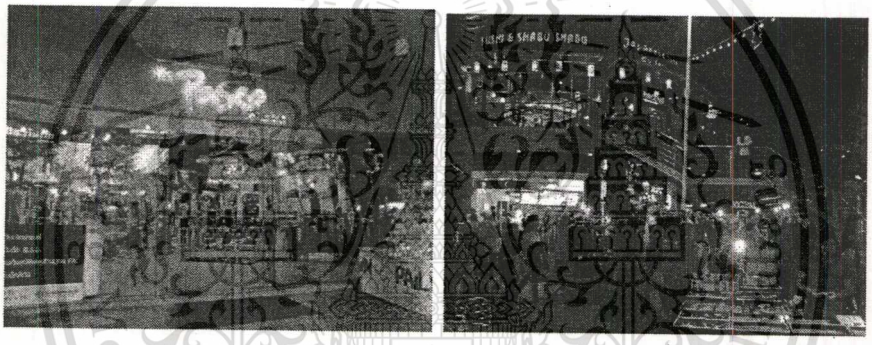


Figure 4.19 and 4.20: "The Paseo" retail experience, inside a plaza (left) and outdoor night market (right)

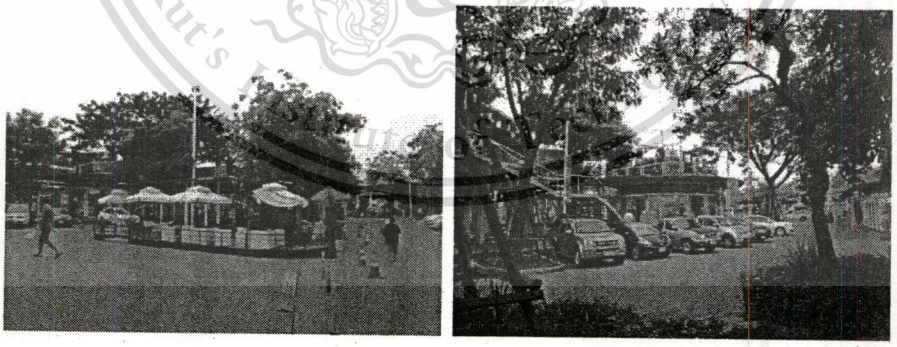


Figure 4.21 – 4.22: The environment inside "The Paseo"

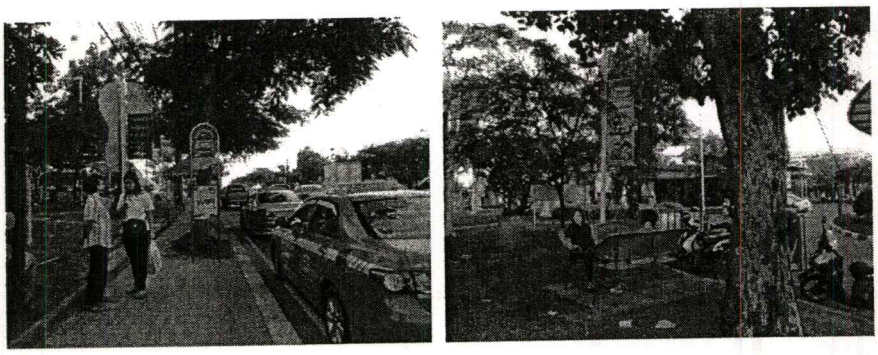


Figure 4.23 – 4.24: "The Paseo" public transport waiting areas with seatings beneath the trees

4.2 General information of the respondents

This section reports the respondents demographic information such as gender and occupation.

4.2.1 Respondents

The data for the research was collected from customers, retail shop owners and workers at the study site. A total of 90 questionnaires were distributed equally at 3 community malls. On average, 43% of the respondents were 'male' and 57% 'female' (table 4.1).

Table 4.1: Respondents by gender at three community malls

	K Village	The Nine	The Paseo	Average
Male	37%	40%	53%	43%
Female	63%	60%	47%	57%
Total	100%	100%	100%	100%

4.2.2 Occupation of the respondent

The majority of the respondents were community mall customers whose occupation included 'students', 'office workers', 'government officials', 'business owners' and 'others' (table 4.2).

Table 4.2: Respondent's occupation

	K Village	The Nine	The Paseo	Average
Student	0%	23%	10%	11%
Office worker	57%	30%	50%	46%
Government official	3%	3%	10%	5%
Business owner	17%	27%	7%	17%
Others	23%	17%	23%	21%
Total	100%	100%	100%	100%

'Office workers' were the most common occupation among the respondents. "K Village" being located in the CBD had the highest number of respondents under this category (57%). "The Paseo" that is situated within several large factories and offices was second highest in this category (50%). The next group of respondents was made up of 'others' with 23%, 17% and 23% for each mall respectively (table 4.2). The respondents in this group identified themselves as house wives (majority), housekeepers, freelance workers, artists, nurses and tourists. On the other hand, "The Nine" and "The Paseo" being nearby a university and schools had 23% and 10% of respondents who identified themselves as students.

4.3 Respondents behavior characteristics

This section reports respondent's behavior, especially on the frequency of visit and purpose of visit made to the community mall.

4.3.1 Frequency of visit to community mall

The frequency of the respondent visits to the community mall was gathered to determine the consumer characteristics. The frequency was categorised as visits of 'once a month', 'twice a month', 'once a week', 'twice a week', 'more than 3 times a week', 'everyday', 'first time' and 'rarely' (table 4.3).

Table 4.3: Respondent's frequency of visit to the community malls

Frequency of Visit				
	K Village	The Nine	The Paseo	Average
Everyday	20%	23%	23%	22%
More than 3 times a week	3%	13%	0%	6%
Twice a week	17%	20%	40%	26%
Once a week	10%	24%	7%	13%
Once a month	27%	20%	7%	18%
Rarely	3%	0%	10%	4%
First time	20%	0%	13%	11%
Total	100%	100%	100%	100%

Table 4.3 shows the respondent's frequency of the visit at each mall. The three malls show distinct different patterns of visits. The patterns can be grouped into a visit of at least one time per week, once a month or rarely and first time.

The largest numbers of respondents that frequently visit community malls were found at "The Nine" with 80%, followed by "The Paseo" at 70% and "K Village" at 50%. Again these numbers reflect the large variety of department store near "K Village" and the lack of alternative malls at "The Nine" and "The Paseo". Hence, the results clearly show that the majority of respondents are regular visitors to their respective malls, especially to malls outside the CBD.

At "K Village", 20% of the respondents visited the mall for the first time. The people explained that they enjoy the large variety of different malls and department stores in

the CBD and therefore, change their location frequently. "The Nine" is located in front of a large residential area and a major road without walkers by had 0% of respondents visiting the mall for the first time. This shows that majority of the respondents are local and regular visitors to the mall. "The Paseo" is also close to housing developments and an international airport had 13% of respondents visiting the mall for the first time. The study found that this percentage was mostly made up of tourists staying in nearby hotels.

4.3.2 Purpose of visit

Table 4.4 presents the results about the purposes of visits. Respondents were asked to describe their purpose of visit to the community mall and the choice provided included 'to use facilities and services', 'work related', 'to meet friends', 'to relax with family' and 'other reasons'. The purposes were selected in order to find out if the community malls fulfill several functions beyond the use of facilities (shopping etc.) and, in that way, to investigate the relationship of respondents with their community malls. The results clearly show that this was the case and that this new type of malls was perceived as more than retail spaces for shopping.

Table 4.4: Respondents purpose of visit to the mall (at the time).

	K Village	The Nine	The Paseo	Average
To use facilities and services	23%	34%	50%	35%
Work related	30%	13%	7%	17%
To meet friends	20%	30%	10%	20%
To relax with family	27%	23%	30%	27%
Other reasons	0%	0%	3%	1%
Total	100%	100%	100%	100%

As seen in Table 4.4, on average, 35% of the respondents pay visits 'to use facilities and services'. "The Paseo" had the highest score with 50% since it is the only place in its respective area that provides a variety of services in one location. Whereas in the other two malls, there are other nearby malls providing similar services. This explains

their lower score. The percentage of the respondent visiting the community malls to use the 'facilities and services' remain to be the highest, as the community malls house a variety of retail opportunities. The facilities available at the community malls under study were similar in the sense that they consist of retail stores, boutique, health and beauty services, wide selection of restaurants and a place for children learning such as play atrium and tutoring schools. "The Paseo" attracted the community to visit the weekly night market that provides street food and inexpensive fashion items, gifts and handmade goods. It was found that people some time take a stroll at the community mall to see if there is anything happening.

It is interesting to note that respondents visit the malls for work purposes, especially in "K Village". A possible explanation is its location in the CBD, where visitors use it for meeting with clients. However, "K Village" is also a place 'to relax with family' and 'to meet friends' with 23% and 20% of respondents respectively. Because "K Village" is quite central and surrounded by offices and residences on Sukhumvit and Rama IV roads it is convenient for people to meet up. In addition, the facilities and services is of a high standard, with excellent ranges of local and international restaurants, recognised education centers that encourage people to come to the mall for a variety of services.

