WALKABILITY: PERSPECTIVE FROM A LOCAL NEIGHBORHOOD IN BANDAR LAMPUNG, INDONESIA

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Abstract: *Walking is inherently a human activity, and has been related to many benefits including health, social, economy, and transportation, but there are still gaps from the western dominated literature to the local context of Indonesia. This research aims to understand the parameters of walkability from a short walk by people preferences from its origin focusing in a selected neighborhood of Kemiling Sub District in Bandar Lampung city. Data collection consists of building a basis of walkability parameters from literature of walking and walkability and identifying the local walkability parameters by synchronizing the data based on in depth adult interviews. Comparing the literature analysis resulted to five possible categories of barriers in the neighborhood: feasibility, destination, safety, comfort, and design quality. In the case of Bandar Lampung, locals probably perceived walking as more casual affairs with no expectation to the quality of their environment while accepting comfort as the most important barriers rather than safety.*

Keywords : *1. Planning 2. Walkability, 3. Neighborhood, 4. Barrier.*

INTRODUCTION

Built environment are defined as manmade structure or places or path (Gray, Zimmerman, & Rimmer, 2012). Booming communities, increasing highways and buildings reflect the benefit of development in the built environment but also in some ways creating problems of their own. The way people move from one place to another today required more energy that globally, land transportation contributes Green House Gases in as much as 20–40% (Kennedy et al., 2010). Experiencing continued high growth of private vehicle reaching 12% per year from 2000 to 2013 (Sukarno, Matsumoto, & Susanti, 2016), Indonesia's developing cities are not exempt from this problem.

Many alternatives to reduce mobility impact is researched as a way forward such as creating a more walkable community with its catchphrase of "walkability" which could be simplified as a "friendly environment to walk". Walking could relief different aspect of the issue in the urban sustainability context because of its flexibility. A walkable area could promote health, economy, social equity, and a more sustainable transportation networks in urban centres to contribute to the sustainability of an urban area. It generates indirect community health benefits by reducing air, water, and noise pollution and the overall level of traffic hazard. As it builds a way to engage in social activity and an eye on the streets, walking is considered to be safety assets and a social cohesion tools. Furthermore, for an urban areas to be truly sustainable in the future, there is a necessity to concentrate on the non-motorized modes (P. W. Newman, 1999) thus in return support walking as basic transport (Griggs et al., 2013).

Researcher have made many correlation of factors which contribute to walking motivation, with a simple premise that with supportive built environment, people will walk more. Nevertheless there are differences in result that suggested that while this is a necessity, a walkable built environment maybe insufficient to increase activity on its own (Humpel, Owen, & Leslie, 2002).

On the other hand although study of pedestrian preference and the built pedestrian pathways has been made in Indonesia (Murwadi & Nuzir, 2014;

Winayanti, Tsaputra, Mandiartha, Setiawan, & Zuraida, 2015), there is still a bias to specific areas like downtown areas (Hafnizar, Izziah, & Saleh, 2017; Setianto, 2017) or based on western context in lieu of examining it by its origin (the neighbourhood), and establishing similar understanding of walkability in the local context. Studies in the western context had predominantly focused on establishing statistical relationship but not the way the built environment developed (D. Wang & Zhou, 2017). Contextual differences between different purposes of walking and vast spatial socio ecological context are seldom unclear.

Condensing all of the above, a basic central question arises:

"What are the experiences of walking inside the neighbourhood of Bandar Lampung Indonesia?"

To answer this question, the objective of this study would be **"to understand the local context of walking"** by way of exploration of possible barriers of short trip walking in the neighbourhood by its residents. The emphasis for the potential barriers related to walkability and reproduction of walking is to be made. The focus is more in adult subjective views as a more common subject of interest, whereas children or other category could present a view which might limit reliability, such as dependency to the caregiver (McMillan, 2005).

METHODOLOGY

This study employs a qualitative approach and exploratory design strategy as ittries to re-imagine the conceptof walkability in the local context. The steps are firstly to become acquainted to walkability and walking research landscape and secondly to examine it by way of interviews.

Literature review of existing scientific articles to form a basis for examining people preferences in local context of the city of Bandar Lampung are a necessary step. By comparing the different database of earlier research, it would reflect and made clear the difference, or the convergence between the local and western context.

