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Abstract: Walkability is considered a critical factor that has shaped pre-industrial cities, and today it is promoted as the central element to achieve sustainable urban design and resilient communities. This paper aims to identify walkability profiles specific to Brisbane, Australia, one of the Australasian region's fastest-growing cities. The study seeks to understand if the specific urban conditions of Brisbane impact people's attitude towards walking. Data on Brisbane walkability have been collected through a quantitative methodology; findings reveal that Brisbane pedestrians walk an average of 28-35 minutes daily, covering a maximum of 3.3 kilometers. The research also indicates that age is not a critical factor influencing walking times or distances and that the movement speed for distances below 10 kilometers is comparable to the average of other transport modes (car and public transport). This research is a pilot study to understand Brisbane's walkability and to inform future research on sustainable urban design in the region.

1. INTRODUCTION

The form of our cities has drastically changed in the last century. The introduction of motorized vehicles has broken the traditionally compact morphology of urban centers (Mumford, 1991); criticism of car-based urban design and planning started in the 1960s. The seminal works of several activist designers and planners have advocated a return to design paradigms more in line with the pre-industrial city (Cullen, 1971; Jacobs, 1961; Lynch & Studies, 1960), centered on a walkable network and integrated systems of public spaces (Braben & Guaralda, 2013). Urban sprawl is often discussed as a significant concern for the sustainability of our cities today. The unprecedented and ubiquitous growth of urban centers, supported by the auto-dependent modernist design paradigm, has generated significant issues that have proven difficult to manage, such as air/noise pollution, energy consumption, and poor environmental health (Abraham, Sommerhalder, & Abel, 2010; Faengsomsri et al., 2020; Purciel et al., 2009; Rinchumphu, 2019). The impact of a dispersed urban form has also been assessed in terms of wellbeing and safety (Kamruzzaman et al., 2016).

On the other hand, walkability has been recognized as one of the elements contributing to a resilient community (Jacobs, 1961). Walkability is at the core of the post-modern design paradigm focused on loveable precincts, and since the 1980s it has been promoted as a central element in urban design. Walkability refers to providing inclusive, accessible, safe, and green public spaces, which are also some of the pillars of future sustainable development, as discussed in the New Urban Agenda (UN-Habitat, 2016).

Walking is recognized for its impact on welfare and the broader society; it reduces the risk of cardiovascular and other chronic diseases while enhancing community engagement and social capital (Leyden, 2003). People in walkable communities are more likely to know their neighbors, participate politically, trust others, and be socially engaged (Duncan et al., 2011; Rinchumphu et al., 2021; Pasuthip & Panthasen, 2009). Therefore, retrofitting walkability into auto-dependent cities can critically improve the health of our urban systems in numerous ways (Foth & Guaralda, 2017).

Designing for walkability requires appropriate information, such as the average pedestrian walking distance, maximum walking time, average walking speed, and demographics (Bopp, 2005; Newman & Kenworthy, 2006; Parapari, 2010). All these parameters are context-specific and typically differ in different locations (Spearritt, 2009; Vine & Buys, 2010). The majority of studies developed on walkable communities have been developed in the temperate northern hemisphere. In contrast, areas in the southern hemisphere have their own challenges that require a better understanding of specific contexts (White et al., 2016).

Brisbane, Australia, is a relatively young city, which sometimes presents challenging conditions for walkability, such as the hilly configuration and a car-based layout, not only in the suburbs but also in some parts of the urban inner core (Guaralda & Kowalik, 2012). There is a limited understanding of Brisbane's attitude towards urban walkability (Vine & Buys, 2010). This research aims to understand how people perceive walking in this city; it aims to assess how local attitudes align with other studies conducted in different geographical areas, namely the temperate northern hemisphere. Quantitative data were collected through an online survey; participants were recruited, covering a range of demographics and different transportation preferences. The expected outcome of the research was to understand attitudes towards walkability in Brisbane. Findings can inform further investigations to develop an urban design for increasing the walkability in a growing city.

The paper is structured in six sections: (1) introduction; (2) literature review, including study area background; (3) aim of the study; (4) methodology; (5) results and discussion; (6) conclusions.

2. LITERATURE REVIEW

2.1 Traditional walking city versus auto-dependent city

Walkability is a topic that has been addressed extensively in literature at least since the 1880s. Studies generally compare three different urban forms. First, there's the traditional preindustrial city based on pedestrian networks with a highly compact core about five kilometers wide and with a density of 100 - 200 people/hectare. Usually, cities developed following this paradigm are based on pedestrian networks. They have a strong integration with the surrounding natural features, they can contain narrow streets, and the city form is relatively compact (Benevolo, 1980). These urban centers are walkable by necessity, with an average travel time of minutes (Audirac, 1999; Newman & Kenworthy, 2006).