"The Nine" scored the highest number of respondents coming 'to meet friends' with 30%. By analogy, this can be explained by the fact that this mall is located within residential areas (large housing developments as well as standalone houses). In addition, a popular brew house inside the mall attracts large crowds in the evening and on weekends. Out of 30 respondents from "The Nine", 34% indicated to 'to use the facilities and services'.

On average, 27% of respondents were found to visit the malls 'to relax with family'. "The Paseo" had 30% of its respondents in this category. Again, as this community mall is located within residential areas, which parents bringing their children for entertainment and learning, while they run errands. In addition, due to the fact that Ladkrabung is located in outer city area and far from the nearest shopping malls located in middle city area on Srinakarin road (Seacon Square and Paradise Park) and community malls (Jusco and Thanya Eco Park) "The Paseo" becomes the only style

like shopping mall venue for the community to find entertainment, eatery and education centers in Ladkrabung residential area.

4.4 Travel

This section will analyze the respondents travel pattern such as, mode of transport, travel distance, where they came from before the community mall and where they will go after.

4.4.1 Mode of Transport

Table 3 illustrates the respondents' modes of travel to the community malls on this occasion. In this study, public transport consists of local and public buses, railway services, mass transit systems (Sky Train, subway and Airport Rail Link), as well as river taxi, motorcycle-taxis and taxis.

Table 4.5: Mode of Transport

	K Village	The Nine	The Paseo	Average
Private Vehicle	64%	70%	77%	70%
Public Transport	13%	10%	10%	11%
Bicycle	10%	3%	3%	6%
Walking	13%	17%	10%	13%
Total	100%	100%	100%	100%

The study shows that more than 60% of the respondents rely on 'private vehicle' to travel to each mall. This can be correlated to the high level of parking spaces provided at each mall (more than 400), that makes it highly convenient for them to take their car.

The differences among the scores for 'private vehicle' can be explained by the availability of public transport. Hence, "The Paseo" had the highest score of 77% and it has the lowest access to mass transit compared to the CBD and the middle city. The outcomes for 'public transport' seem to confirm this explanation.

The average score for 'walking' was 13%. The highest score at "The Nine" of 17% is probably due to the fact this mall is situated in close proximity to community and 'walking' is a convenient option of access. According to the respondents, walking to the other two malls is not convenient, because of the unpleasant street environment, tropical climate (hot and humid) and high air pollution.

The lowest scores were given to travelling by bicycle. This can be attributed to travelling distances and the inadequate bicycle infrastructure in Bangkok, which makes travelling by bicycle inconvenient and dangerous.

4.4.2 Convenience

Each respondent was asked to evaluate the options travelling to her or his mall other than by private vehicle. Respondents were given three categories labeled 'convenient', 'reasonable' and 'difficult'.

Figure 4.25: Travelling without private vehicle - "K Village"

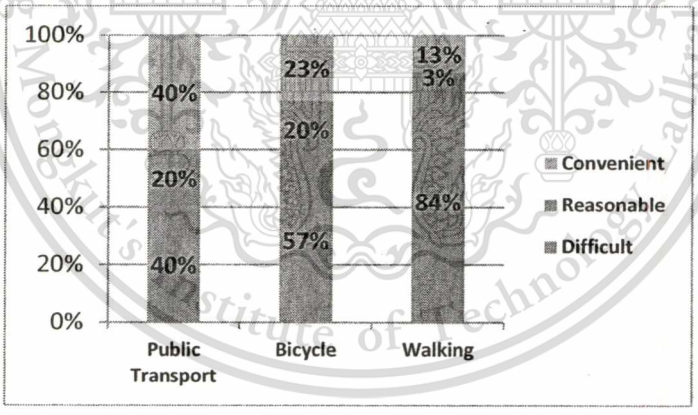


Figure 4.25 presents the results for "K Village" in the CBD. In all, 60% of the respondents perceived the use of public transport as 'convenient' (40%) or 'reasonable' (20%). Findings in table 3, supports the above data (table 3) with a highest number of respondents travelled to this mall by 'public transport' (13%) for that occasion.

With respect to the other two options, the majority of respondents evaluated them as "difficult". Obviously, they considered the roads from their residences to their community mall as badly designed (too small) and felt unsafe riding a bicycle. In

addition, the respondents notice that mass transit stations are not within walking distance to the mall (even located in the CBD) and the conditions of the pavements are poor. Another important factor contributed to this negative perception is the hot and polluted air environment in Bangkok.

Figure 4.26: Travelling without private vehicle – "The Nine"

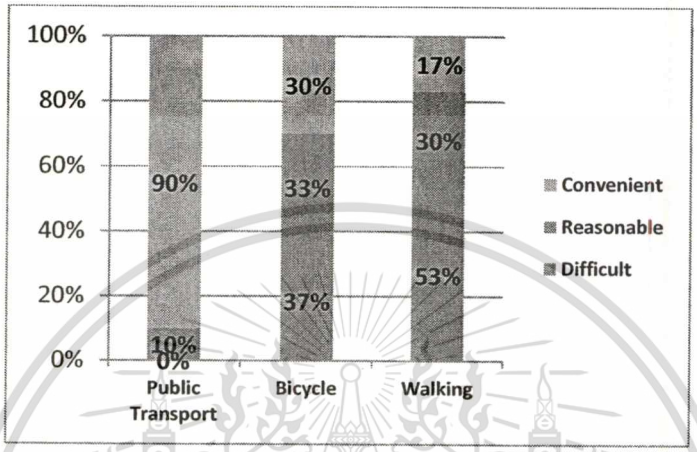


Figure 4.26 shows the results for "The Nine" in the middle city. For this mall, 'public transport' receives an overwhelming score as 'convenient', despite the lack of direct access to mass transit. However, due to its location in front of a residential area, it is regularly served by local buses. It is also situated close to a main road, which is easily accessible by taxis.

In line with the appreciation of public transport, respondents give somewhat better scores to 'bicycle' (63%) and 'walking' (47%), as compared to "K Village", (43% and 16% respectively). From observation, travelling by bicycle and walking is more convenient at "The Nine" than "K Village". A direct entrance connecting the residential area to the mall has been provided to accommodate local visitors. For this, people do not have to face traffic on the main road if they come from the residential area.

Figure 4.27: Travelling without private vehicle – "The Paseo"

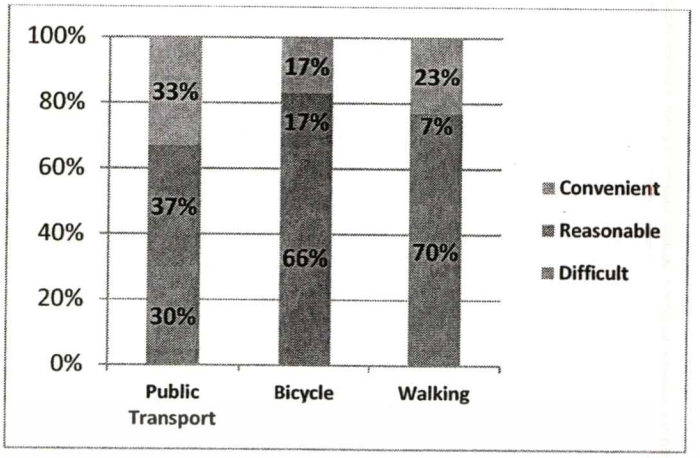


Figure 4.27 shows the results for "The Paseo". Similar to "The Nine", 'public transport' is considered as 'convenient' (33%) or 'reasonable' (37%). This is probably explained by its location that is close to a main road with easy access for local buses and taxis. Travelling by bicycle was found to be 'difficult' by 66% of the respondents. The main reason is undoubtedly the high road traffic and the lack of bicycle lanes. 70% of the respondents found 'walking' to be 'difficult', commenting that the surrounding roads surrounding are polluted with cars exhaust fumes, which makes it unpleasant to walk.

In comparison, results show, at least in the present situation, that 'public transport' is perceived as an option with some attractiveness which, probably, may be improved. "The Nine" for instance has implemented a free shuttle bus service to pick-up and drop-off customers at Huamark Airport Link station. The approach would link people to mass transit systems as well as draw people to stop at "The Nine" on the way to their destinations.