Interviews of local residents are a way to reflects the results of the earlier steps. The neighbourhood area selected is designed as a public housing district which have a natural boundary and reflects a more wider area inside Bandar Lampung city (the streets are hilly). The way the buildings arranged would made walking activity only occured inside the neighborhood main street.

According to the local law in Bandar Lampung City (Bandar Lampung, 2012), a neighbourhood can be established with a minimum of 75 head of house. Sample size amount is derived from the nature of a qualitative interview, the information compiled is regarded as enough if it has saturated or the information has become repetitive (Saunders et al., 2018). A defined saturation from grounded theory (Glaser, Strauss, & Strutzel, 1968) is being termed as:

"The criterion for judging when to stop sampling the different groups pertinent to a category is the category's theoretical saturation. Saturation means that no additional data are being found whereby the sociologist can develop properties of the category. As he sees similar instances over and over again, the researcher becomes empirically confident that a category is saturated. He goes out of his way to look for groups that stretch diversity of data as far as possible, just to make certain that saturation is based on the widest possible range of data on the category".

Similar description of data saturation is as follows (Grady, 1998):

"New data tend to be redundant of data already collected. In interviews, when the researcher begins to hear the same comments again and again, data saturation is being reached… It is then time to stop

collecting information and to start analysing what has been collected".

RESULTS AND DISCUSSION

A. Walkability research review

Studies of walking which have been made originally by the health and behaviour sector were based on concerns about creating environment that contributes to physical activity, while in the others such as transportation sector, the term are related to pedestrian level of services, Universal Design and transit oriented development in urban area. Walking as an activity is tightly related to its environment which is the place to walk (Figure. 1). From this point of view we have to understand that it has a twofold implication, which means that we have to understand the subject that walk and also the environment which is being walked upon.

Figure. 1 The relationship between walking and the environment.

In the health and behavioral sector the studies are primarily on walking as activity, while in the urban planning, architecture, or other study areas, as built environment in the natural environment. The focus in these effort leads to the term "walkability" which considered as the capacity of the environment to support walking. This is related to the environmental studies and regional planning which reaches up to the importance of creating a walkable urban area for sustainable development. From the many accordance of view, walkability could be termed as;

"The extent to which the built environment supports and encourages walking by providing for pedestrian safety and comfort, connecting people with varied destination within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network" (Southworth, 2005).

Critics from different sector have assumed that this criterion is too wide and probably incompatible in the different context of its assumed benefits. For example if one assumed a reasonable time or length between the origins of walking to a destination, there should be a difference between the time because of the purpose which could be related to commuting, or doing errands, or to health recreational aspect (Forsyth, 2015). There is also a difference between individual preferences for the visual interest aspect which depends on many things. Also from the social and economy aspect we would have different outcomes if we examine that for the benefit of vibrancy on the street, there exist also a higher housing price.

Forsyth (Forsyth, 2015) in its review of walkable place concludes that there are three dominant discourses in walkability focuses in the means, the outcomes, and walkability as a proxy for a better urban place. While walkability being studied by each sector (i.e. health sector, transportation sector and urban planning sector) the basic of walking are differentiated depending on its purpose, perspective of its demographic and also spatial locations (Ewing & Handy, 2009; Forsyth, 2015; Y. Wang, Chau, Ng, & Leung, 2016). It is worthwhile to review these sector researches related to the discourse of walking and walkability.

B. Walkability studies framework. review

Studies on walkability have been made to be an interdisciplinary studies which relate mostly from health and transportation sector (42). Walkability study approach are mainly based on the socio ecological framework, and statistical relationship between walking motivators or factors, while dividing it into types of walking and socio demographical characteristic of individuals. There are study on travel as a mode choice and derived demand for activities which introduces trip chaining and short walk to explain spatial patterning or local context (Feuillet et al., 2016).

By its purpose, walking could be made because of a destination to access, but it could also being made without destination (Table.1). From its destination research has made two distinct purposes which are utilitarian purposes, and also recreational purposes walk. The later no destination walking types are identified by the health sector which focuses on restoration or preventing stress, called strolling.