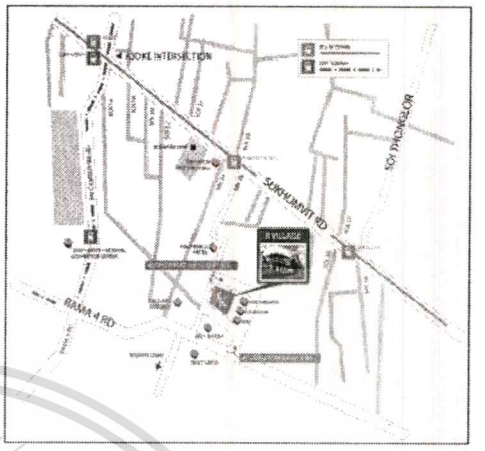
4.4.3 Transportation

There are various ways to get to each community mall. The transport service and direction on how to get there are described here. It is important to note that each location has different demographic, transit system, land use and density.

"K-Village"

There are two mass transit systems located nearby, BTS Prompong station on Sukhumvit soi 24 and MRT Queen Sirikit National Convention Center station on Rama IV road. Buses pass "K-Village" on the Rama IV side and the bus stop is a short walk to the community mall. To come by bus on the Sukhumvit side a motorcycle taxi is required to make the connection from the bus stop on Sukhumvit soi 24 to "K-Village". However, the most convenient ways to get to "K-Village" would be by private vehicle or taxi.

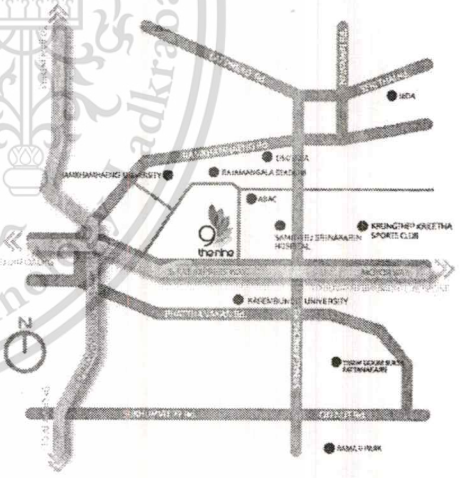
Figure 4.28: Map to "K Village"



"The Nine"

"The Nine" is situated on Rama IX road, on the perimeter of offices, a residential development 'Seri Village' and other individual houses. The area has good mixed land use of small shops, restaurants, schools and hospitals. There are no buses passing by the establishment, the only bus that passes, but rarely stops, goes to Suvannabhumi Airport, as Rama IX road leads up to the Chonburi Motorway. Local buses, 'song taw', stop at "The Nine" bringing people from the main bus stops on 24 Ramkhumhaeng rd. The closest mass transit is the Airport Link Huamark Station, from which "The Nine" plans to provide (starting in May 2013) a shuttle bus service to transport people to and from the establishment.

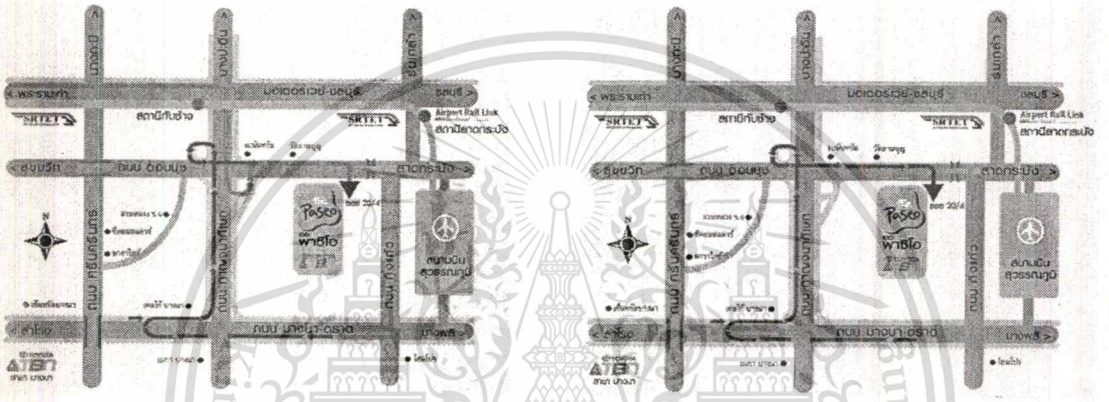
Figure 4.29: Map of "The Nine"



"The Paseo"

It is convenient to travel by bus to "The Paseo". Bus no. 1013 connects to Pravet and On Nuch area, bus no. 517 to Pattanakarn and Srinakarin roads. There are also local bus services transporting from the neighboring Chacheongsao province and from within Ladkrabung. The closest mass transport system is the Airport Link Ladkrabung station, however, there is currently no shuttle bus service provided by the community mall, although this is planned.

Figure 4.30 – 4.31: Map of "The Paseo" for two different routes (from Bangna and Rama IX)



4.4.4 Distance and destination

The distance travelled categories began within 500 meters, within 1 kilometer, within 1-2 kilometers, 3-5 kilometers, within 10 kilometers and to distance of more than 10 kilometers (table 4.6).

Table 4.6: The respondents' places prior to coming to the community malls

	Home			Work			Other			Average
	K Village	The Nine	The Paseo	K Village	The Nine	The Paseo	K Village	The Nine	The Paseo	
500 m	7%	7%	3%	3%	10%	0%	3%	0%	3%	12%
Within 1 km	10%	7%	7%	0%	3%	0%	0%	0%	10%	12%
Within 1-2 km	20%	20%	17%	3%	3%	0%	0%	0%	0%	21%
Within 3-5 km	17%	20%	30%	3%	3%	3%	0%	0%	0%	25%
Within 10	10%	20%	10%	0%	0%	0%	7%	0%	0%	16%
More than 10 km	7%	7%	17%	7%	0%	0%	3%	0%	0%	14%
Total										100%

Table 4.6 show the respondents' places prior coming to the community malls. The results are illustrated in percentages for each category and each mall. The study had found that on average, the respondents coming from home was greatest and work and other places were the next highest respectively. Majority of respondents coming from home, work or other places come from within 3-5 kilometers, at 25% and 21% have travelled from 1-2 kilometers (average). This shows that community malls caters to the nearby communities, which the majority coming from their home.

The study also found that some respondents drive great distances to get to a particular community mall for certain purpose, e.g. a parent had travelled from Samutprakarn Province to send their child to a tutoring school in one of Bangkok's CBD community mall ("K Village"). A single respondent who informed to have come from other places was unique, particular because he travels with a bicycle on regular basis. The respondent informed that he visited Lumpinee Park prior to coming to "K Village" for lunch and would continue to ride to another destination before going home. Other locations that the respondents came from before stopping at the community malls were, from children's school, friend's home and supermarket.

Each respondent was then asked to specify where they will go after leaving the community mall. The study found most respondents going 'home' after visiting the community mall.

4.5 Environmental and physical characteristics

This section will document and discuss the variables considered to judge the environmental and physical characteristics of the community mall. The variables considered in this section were tree, recreation area, bicycle infrastructures, condition of side walk, road safety and air quality.

4.5.1 "K Village" environmental and physical characteristics

In this section, the thesis will report the finding at each mall individually. However, some comparison among the three malls will be made. The order of the discussion will begin with "K Village", "The Nine" and "The Paseo", respectively.

Figure 4.32: "K Village" environmental characteristics

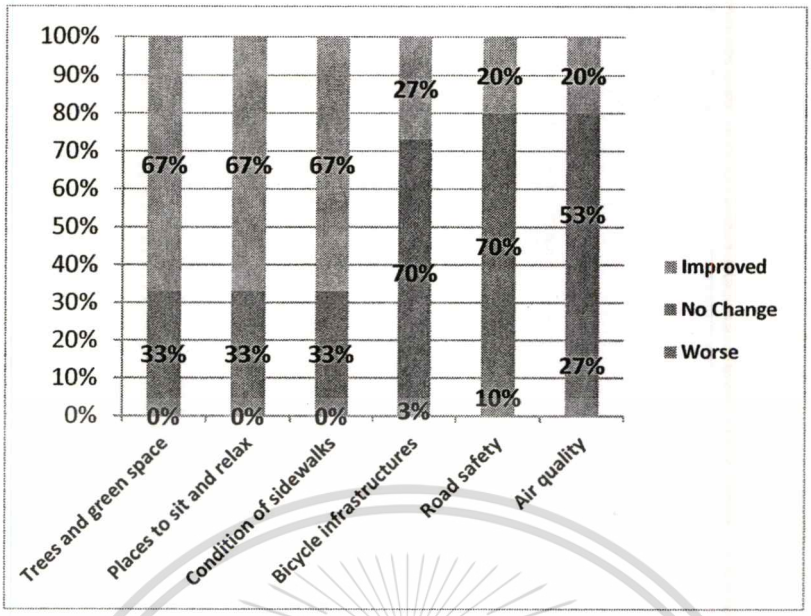


Figure 4.32 illustrates the results from "K Village". The majority of respondents (67%) noticed that the number of 'trees and green spaces' as well as the 'places to sit and relax' have 'improved'. According to the manager, green concepts were integral part of the "K Village" design. For this reason, substantial funds were allocated for landscaping. The high number of positive responses shows that this approach is appreciated by the customers.

While 67% of the respondents considered the 'conditions of sidewalks' to have improved, the fact that 84% still regard walking as difficult (figure 4.25) reflects that only the sidewalks in the direct vicinity of the mall have been modified. For the same reason, 'Bicycle Infrastructure' has become better for only 27% of respondents, as there are still no bicycle lanes existing. The positive answers may be the result from the available bicycle parking space inside the mall and the convenient sloping roads built to allow a better access.

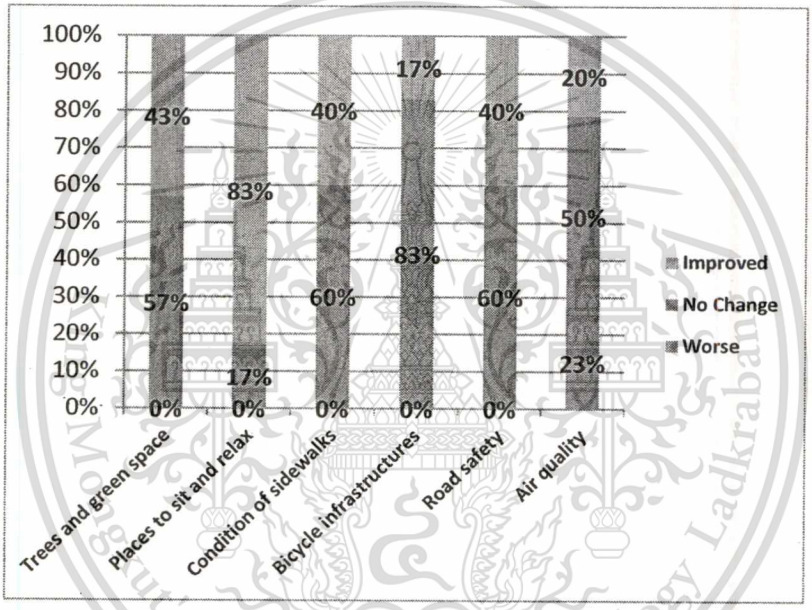
Also for 'road safety' only 20% indicated an improvement. 10% even considered it as 'worse' than before. "K Village" respondents were the highest to indicate 'no change' in this factor. This is due to the fact that the CBD is highly congested already but having a new commercial site in the area attracts even more cars.

20% of respondents perceived air quality to have 'improved' since the establishment of the mall. One of the reasons may be the addition of trees and green areas in the neighborhood.

On the other hand, 27% considered air quality to have become 'worse' due to the increased traffic in Bangkok.

4.5.2 "The Nine" environmental and physical characteristics

Figure 4.33: "The Nine" environmental characteristics



The answers for "The Nine" show that with the exception of air quality, people do not recognize any negative effects of the mall on the local environmental (figure 4.33).

Compared to the other two malls, only 43% of respondents saw the 'trees and green spaces' as 'improved'. The reason could be that "The Nine" replaced a previous smaller community mall that was located on the same site earlier. This former mall also provided green areas but had limited outdoor sitting possibilities. Consequently 83% of the respondents appreciate improved 'places to sit and relax' at "The Nine".

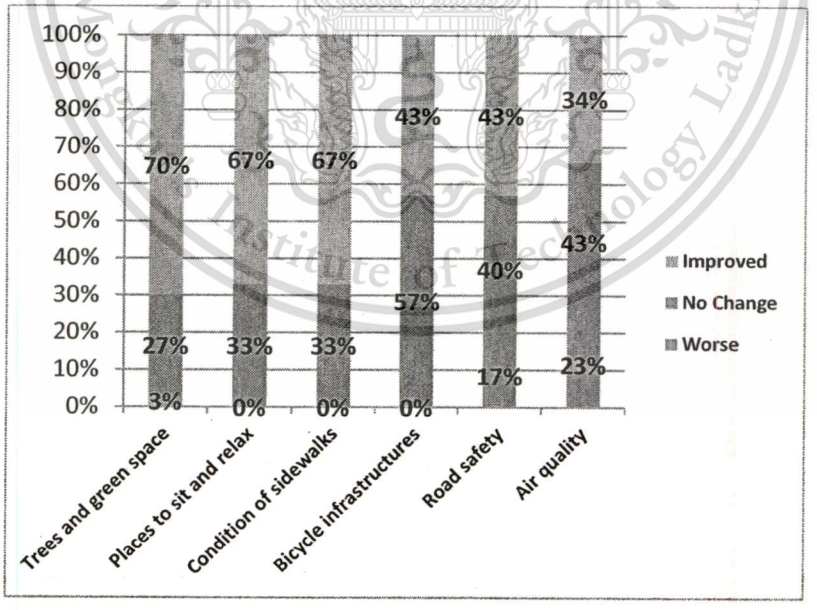
Similar to "K Village", sidewalks have been improved only in front of the mall and no bicycle lanes have been installed. As a consequence, only a minority i.e., 40% and 17% considered these factors as 'improved'.

Although the traffic in front of the mall has increased significantly since the opening, respondents considered 'road safety' as either 'improved' (40%) or not changed (60%). One local resident mentioned that since the establishment of "The Nine", there have been fewer accidents on that road. The reason may be that a dangerous intersection in front of the mall has been closed for traffic. In addition, respondents mentioned that "The Nine" provides well trained traffic guards to direct the traffic.

In the category 'air quality', the scores were similar to "K Village". 27% of respondents indicated that 'air quality' has 'improved', while 23% regarded it as 'worse' than before. The reasons given for these answer were similar to "K Village".

4.5.3 "The Paseo" environmental and physical characteristics

Figure 4.34: "The Paseo" environmental characteristics



The previous two malls discussed, i.e., "K Village" and "The Nine" were built in areas which were already developed with buildings or shopping areas. On the other hand, "The Paseo" was literally built on an undeveloped road side with dry and dusty environment. Despite these differences, the scores (figure 4.34) for 'trees and green

spaces' and 'places to sit and relax' were similar to "K Village", with the majority indicating improvement (70% and 67% respectively). These positive scores are the result of improvement made to the landscape.

The respondents appreciated the places to sit and relax and condition of sidewalks very much, with 67% indicating 'improved' and only 33% 'no change'.

43% of the respondents considered the infrastructures for bicycles to have been 'improved'. However, this information contradicts with qualitative data gathered from the management, that neither bicycle parking space or bicycle lane have been established since opening of the mall road safety is considered as 'improved' by 43% of the respondents. "The Paseo" management has arranged with the district office to install a pedestrian crossing directly in front of the community mall. The crossing provides convenience for pedestrians as well as gives indication for drivers to slow down as they reach the area.

In the area of 'air quality', the study found similar results with the prior two community malls. 'Air quality' was specified as 'no change' (43%), 'improved' (34%) and 'worse' (23%) by the respondents. The respondents explained that the road side in their environment is generally dusty with traffic and fumes, and the "The Paseo" has become a place to escape from unclean air on the sidewalk.

Overall, this study has found that the majority of the respondents in all three community malls saw a common improvement in the following aspects, 'trees and green spaces', 'places to sit and relax', and 'condition of sidewalks'. "K Village" results were 67% for all three categories. While "The Nine" respondents indicated 43%, 83% and 40% and "The Paseo" with 70%, 67% and 67% respectively. "The Nine" had received an overwhelming result for "places to sit and relax" compared to other community malls because it is a re-launched / re-branding of an older community mall that was situated on the same location called "The Premier". That previously provided limited outdoor sitting opportunities compared to "The Nine".

However, the respondents mostly saw 'no change' in the areas of 'bicycle infrastructures', especially due to the absence of bicycle lanes. The results for the three

respective malls were 27%, 17% and 43%. The higher results found at "The Paseo" can be explained by the little expectation of appropriate bicycle infrastructure required by the respondents.

'Road safety' was considered to have 'improved' to a certain level, as community malls have made improvements such as, established a pedestrian crossing, locate well trained guards to direct traffic to help reduce congestion and put in lights to signal drivers to slow down. Each mall results for this category were 20%, 40% and 43% respectively.

In the area of 'air pollution', most respondents have indicated 'no change' or 'worse', with each mall reporting 20%, 20% and 34% improvement. Nevertheless, the answers on 'air pollution' have to be considered with caution as mentioned earlier.

4.6 Travelling behavior

The purpose of this question was to investigate the respondents' opinions on their travelling behavior as described by four categories: 'travel distance', 'time spent in car', 'fuel consumption' and 'congestion'. Again, they were given three options: 'reduced', 'no changed' or 'increased'.