The different scale, which are; city level, neighbourhood level and street level, are some of the spatial context measure within walkability research. Some critiques have stated that walkability study are lacking a theoretical basis, accounting for space time behaviour, and did not linked perceived and objective measurement which being addressed by Alfonzo (Alfonzo, 2005) in his hierarchy of walking needs (Figure. 2). But this hierarchy is not directly linked to the decision to walk; rather it was dependent on personal threshold within the aspect of the hierarchy. Some terms are not exactly intuitive and require more understanding of relationship which linked to all aspect within it.

Figure. 2 Hierarchy of walking needs according to Alfonzo (1995)

Researches by urban design sector acknowledge that environment and the policies which affect it is considered very important to understand. Understanding between different context and also policy regarding the way urban areas are built should be made as added perspectives.

1. Scale

Different scale research related to walkability consists of routes, neighbourhood, an area or district, or examining cities (Table.2). On street or pathway levels, routes are made as the expanded views to collect information of different supposed necessities exist in the pathways. Neighbourhood level research is an expanded view of urban space such as streets within the limit of walking from the residential homes.

Table 1. Walking types in the literatures

Walking types	Terminology	Example walking
Destination based	Utilitarian/commuting (work and non work)	School, office, transit point, stores
	Recreational (non work)	Park, plaza, public facilities
Without destination	Strolling	Exercise, walking pets.

Sub district or area such as commercial or educational or sometimes religious activity areas are made to study how to increase safety and walkers in the areas. In the city level research are made to examine a better transportation scheme, connecting different region with the end goals to reduce vehicle miles travel by way of walking.

Problems of the Indonesian cities right now are parallel to the western cities regarding urban sprawling, and auto dependence in transportation which creates problems of segregation in the society (Jacobs, 1961).

Table 2. Scale of research of walkability

Scale	Street and Route	Neighbourhoods	Cite specific	City
Citation	Ewing et.al (2009), Dannenberg (2005), Cain (2014), Ameli et.al (2015), Tanan (2017)	Saelens (2003), Southworth (2005), Moudon et.al (2006), Zuniga Teran (2017)	Cervero (2001), Mcmillan (2007), Winayanti et.al (2015)	Krambeck (2006), Boer et.al (2007), Pucher et.al (2010), Gota et.al (2010), Frank et.al (2010). Wibowo et.al (2015), Hafnizar et.al (2017)

New urbanism movement in the 1980's were created by the same problems, and it was intended to build neighbourhood that has walkable destinations within 5-10 minutes' walk ("Urbanism Principles," n.d.) coincidentally similar to Clarence Perry "neighbourhood unit" which has a community centre within 5 minute walk or 400m if it were re-examine by its length, which was supported by most surveys (Administration, 2002; Association, 1997; Litman, 2008; Sherret, 1979). The core assumption is that urban space as an important part of the built environment which were always being perceived by the walkers, should create a "positive" walking experience, which means that streets, sidewalks and paths (pedestrian routes) are comfortable and interesting (Talen & Koschinsky, 2013).

Existing studies on walkability in Indonesia have been made mainly on examining specific street district such as commercial (Murwadi & Nuzir, 2014) or downtown areas (Hafnizar, Izziah, & Saleh, 2017; Tanan, Wibowo, & Tinumbia, 2017; Wibowo, Tanan, & Tinumbia, 2015; Winayanti et al., 2015). Another research were made to examine the school or campus area (Setianto, 2017) and tries to understand walkability from its origin a residential district to its destination which is school. It was evident that neighbourhood in Indonesia is not quite well researched albeit its importance as the original intention to walk.

2. Perspectives

Two different perspectives commonly found on walkability research are to be more subjective (internal) or to be more objective (external). Subjective lines of inquiries are perceived assessment made from an expert reviews, pedestrian, or resident views within selected areas. Objective inquiries are made by way of audit of the street level or examining routes inside different scales of references as the operational object that could be measured have emerged or have been established previously. Another (Shay, Spoon, Khattak, & Center, 2003) uses the terms opportunity as the external (element, cost-benefit, infrastructure), and motivation as the internal (physical condition, preferences) perspectives.

Acknowledging that to acquire the most comprehensive result of correlating walkability to walking, studies such as Zuniga-Teran (2017), Krambeck (2006) or Gota et.al (2010) have uses a somewhat mixed perspectives (Table 3). Using firstly account of variables by people references, then uses objectives tools such as pictures or measurement to observe the actuality in the area.

Deeper subjective inquiries reveal that design qualities related to pedestrian environment could be considered as the key to make people walk . Research by Ewing et.al (2009) specifically measured the design quality related to walkability in the physical settings such as imageability, enclosure, human scale, and transparency

by way of assessment from expert which being transformed to an objective variables in the field. The problem to this is the contextual variance which serves as the bases for the experts, as it is probably not in common to other country such as Indonesia.

Table 3. Perspectives of study of walkability

Perspectives	**External**	**Internal**	**Mixed**
Citation	Ewing & Handy (2009), Frank et.al (2010), Cain (2014), Ameli et.al (2015), Winayanti et.al (2015), Cain et.al (2017).	Li et,al (2015),Ferrer et.al (2015), Zuniga-Teran et.al (2017).	Krambeck (2006), Gota et.al (2010)

C. *Summary of barriers related to walkability.*

Summarizing the different theme and definition regarding the barriers within the scales and perspectives this research has argued that not all themes would have to be studied exclusively. There are aspects that are limited within each level of scale and perspectives (Figure. 3).

This research finds that five major theme related to the neighbourhood level are design quality, destination, safety, comfort and feasibility (Table.4). The four former could be measured in the observed area, while feasibility is purely related to the perceived aspect of the participant which could mean the aspect of social and culture are embedded within the theme (related to personal limits in Hägerstraand, 1970). Feasibility which is tightly related to one's own perception would have to be inquired by means of questioning the subject themselves.

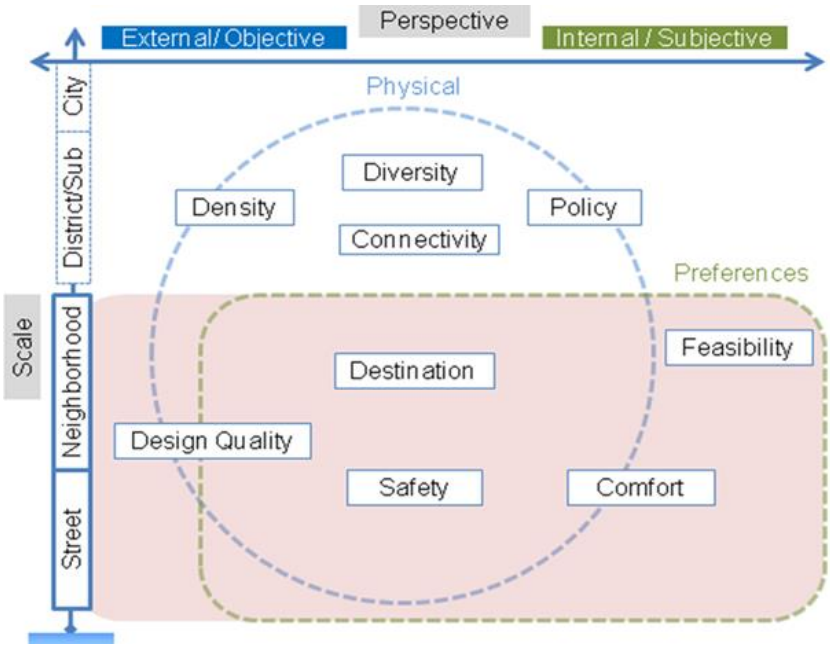

Figure. 3 Different themes of barriers presented in different scale and perspective (blue domain are the more objective theme, green domain are the more subjective theme, pink area are this research domain)