4.6.1 "K Village" travel behavior

Figure 4.35: "K Village" Travel Behavior

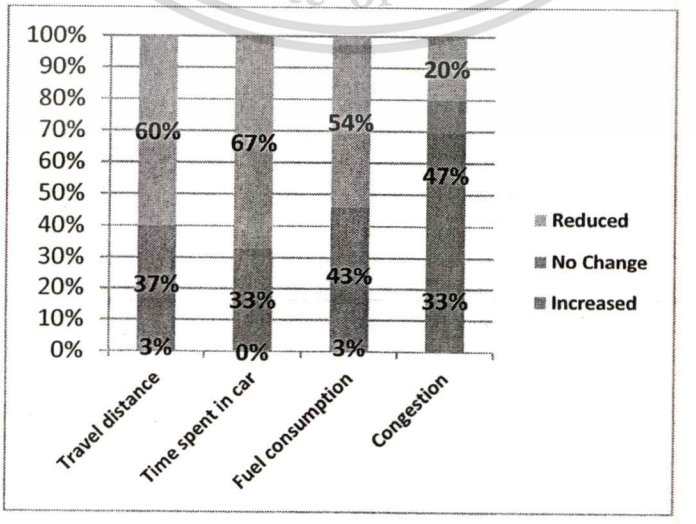


Figure 4.35 shows the results for "K Village". 60% of the respondents perceived that their 'travel distance' was reduced. For 'time spent in car' and 'fuel consumption' 67% and 54% mentioned reduction. Almost nobody reported any worsening. However, the majority of respondents indicated that 'congestion' has not changed (47%) or even become 'worse' (33%). These results can be explained by the general perception that traffic in Bangkok as a whole has become worse.

4.6.2 "The Nine" travel behavior

Figure 4.36: "The Nine" Travel Behavior

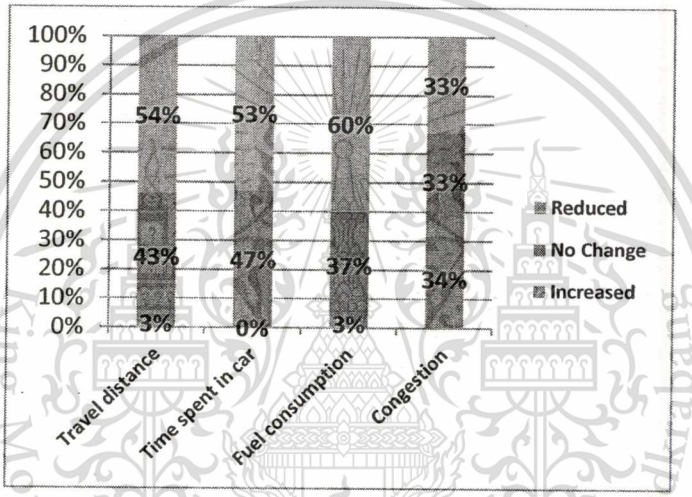


Figure 4.36 shows the result for "The Nine". 54% of the respondents reported a reduction of 'travel distance', 53% indicated less 'time spent in car' and 60% noticed less fuel consumption'. Virtually no one noticed any worsening. Regarding 'congestion', 34% of the respondents viewed congestion to have 'increased'. Again, this can attributed to the general increase of traffic congestion in Bangkok.

4.6.3 "The Paseo" travel behavior

Figure 4.37: "The Paseo" Travel Behavior

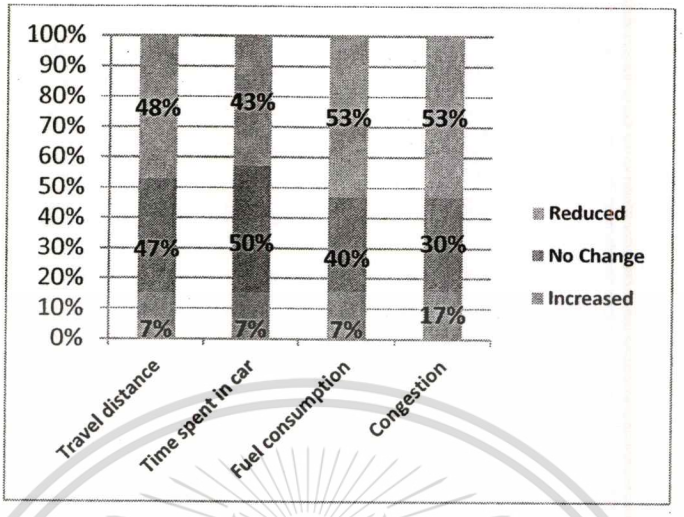


Figure 4.37 shows the results for the third mall, "The Paseo". Scores are similar to the first three categories. However, the results for 'reduced' are smaller and 'no change' are higher compared to the other two malls. Before "The Paseo" opened, in the Ladkrabung area, people had no other choice but to travel to the middle city to the nearest department stores. Since the new mall provides these services locally, respondents' perceived their travel distances (48%), time spent in their cars (43%) and fuel consumptions (53%) to have been 'reduced'. On the contrary 7% of the respondents indicated an 'increased' in all three categories. This can be explained by the attractiveness and closeness of the mall that draws people to travel there more frequently.

In addition, "The Paseo" had an impact on the respondents' perception on 'congestion'. Compared to the other two malls, "The Paseo" had a higher percentage of respondents indicating reduction on congestion (53%). A reason may simply be a change in travelling behavior among the respondents by avoiding congested areas. Nevertheless, Bangkok traffic remained a major problem for the respondents, with 47% indicated 'no change' or become 'worse'.

In summary, the study shows that community malls have contributed to alter the travelling behavior of the respondents. Many respondents claimed that 'travel distance', 'time spent in car' and 'fuel consumption' has been reduced. The results for "K

Village" (60%, 67% and 54%) and "The Nine" (54%, 53% and 60%) were higher than "The Paseo" for the mentioned categories. The findings at "The Paseo" were 48%, 43% and 53%.

The views on traffic 'congestion' were mixed and the presence of community malls was not perceived as reducing 'Bangkok traffic problem'. "K Village" and "The Nine" respondents indicated this aspect to have 'reduced' at only 20% and 33%. However, "The Paseo" being located in the outer area had found 53% of the respondents satisfied with the condition of congestion, as they appreciated the fact that they no longer have to travel to congested areas to access good and services like before.

4.7 Community mall management response

The purpose of this section is to seek the community mall management point of view on various as aspects of sustainability. 15 questions were asked through personal interviews and email. Only 2 of the 3 community malls in the study provided comments for this research, "K Village" and "The Paseo", and personal observations were made at "The Nine".

The results of discussions with "K Village" and "The Paseo" management are presented, while "The Nine" information was gathered from the website, observation and conversations with some of the workers at the community mall.

Q 1: Please provide information on the community mall industry in Thailand. Why the concept has boomed?	
"K Village"	Open-air community malls have been a hit in Bangkok lately. The boom is probably due to the lower cost of investment and the general trend of the outdoor atmosphere.
"The Nine"	"The Nine" is owned by MBK (a large shopping mall in Bangkok CBD).
"The Paseo"	"Community Mall" existed in Thailand since the old day. During the time where movie theatres were the commercial place to be, hence, social activities and business surrounded movie theatre in various parts of town. Today the pioneer of community mall is Siam Future, owner of projects such as J-Avenue and La Villa located in prime areas.

Q 2: Do you feel that this style of shopping mall suit Bangkok urban city?	
"K Village"	Yes
"The Nine"	It provides another atmosphere to the shopping experience.
"The Paseo"	Yes, we see that "The Paseo" help to fill in the missing gap in Ladkrabung community. We provide goods, services and entertainment to the community. Community mall should be set up in mass location with good traffic. The location should be convenient for people to get to without cars; located within walking distance from many places. However, the lifestyle of Thai people is very much auto-dependent and require community mall to invest heavily in parking space. But, we want to avoid this.

Q 3: Please tell us about your community mall background, how the project began?	
"K Village"	We have started this project here on Sukhumvitsoi 26 because this plot belongs to the family and having similar projects in the area will help improve the area and increase the land value of surrounding plots.
"The Nine"	"The Nine" was a model of an old community mall call Premier. The project was on a good location but needed rebranding to attract business and customers.
"The Paseo"	The owner of "The Paseo" owns the land in Ladkrabung and saw opportunity to do business. The architect who designed J-Avenue was used to design our mall also.

The trends in establishing community malls in the locations studied have been that the property belongs to project owners and redevelopment of land was required. The economic advantages of establishing the community malls at sites with either local residential or office worker access were clearly acknowledged. The owners of "K Village" were able to raise the value of their nearby properties as well a set up a thriving business.

Q 4: Who is your target customer?	
"K Village"	We target the medium to the upper echelon of customers.
"The Nine"	Grade B and upper.
"The Paseo"	We try to aim for grade A customer, which is very niche. However, our customer would be grade B (with income between 70,000 – 100,000 THB) and C.

Due to high investment in community mall projects, the businesses have targeted groups in the middle and upper classes with spending power. As Thailand and Bangkok continue to develop economically, these sectors will increase in size, thus providing an expanding customer base for the community malls.

Q 5: Do you know how many people live and work near your community mall and how many customers visit your mall each day?	
"K Village"	We do not have the exact number of residents in the area. The count of number of cars per day is between 1,700 to 2,250 (excluding the parking areas surrounding the project).
"The Nine"	From various visits, it has been seen that surveys had been conducted to count the number of visitors, however this figure was not released by "The Nine". An estimation of the number of cars per day is between 3,000 – 4,000 cars. 10,000-15,000 visitors on weekdays, and up to 20,000 on weekends (Rungfapaisarn, 2011).
"The Paseo"	It is difficult to count our customers, because we are an open mall. We have 3,000 plus cars visit our mall each day. From previous research, there are 100,000 plus households within 10 kilometers radius of our mall. We believe there are more than 1,000,000 people living in this area.

The information gathered from community malls management shows that these community malls are situated in well-populated areas. However, it seems that most customers come to the malls by car, often on their way home from work or at weekends, and these are catered for by ample car parking spaces. The poor walking environment and lack of bicycle infrastructure were mentioned as deterrents to these modes of transport.

Q 6: How many employment / jobs does your community mall provide? How many shops and facilities are opened at this mall?	
"K Village"	We have 35 in-house and 30 outsource employees. 700 plus people working in the shops and restaurants. There are 98 retails space.
"The Nine"	"The Nine" have 20 plus in-house employees. There are two offices at "The Nine" with more than 200 workers, Thai Insurance and Tanachart Bank. There are 124 retails spaces.
"The Paseo"	We have 20 in-house and 20 outsourced employees. 200 plus people work in the shops and restaurants.We have 100 permanent stores and 100 plus temporary shops that sells 5 days a week during the night market.

The space at the community malls is much less than in department stores; however the retail space is segregated to cater for quite a number of retail shops and services. This shows that the community malls provide a variety of facilities and services that people need, thus making it convenient to come to a community mall rather than to a department store. In addition, community malls provide office space as well as operations jobs, therefore job opportunities are created in each location benefiting the local economy.

Q 7: Does the concept of sustainability apply to your community mall and in what way? E.g., energy, lighting, waste management, tree planting, transport etc.	
"K Village"	Being an open-air mall, we save on air-conditioners expenses. We have started off with the green idea in our mind since designing the project, and a substantial amount of funding has been allocated to landscaping of the site.
"The Nine"	"The Nine" architecture represent natural environment, with many trees throughout the premises and the mall saves on air-conditioning costs.
"The Paseo"	I believe that every building destroys nature. But our type of shopping mall saves energy costs, we use much less air-conditioning than the department stores.

The management response did not include any indication of practices that contribute towards sustainable management such as waste management and water treatment strategies, and since observations did not indicate their presence, it can be assumed that such practices are not implemented. Both "K Village" and "The Paseo" highlighted the point that open-air community malls consume less electricity than department stores. This shows that much more can be done within the business to improve environmental indicators.

Q 8: Is it convenient to travel to your community mall via public transport?	
"K Village"	It is not convenient to travel to "K Village" via public transport. The nearest BTS station is Phromphong and the nearest MRT is Sirikit Convention Centre.
"The Nine"	It is convenient to travel to "The Nine" via taxi and 'song taew' (local bus), however no buses pass regularly. "The Nine" has recently initiated a shuttle bus pick-up and drop-off toHuamark Airport Link station (starting in May 2013).
"The Paseo"	It is convenient to travel to "The Paseo" on public transport, as there are 'song taew' (local bus) and buses passing regularly. In addition, traffic is very smooth around here.

For "K Village" to improve their public transport access, a shuttle bus service could be put in place as currently the mass transit system is too far away to walk, therefore customers who come to their mall have to depend on private cars and taxis. "The Nine" on the other hand have recognized this shortcoming and is beginning to serve customers with a shuttle bus system. Good public transport access to the malls, as well as good pavements and bicycle infrastructure, would encourage customers to leave their cars in the garage.

Q 9: How many car, motorcycle and bike parking space do you have?	
"K Village"	We have 330 parking spaces inside the premises and about 120 spaces around the outside perimeters of the project.
"The Nine"	There are 600 plus car parking spaces and 50 motorcycle parking.
"The Paseo"	There are approximately 500 car parking spaces and 60 motorcycle parking. We do not have a special parking area for bicycle.

As seen, these community mallsall provide vast amounts of space to automobile parking. Such space could be put to more economic uses, such as retail, or environmental uses such as waste management and recycling centers, or social uses such as meeting places, children's play areas, if car dependency could be.

Q 10: Does your community mall provide facilities and functions that is convenience for customer to travel with Bicycle?	
"K Village"	We have 16 bicycle parking spaces in the parking lot and 9 others in a semi-protected area. There are 60 plus parking spaces allocated for motorcycles.
"The Nine"	We have 18 bicycle parking in the parking lot and it is possible to ride bicycle directly from 'moo baanseri' and "The Nine" connecting entrance to avoid traffic on Rama IX road.
"The Paseo"	We do not have bicycle facilities on premises; however we would like to do something.

"K Village" and "The Nine" had provided bicycle parking facility, which is a good start to building appropriate bicycle infrastructure, however no bicycle lanesare provided to the nearby communities, so cycling in the area is not really safe. "The Paseo" had no facilities for bicycle users, however during the interview a suggestion was made by the researcher to convert part of the foot path that connect to The Perfect Master Piece

Village entrance into a bicycle lane, so that people can ride directly to the community mall without having to meet road traffic.

Q 11: Do you have information on your customer's mode of transport or travel behavior to and from your community mall? E.g., how many come by private vehicle, taxi, bus, bicycle and walk?	
"K Village"	We have not done any official survey on our customer's mode of transport, but we have observed that the majority come with their own private car or taxis, some do walk to the mall during the day from their offices.
"The Nine"	From observation, people generally come by private cars and public transport such as taxi, motorcycle taxi and local bus 'song taew'.
"The Paseo"	Our customers travel mostly by motorcycle and cars. Quite a number of people come by public transport too.

Transport to and from the community malls are generally by car or motorcycle. It would be a positive trend if this could be directed to more sustainable transport modes

Q 12: Do you provide information on how to get to your community mall on your media, such as site map and travel instructions for public transport (bus route no. train station etc)?	
"K Village"	The map to our mall can be found on our website and our facebook page. We also have hand out our directory leaflets.
"The Nine"	The map to "The Nine" can be found on the website and facebook page.
"The Paseo"	We provide map from Bangna and Rama 9 to our community mall on our website.

No community malls in this study have public transport information on their website or leaflets. This information needs to be incorporated to inform customers of alternative travel options and for those customers who do not have cars.

Q 13: Does your community mall provide shuttle bus service for customer and employee, which pick up and drop off people from BTS, MRT station, transition, bus stop etc?	
"K Village"	We do not have shuttle service although we have considered having such a service. The cost however would be very high therefore it has not been implemented yet.
"The Nine"	Yes, there will be a shuttle bus pick-up and drop-off from Huamark Airport Link station from May 2013.
"The Paseo"	We would like to provide a shuttle bus from the airport link to our mall. Even though operation cost is our concern, we believe it is better than paying tax. We need at least 3 vans, 3 drivers and gas to run the service. We had problems with the 'song taew' and taxi drivers before, as they did not let us pick customer up from the airport link. The public transport system is often operated by mafia and they want potential customers for themselves. What we are doing now is providing vans to pick up customers from the Suvanabhumi Airport and we only go if they call for pick up.

This shows that community malls seek to accommodate customers to their mall through shuttle bus and van services. These practices encourage less car use, improve air quality and reduce congestion within the area, as public buses can convey more people each trip. It is clear that there are some social issues in implementing shuttle buses.

Q 14: Do you have plans to open another community mall in the future? If yes, would you apply the concept of sustainable development to improve your business, environment and enhance the community livability?	
"K Village"	We only do projects on our own plots. There are some other plots in mind but all still under study.
"The Nine"	Unable to attain data.
"The Paseo"	Our next project is call '"The Paseo" 2' and will be at Sukaphiban 3 road. This project is under construction now and we are trying to save as many trees as we can. We are working with Eco design, to save energy and water. The new project will reflect the same concept as TREE from Siam Architect. We also plan to open another community mall in Kanjanapisek road.

"The Paseo" showed their future project is working with sustainability concept in mind, however, sustainable transport and non-motorized forms of transport have been overlooked. Community malls need to integrate such planning and encourage community participation to effectively contribute to sustainable neighborhood.

Q 15: What comments and feedback have you received from your customer, shop owners and worker in terms of the economy, environment and livability?	
"K Village"	Comments and feedback have been quite positive from customers. Since our opening in 2009 many new malls have opened up, supply has sharply increased. We have seen a drop in sales of our tenants. An adjustment in rent and an increase in advertising and PR have been carried out. We try to keep or better our standards regarding cleanliness, greenness and services. As a community mall, we try to cater for the whole family therefore we do provide many family related activities.
"The Nine"	Unable to attain data.
"The Paseo"	We often receive complaints from customer that there are not enough parking spaces.