Table 4. Neighbourhood related theme of barriers from the literatures

Theme	Definition	Variables
Feasibility	Time/distance/ physical limit related to one's own preferences (Alfonzo, 2005; Hägerstraand, 1970)	• Considerations of mobility, • Time/distance limit to walk, • Other responsibilities constraint (children, elderly care) • Health, motivation/ self confident
Design Quality	Physical features related to the qualities of the area (Ameli et al., 2015; Ewing & Handy, 2009; Forsyth, 2015)	• Sight lines, • Building height vs street width ratio, • Windows at eye levels, Sensory stimulation : • Street furniture, • Planters, • Buildings shape/color variance, • Embedded art, • Visible active peoples.
Destination	The existing object/amenities which a motivation to walk are defined (Zuniga-Teran et al., 2016)	• Stores, • Transit point, • Market, • Park, • Public amenities including school, religious places
Safety	Condition of being protected (Safety Definition by Merriam-Webster, n.d.)	Safety from crime • Street lighting at night, • Visible other people, • Cleanliness Traffic safety • Traffic volume, • Traffic speed, • Vehicle attitude, • Crossing, • Waiting times, • Raised pathway
Comfort	A state of physical ease and freedom from pain or constraint ("comfort | Definition in English by Oxford Dictionaries," n.d.)	• Shade, • cleanliness, • continuous walking surface, • separation from traffic or slow traffic.

D. ***Resident Perspectives***

Neighbourhood respondent's listed 28 adults with 9 people are older than 55 years old, which is consider a senior citizen in Indonesia. There are 12 open ended questions to the locals, from demographic related questions to a preference related questions with the last one being a pictures selection cases of design qualities preference (see Appendix B. Questionnaire).

1. Reason to walk and its destination

In the question which translates to *'What do you usually do around your house that requires walking?'* the research explore the choices related to walking, within its two common activities, walking for transport or utilitarian motifs and walking for leisure

activity or health motifs. Some of the walking activities are considered as the primary choice for these reasons:

- Prayer
- Retails
- Supermarket
- Farmers market
- Food store
- Health
- Shop
- To public transit
- Work

While the majorities are not exactly keen to walk for a transportation motif, especially for older adults, it is true for adults that have their basic mode of transportation as walking. One example is because they did not have any motorized vehicle and because they choose to ride the public transportation which requires them to walk to the transit point. Others point to the health purpose of walking and some tradition to see their families like for examples:

I walk and jog but only if it's in the morning. If I have time I could walk for 20-30 minutes around neighbourhood. There are many relatives of mine here so I visit them once a while. (Nahori, 65 years old fish farmer).

In 7-8 minutes I usually walk in the morning for health reason. I play ping pong in front of mosque. (Mursalin, 59 years old).

In the study area, there exist many types of buildings related to commerce, such as retail stores, supermarket, food corner, other retail shop, and farmers market at the end of the neighbourhood. Amenities such as clinic, bank, sports field, and swimming pool too exist within its periphery. This neighbourhood has somewhat all of the necessities, albeit just one from all its types. But there are not many that mention bank or swimming pool because apparently it is not a weekly or daily walking activity. It was shopping for necessities that exist as the second common activity involving walking in weekly basis, and the first one is praying activities.

A key finding in this research is praying activity for five times a day is the number one reason to walk which is to the mosque. Although it is clearly not belong to transportation or leisure purpose, it slightly tends to be the latter as it provide some relief and ease of tension between daily activities. This result could be interpreted to be a reason to have the destination and it's surrounding as a centre point to deliver more walking activity for this neighbourhood. One thing to note that all walking activity exists on a weekly basis except for praying. The answer from the resident especially from the older adults, have arises multiple times:

I walk for prayer or to the minishop, three times minimum a day in 15 minutes. (Safwandi, 58 years old, cake shop owner).

I walk every time to the mosque for a maximum of 15 minutes. (Wahyudin, 66 years old).

I always walk when it is possible to pray (12 minutes). Maybe if it's raining hard or has a strong wind it's not possible for walking comfortably. (Anggoro, 39 years old, lecturer).

1. Feasibility

As being said in the literature reviews, feasibility is explored exclusively in this questionnaire with the questions which roughly translate to '*Do you have certain feelings and maximum length about your various walks trip?'*. Within this question, this research implicitly tries to explore the various walk trips and its feasible length of time which has been said to be 5-10 minutes' (400 m -800 m) walk from its origin. And acquire the preference for using walking as oppose to other option like vehicle usage.