From the information gathered community malls aim to provide a new shopping experience through green and outdoor atmosphere. The small scale shopping mall that has spread into various suburbs has brought a pleasant environment to neighborhoods as well as convenience through the facilities and services they provide. A major environmental benefit derived from community malls is the amount of electricity saved, from smaller scale building without air-conditioning. No manager remarked on solid waste management or waste water treatment in the answers. One manager mentioned that construction of any business destroys the environment more than it benefits, that trees are cleared from land to be replaced with concrete buildings.

Community malls have provided the basic facilities such as bicycle parking; however there was no bicycle lane inside or leading up to the community mall entrances so bicycle use remains low. Community malls have therefore not magnetized the people to non-motorized forms of transport, but rather continue to encourage people to drive by providing vast areas of parking space.

4.8 Conclusion

It was found that the respondents felt that community malls sustainability aspects are is more positive than negative. In the environmental appeal category, it was found that more trees have been planted with better atmosphere and space for recreation. The community strongly agreed that the condition of sidewalk has yet to be improved and

bicycle infrastructure should be properly implemented to encourage people to take up non-motorized forms of transport to the community malls. In a sense, community malls have worsen the streets in the neighborhood, as they attracted more traffic to the area. Nonetheless, community mall has helped to improved the travel behavior among the respondents in the sense that over 50% (figure 4.35 and 4.36) of the respondents at "K Village" and "The Nine" travel distance, time spent in car, fuel consumption have been reduced and influences little on Bangkok heavy traffic congest. "The Paseo" result was different, with 48% and 43% of respondents indicating their travel distance and time spent in car have reduced respectively. Congestion was considered to be better (53%) compared to the first two mall as the establishment of "The Paseo" has helped the respondents avoid going to shop in busy areas. They also provide a positive alternative to shopping and socializing compared to the large centralized department stores.

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

This final chapter concludes the study 'People's Perception Towards the Contribution of Community Malls to Local Environment and Quality of Life – A Case Study on Three Community Malls in Bangkok', and summarizes the results discussed in the previous chapter. The chapter ends with suggested recommendations derived from the study and some areas of future research related to this study.

The central idea of the study was to question whether community malls benefit Bangkok communities in positive ways through improved access to goods and service and local environment, especially in residential areas. Apart from the appealing urban spaces the community malls provide for people to relax, spend time with family, meet friends and conveniently use facilities and services, the study aimed to see whether or not community malls have influenced the way people travel, and whether they have helped to reduce the distance travelled, time spent in the car, fuel consumption and congestion faced on the road to get to commercial areas in Bangkok.

The study was conducted in three community malls in different parts of Bangkok: "K Village" (in CBD), "The Nine" (in middle city) and "The Paseo" (in outer city).

Two methods were used to collect data: a questionnaire through which a total of 90 responses were obtained and analyzed using descriptive statistics; and interviews were conducted with the community malls management to gain the view of the project developer.

5.1 Revisiting the objectives, hypothesis and research question

The study commenced with two objectives, one hypothesis and one research question and it was successful in fulfilling the objectives, testing the hypothesis and answering the research question. A detailed explanation is given in this section.

5.1.1 Objectives

Two objectives were address as follow:

1) *To investigate the contribution community malls make to local environmental.*

The study determined the condition of the local environment of each community mall after the establishment of the business by means of a questionnaire. The results showed that the respondents were satisfied with the improved environment brought by the community malls. Besides upgrading the visual environment with beautiful landscape, the respondents were particularly pleased with the way community malls have helped to alter their travelling behavior. By reducing distance travelled and time spent in their car. By using the facilities and services of the local community malls, respondents had an economic benefit through their reduced fuel consumption and avoid congestion. Further benefits were improved air quality and more time available for socializing with friends and family.

The information received from the management of the community malls also exhibited that community malls consume less electricity than the larger department stores, as one manager noted *"being an open-air mall, we save on air-conditioning expenses"*. The study also found that community malls provide a large number of jobs (owner and employee) in the retail space and offices situated on the premises. Through the establishment of jobs, shops, facilities and services people can save money by walking, riding bicycle, using public transport to work, go to shops, socialize, seek health care advise and take their children to a child care center in their own locality.

2) *To investigate the benefits community malls contribute towards improving the quality of life of the people in the area.*

The study determined the condition of quality of life by means of a questionnaire. The majority of respondents noted an improvement in the environmental and social aspects that community malls brought though improved livability such as increased number of trees and green space, places to sit and relax and space for walking. On the other hand,

a small number of respondents were negative towards the current condition of space for bicycle, road safety and air quality.

5.1.2 Hypothesis and research question

The hypothesis stated in chapter 1 has been supported by this study and the research question has been addressed. Detailed explanations on the study are discussed here.

The hypothesis of this study aimed to determine whether the establishment of community malls brought improvement to the local environment and quality of life to local communities. The results discussed in chapter 4 showed that the respondents at all three community malls ("K Village", "The Nine" and "The Paseo") perceived that the basic fundamentals of neighborhood environment and quality of life have been improved through the design and integration of trees and green space (67%, 43% and 70% respectively), outdoor sitting and resting area (67%, 83%, 67% respectively) and a place to walk at (67%, 40% and 67% respectively) that has positive impact on community's physical and mental well being through space to meet, interact, exercise and relax.

In social aspect, the respondents were satisfied with the fact that the community malls have moved facilities and services closer to the them and has helped to decrease stress caused by congestion, saved money on fuel and saved time from avoiding congestion in the city center. Thus, community malls have successfully contributed toward improved livability.

The discussions with the community mall owners, identified an improvement in the economic condition, that development of the community mall has helped to increase local land values, a result of improved local facilities. The outdoor design of the community malls have resulted in savings on construction materials and electricity expenses, which in turn have the environmental benefit of reducing consumption of resources and imported energy. Reduced costs can in turn be passed on to benefit customers. This research has also found that community malls provide hundreds of jobs, skilled and unskilled, full-time and part-time, which can be of great economic and social benefit to local people.

The study found that respondents gave positive feedback towards the community malls, which have brought convenient access to goods and services and have helped to reduce travel by 60%, 54% and 48%, time spent in car by 67%, 53% and 43% and fuel consumption by 54%, 60% and 53% respectively (figure 4.35 to 4.37). Congestion was viewed by most respondents to have not change or become worse, as a Bangkok problem in general. The respondents at "The Paseo" were rather different on this point, with 53% indicated 'reduced', with explanations that the establishment of "The Paseo" in the area has helped them to avoid going into city centers where traffic is high.

However, there are some areas for improvement required to compellingly improve the community's transport that will be more sustainable. Through encouragement of non-motorized forms of transport, all three community malls need to place appropriate design and proper location of transport as well as better public transport, e.g. improve pedestrian area on road side, undergo foot path maintenance, allocate bicycle lane and operate shuttle bus services to nearby train stations. The study shows that more than half of respondent felt that it was difficult to ride bicycle and walk to community mall, therefore the location of the community mall is important, as if it is too far and more car friendly they will only encourage people to come to the community malls by private vehicle.

5.2 Limitations of the study

In writing this thesis, the study has relied on information from just three community malls. The data was mostly collected from respondents and community mall management. The access to management was important but difficult with one community mall management unwilling to comment at all. A larger study should include an investigation of more community malls, as well as discussions with local district officers.

5.3 Recommendations

This section contains two sections: future development of community malls, and further research.

5.3.1 Future development of community malls

The results have shown that community malls have a positive effect on sustainability that benefit the environment, social and economic aspects. However, community malls should work with "livable communities" in mind to encompasses the various influencing factors such as the effect and importance of transportation options including alternatives for the elderly, and the significance of walkability as a factor in developing a livable and healthy community, the importance of quality open spaces for human activity and health, restorative benefits, the importance of coordinated land use and transportation planning, and the relationship between livability and quality of life (Environment, Heritage and Local Government (2009).

Through the research it was found that 2 out of 3 community malls had bicycle parking; however there was no existing bicycle lane in all three places, which does not encourage the community to cycle. Non-motorized modes of walking and cycling are the most sustainable forms of transport and they improve safety and air quality and reduce traffic noise in the neighborhood. If community malls can encourage travelling by public transport such as local bus 'song taew', shuttle bus etc., the community will have more choice and can leave their car at home and drive less, which will impact the environment and the neighborhood in positive ways. For people to exercise these types of transport, the community mall needs to be embedded in to where the community lives, so that people can walk or cycle and where the distance between destinations is short.

'Aree Garden' that is situated in Ratchakru district (figure 5.1 and 5.2) is one example of a community mall that provides a clean and safe environment with shops and good services offered. Customers live in the area and walk or ride bicycle to the community mall as it is quite small and there is no large parking lot to welcome many cars (Amranand, 2012).

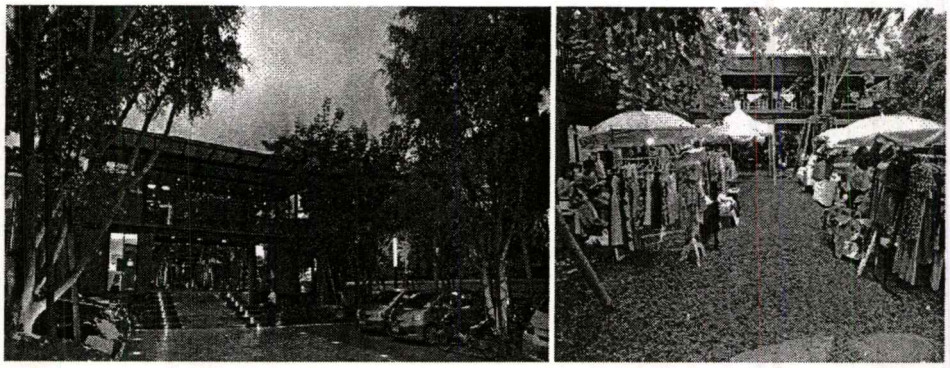


Figure 5.1 – 5.2: 'Aree Garden' Community Mall

The large community mall that is located on the main road should have public transport (other than taxi) passing regularly such as local buses, and shuttle buses that connect to the nearest BTS, MRT and Airport Link train stations. From the study it was found that "The Nine" will be the only community mall that will operate a shuttle bus service to pick-up and drop-off people from Huamark Airport Link station. The set up of such a service illustrates that "The Nine" is aware of its inefficient public transport, that no buses pass the facility and having only local bus service to connect people to the bus stop on Ramkhumhaeng soi 24. All of the above cannot be achieved without cooperation and permission of government offices, therefore community mall must work more with district offices to manage transport, allocate bicycle lane, improve the condition of footpaths and bus stops.

Community malls could use their land and open spaces for human activity and health by implementing an area circling the community mall for people to walk and ride bicycles, even bicycle and skateboard ramp and park benches for people to sit and rest outside the shopping zones. This method can be implemented with very low investment, however the gain will be for all stakeholders, as the community mall will then be more than a market with restaurants and shops, it will become a park and a safe playground for the entire community, as well as increasing the customer base of the local businesses.

In regards to the range of services provided at each community mall studied, it was found that no community mall provided a general medical clinic and only skin care clinics were available. It would be an improvement if the community malls could include healthcare clinic within their facilities.

5.3.2 Further research

The scope of this study covered the people's perception towards the contribution of community malls to local environment and quality of life with the focus of urban transport to relieve current traffic congestion in Bangkok. In the future, house hold and businesses need to become more sustainable and there will be a new generation of community malls in Bangkok. In this case, a more comprehensive study should be done on future community malls to investigate the strategies, designs, redesigns of old and new community malls to measure sustainable contributions. This can be done in a form of before and after implementation of environmentally sustainable concepts at community malls. To see what the industry has done to improve and solve certain problems found in Bangkok sustainable issues related to neighborhood / residential and recreation zones. If such studies are carried out, they should also include input by local district officers who can better integrate local transport plans with the new facilities.

It would also be interesting to study the amount of fuel saved per household if the subject shops at the nearest community mall.

5.4 Final comments

Bangkok is currently expanding outwardly with gated housing estates mushrooming in all outer districts. These gated estates are purely residential and since they are poorly served by public transport, the inhabitants are very car dependent. This study has shown that the establishment of community malls has been environmentally, socially and economically advantageous for local communities and that by sensibly mixing land uses, livability in neighborhoods can be improved.

An improvement in urban environment and quality of life in various areas requires two approaches: integrated planning and community participation and it is clear that the establishment of community malls needs to be integrated with the city's overall planning activities. District officers, transport departments, local people and the business community need to approach the problems together, not just with economic benefits as the objective, but also with the environmental and social aspects considered that will improve the living standards of everybody.

Community malls are an example of a distributed, decentralized network, as opposed to the large centralized department stores common in Bangkok. This decentralization has many benefits for local communities, and this study has shown that customers can reduce their travel time and distance, and thus their transport costs, saving money and time that can be used more productively with family and friends. When they are integrated into local infrastructure, the community malls can be accessed on foot, by bicycle and by public transport, thus reducing congestion, improving local air quality, improving the health of residents, providing opportunities for more social interaction, and finally they can be centers for local jobs which will improve living standards.

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APPENDIX 1

Questionnaire for studying community malls contributions to local environment and quality of life in Bangkok

By Ms. Suwimolwaree Rattanakrittanon, Postgraduate Student,
MBA and Management of Resources Management,
King Mongkut Institute of Technology Ladkrabung, Thailand and
TU Berkademie Freiberg, Germany

Date: _____ Interviewer:_____

Time:_____ Location:_____

1. Gender: Male:__ Female:__
2. Age: Under 20:__ 20-60 yrs.:__ Over 60 yrs:__
3. Nationality: Thai:__ Others:__
4. Occupation: Student:__ Office worker:__ Government Officer:__
   Business owner:__ Others:__
5. Frequency of visits per month?
   Once a month:__ Once a week : __ Twice a week : __
   More than 3 times a week : __ Every day : __ Rarely: __ First time:__
6. Reason to visit the community mall (you can answer more than one answer):
   To shop and use services:__ Work related:__ To meet friends:__
   A place to relax with family:__ Others:__
7. How did you travel to this community mall?
   By private vehicle:__ By public transport:__
   By Bike:__ By walking:__
8. Where were you before you came to this community mall?
   Home:__ At work:__ Other:_____
9. How far away from this community mall?
   Within 500 meters: Within 1 kms:__ Within 1-2 kms:__
   Within 3-5 kms:__ Within 10 kms:__ More than 10 kms:__
10. Where are you going after this community mall?
    Home:__ Work:__ Other:_____
11. How far away from this community mall?
    Within 500 meters: Within 1 kms:__ Within 1-2 kms:__
    Within 3-5 kms:__ Within 10 kms:__ More than 10 kms:__

12. How convenient is it to travel to the community mall without private vehicle?

Mode of Transport	Convenient	Reasonable	Difficult
Public Transport (Bus, Taxi, Motorcycle)			
Bicycle			
Walk			

13. Do you think community mall has helped to improve your suburb environment?

Factor	Improved	No Change	Worse
Trees and green space			
Recreation area			
Space for bicycle			
Condition of side walk			
Road safety			
Air quality			

14. Do you think community mall has altered your vehicle utilization pattern?

Factor	Reduced	No Change	Increased
Travel distance			
Time spent on travel			
Fuel consumption			
Congestion			

15. What do you like and dislike about community mall?

Like:_____

Dislike:_____

What will be your recommendation to this community mall?

_____

_____

_____

APPENDIX 2

Questionnaire for studying community malls contributions to local environment and quality of life in Bangkok

By Ms. Suwimolwaree Rattanakrittanon, Postgraduate Student,
MBA and Management of Resources Management,
King Mongkut Institute of Technology Ladkrabung, Thailand and
TU Berkademie Freiberg, Germany

Name of Community Mall:_____ Date: _____

Position:_____

1. Please provide information on the community mall industry in Thailand. Why the concept has boomed?

   _____

   _____

2. Do you feel that this style of shopping mall suit Bangkok urban city?

   _____

   _____

3. Please tell us about your community mall background, how the project began?

   _____

   _____

4. Who is your target customer?

   _____

   _____

5. Do you know how many people live and work near your community mall and how many customers visit your mall each day?

   _____

   _____

6. How many employment / jobs does your community mall provide? How many shops and facilities are opened at this mall?

   _____

   _____

7. Does the concept of sustainability apply to your community mall and in what aspects? E.g., energy, lighting, waste management, tree planting, transport etc.

   _____

   _____

8. Is it convenient to travel to your community mall on public transport?

   _____

9. How many car parking, motorcycle parking and bike parking space do you have?

_____

_____

10. Does your community mall provide facilities and functions that is convenience for customer to travel with bicycle?

_____

_____

11. Do you have information on your customer's mode of transport or travel behavior to and from your community mall? E.g., how many come by private vehicle, taxi, bus, bicycle and walk?

_____

_____

12. Do you provide information on how to get to your community mall on your media, such as site map and travel instructions for public transport (bus route no. train station etc)?

_____

_____

13. Does your community mall provide shuttle bus service for customer and employee, which pick up and drop off people from MRT station, transition, bus stop etc?

_____

_____

14. Do you have plans to open another community mall in the future? If yes, would you apply the concept of sustainable development to improve your business, environment and enhance the community livability?

_____

_____

15. What comments and feedback have you received from your customer, shop owners and worker in terms of the economy, environment and livability?

_____

_____

BIOGRAPHY

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