The result were in tune with previous studies with answers ranging from 5-60 minutes but the average stays at 12,6 minutes for transportation and utility related walk, and 27 minutes for leisure or health related walk. Of those that have a very wide difference to the average, there exist a commonality which was their basic mode of transportation is walking, and they did not have any motorized vehicle. For example, from a day worker whose walking from her

home to the work area vicinity is still considered very far (>30 minutes per day):

I help clean the house, except Sunday I walk to be here (30 minutes). Sunday I am at home. For washing and buying groceries I walk to the mini shop for 5 minutes. (Yuli, 42 years old housekeeper).

This was not an undesirable outcome because these adults appear to have chosen the most appropriate method for their particular approach to reaching their destination. Affirmative response to leisure or health purpose walk is not only in the younger adult but also from the older adult can be further supported by the qualitative data, of which the following three comments are examples:

In weekend I walk and jog, for 1 and half hour. I have 20 minutes walk to supermarket (Indomaret) if I want to. (M Ramandisya, 20 years old student).

I walk and jog but only if it's in the morning. If I have time I could walk for 20-30 minutes around neighbourhood. (Nahori, 65 years old fish farmer).

From the option to use other mode of transportation, the four main types of modes which in order of preference by the recurring answer are: automobile, motorcycle, online transportation (using two wheeled vehicle), and lastly walking. It is not clear however regarding the use of walking for some of the answer is seldom paralleled to the use of motorcycles like in this example of comments:

I used gojek (transport online) for transport if I don't have my motorcycle. For minishop and market I walk, just short of 10 minutes. (Febria 22 years old student).

I used to use motorcycle and public transport. Nowadays people use online transport more. I shop with motorcycle. (Wahyuddin, 66 year old).

In this result it could probably argued that nowadays people seen walking as their last choice in terms of transportation, but it is not true in terms of short walk, especially for leisure or health purposes. Table 5 is an extraction of time feasibility of different types of walking.

Table 5. Time feasibility of walking from resident perspectives

Types of Walking	Example	Time Feasibility
Destination based	Utilitarian/ commute/ errands	12,6 min
	Recreational (non work)	27,1 min
Without destination	Strolling	Up to 1 hours

2. Comfort

The qualitative data also showed that adults were selective in choosing route, it was necessary from the route to achieve their desirable comfort level. This is demonstrated in the following comment:

It is good for street to have shade because it is the source of cool breeze. (Fahrul, 54 years old office worker).

For walking I did not think much about safety, just the heat from the sun. I just look for the more shade and coolness. (Niken, 36 years old worker).

Further comments reveal that although shades are necessary, they also could creates it by their own effort like in this comments: "I just have my umbrella if there's heat" (Yuli, 42) or from another "Just needed umbrella if it's cloudy" (Linda, 48). Other comfort term are related to cleanliness as in this example:

'It is clean here, there is no smelly drainage. I prefer cleaner look to the street. The structuring of building is needed too. I prefer straight road not really turned ones. Safety is good. (Zamzami, 75 years old pensioner).

These findings suggest that comfort is important especially in terms of weather patterns and cleanliness, and it is connected with the intention and tools to relief some of the effect.

The geography of the neigborhood area (5-10% steepness) which was deemed as necessary to be explored did not act as a barrier in the result. As the residents acquire knowledge of their surroundings, it is possible that they already minimized their effort and integrates it in to their comfort level so that it did not relate in the conversation. From the older adult resident it is not explicitly explained about the hilly street as a barrier but it is apparent that they did not walk more than necessary from their home, just outside their house or within 5 minutes walk. Sometimes there are exceptions that they have more than 400 m walk, but it usually takes more than 5 minutes, which were related to own pace as feasibility requires and for the health purpose.

3. Safety

Concerning safety, there exist a lot of terms and variables in the literatures, ranging from the pathway condition to the safety from crime (lighting, absence of people) and also traffic safety (crossing wait time, crossing density). Although all of that was considered here, the truth of the matter is, there are not many terms that are being said in the discourse. For example in terms of street crossing, the existence of crossing path in the vicinity of neighbourhood is none, because of the narrow street; people usually just cross without problem.

The street here is safe for crossing, just at the big street I need to be careful. (Yuli 42 years old housekeeper).

Inside the neighbourhood vehicle rides slowly because there's a lot of children. (Febria 22 years old student).

For others, the safety is in terms of escorting the dependent such as the grandparents to their grandchildren: 'I used to walk 15 minutes to escort my grandchildren to school, because the narrow street and a lot of vehicle. I chose a route because of the good condition'. (Sutoyo 63 years old pensioner). There are more explaining the preferences of the resident in terms choosing a route of low vehicle activity, which suggest that vehicle plays a part in terms of safety for example ; 'For walking I did not think much about safety, just the heat from the sun. And I chose route from the low vehicle activity'. (Niken 36 years old Worker).

In terms of safety from crimes, most resident agree that seeing more people could relief their perception of unsafe street, but it was also related to some of the design qualities which is complexity. It was apparent in these excerpts:

I prefer nice weather; it is not good to walk when it is noon time. And I prefer more people on the street. (Hasbuna 72 years old Pensioner).

These conclude that there are two opinions on the neighbourhood safety barriers, in traffic safety some explains that it was already safe, but some would still consider precautions for their dependent. For safety from crime, the resident prefers a more social environment with more people visible and a somewhat less wall in the sides of the streets.

4. Design quality related to walkability

Not much being said in the design quality aspects. There are already five terms that researcher acknowledges (imageability, enclosure, human scale, transparency, complexity) and it was hinted by some of the excerpts such as:

For walking I prefer some light and appearance of people or houses, not the side wall of houses (Anggoro 39 years old lecturer).

I look for scenery when walking, but if there are trees, I prefer it the more. (Nahori 65 years old fish farmer.)

The first one is related to the terms transparency, which is related to degree of perception to human activity. The second were related to imageability, which is the quality of the place that makes it recognizable and memorable. This research

also finds some explanation from the selection of two different pictures related to design qualities (see Appendix B. Questionnaire).

From the selection of two different types of routes (Figure. 4), the way people always prefer is for the shade to give to their walk. In the first choice between a more enclosed route (by trees and shades) and a route with some complexity (the minaret of the mosque), 60% of people choose the former. More than 90% choose the greener sidewalk which being considered as shades rather than just transparency in the face of the housings.

Figure. 4 Two main streets depict a slightly more greenery and shades (left) and the more barren one (right)

In the design quality aspect we conclude that the way resident perceived their neighbourhood is from its transparency which related to human activity and safety and also greenery which relates to comfort too, with a little complexity which has been said before. To evaluate the quality in the actual street, it is advisable to take care that this criteria did not coincide with other terms in the other categories.

SUMMARY

The results obtained from public perception clarify the initial assumption that local contextual knowledge is important (Cubukcu, 2013) for use in such social studies. In the context of previous research from a variety of sources it is known that the barrier has so many parameters that it makes it difficult to record as well as find suitable solutions to reduce barriers to walking. This research has argued that not all parameters would have to be studied. The conducted interviews and analysis results have supported that the local community resident especially in Bandar Lampung Indonesia in a regular journey from their neighbourhood is paying their attention to a few things only.

From the interviews it could be summarized that for the adult, streets ideal to walking consist of; “tree shades”, ”good scenery”, “maintained”, “good driving attitude”, and “people in the street”. Their walking barriers have been categorized based on literary assumptions and produce five categories which the four latter have been tested for significance in the real environment:

1. Feasibility
2. Destination
3. Comfort
4. Safety
5. Design quality

For commuting purposes, walking has the lowest rank in terms of mode option, after vehicle and online transport. Many barriers are inexistence (slope, and design quality variables). This research have different result from others (Cubukcu, 2013; Ferrer, Ruiz, & Mars, 2015; Humpel et al., 2002) regarding hill or slope area, although the other research does not made sure what kind of actual slope that made it to be a barrier (the neighborhood here have 5-10% hill). For the older adults’ (>55 years old) views, apparently the hilly street is somewhat a barrier. Based in the interviews, older adults usually have walk in the feasibility of their physical condition, and in the exceptions that they have more than 400 m walk, the route were usually in a more levelled street.

This research acknowledge its limitation that it is conducted from only a small scale (time-wise and area-wise)-neighborhood study. There is an assumption that the potential walkers have the same probability to use the streets. And lastly the perspective used are from adult (age >18) view only.

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