Second, auto-dependent cities were broadly designed following a modernist paradigm (Couch, Petschel-Held, & Leontidou, 2008). Auto-dependent cities are often greenfield developments; in Australia, several new suburbs still use this approach, resulting in challenging social outcomes (Adeniyi, Guaralda, & Dias de Carvalho, 2017). This urban center uses more energy from automotive travel to density than any other major urban center in the world (Newman & Kenworthy, 2006).

Third, cities developed in the last 30 years follow a post-modern paradigm. Their design is defined by the development of precincts, sometimes self-referential, based on specific design principles, such as transit-oriented development, landscape-centered development, or people-centered development (Hirt, 2009). All these contemporary design approaches try to recover the walkable scale of traditional cities, mediating and negotiating the needs of contemporary life, influenced by technological needs and capabilities (Marshall, 2009).

The Marchetti's constant is a theoretical approach that quantifies the average amount of time spent travelling to the city center and can be used to understand urban form and urban structure. This theoretical approach estimates that each journey to the urban core is about 30 minutes to one hour. Travel time stays relatively constant; even if transport systems evolve, it represents people's attitude towards travel times (Southworth, 2005; Spearritt, 2009). This theory explains why some cities are compact or spread out; cities based on compact, walkable networks can afford efficient trips within the Marchetti's constant. Cities based on cars cover a greater area because technology affords longer journeys within the same timeframe when appropriate infrastructures are present. Low-density housing and zoning became by-products of a lifestyle based on private vehicles and a cultural milieu aiming to rationalize the urban form efficiently, subdividing functions into different areas (Phelps & Wu, 2011). Australia has followed a suburban development model, resulting in low-density suburbs even near the urban core (Guaralda, 2017).

Social evolution and population growth are highly complex dynamics; often the solution to manage these complex issues is to simply extend infrastructure (Bamford, 2009; Braby, 1989), rather than propose densification or radical reform of the existing urban forms (Guaralda & Kowalik, 2012; White, 2008). The early stages of Australian and American cities developed when urban sprawl was easily manageable (Guaralda, 2017). With increased carbon energy emissions, overall lowered health index, and increasing traffic congestion, retrofitting walkability into the urban fabric has now become a paramount necessity (Au-Yeung et al., 2011).

The literature illustrates the more common issues with car-based development, such as energy consumption and pollutant gas emissions (Marshall, 2009; Newman & Kenworthy, 2006; Rogers & Sukolratanametee, 2009). The benefits of walking for the environment and the health of regular walkers are also discussed and recognized (Dyck et al., 2011; Guaralda, 2006). Walking reduces mental health problems, increases the interaction between residents, and improves overall safety (Kamruzzaman et al., 2016; Pasuthip & Panthasen, 2009).

2.2 Walking factors

The literature stresses the importance of relational and proximity factors between places of residence and workplaces as a central factor to determine walkability (Southworth, 2005; Spearritt, 2009; Li, Corcoran, & Burke, 2010). Walkability models such as "Walkscore", "Rate My Street", and "Walkanomics" are online platforms that generate journey-to-work information relying on algorithms based on the density of a place, zoning, and proximity to utilities or amenities (Duncan et al., 2011).

The quality of the journey is an essential factor in fostering walkability; path network quality and walking experience quality are also important (Jaskiewicz, 2000; Xu, Yuan, & Li, 2019). Southworth (2005) indicates the importance of secondary factors such as

1. Number of intersections.
2. Pedestrian comfort
    a. Climate
    b. Geography (hills etc.)
3. Pedestrian Interaction
    a. Visual interest
    b. Public safety
    c. Street activity
    d. Parks, recreation
    e. Explorability
    f. Shelter, Awnings
    g. Footpath quality
4. Connections to other infrastructure
5. Age
6. Health
7. Pedestrian Behavior

Jaskiewicz (2000) goes into further detail about the importance of journey quality. Some of his indicators that can be added to Southworth's model:

1. Street enclosure
2. Complexity of path network
3. Building articulation (architectural features)
4. A sense of a buffer zone between the walker and the street.

Central in both classifications is the user's experience as well as safety considerations. *The* Concise *Townscape* is a famous dissertation outlining the importance of viewers' experience within a city (Cullen, 1971). The importance of the user's experience is often put in the background to give priority to capacity and demand. Streets became anonymous and bland, making the act of walking reductive and ordinary (Bentley, Jolley, & Kavanagh, 2010).

2.3 Walkability and transit synergy

In recent years, retrofitting modernist urban forms has become a central argument in literature.

Transit-Oriented Developments (TODs) have been proposed to minimize automotive dependence in Australia and America (Curtis, Renne, & Bertolini, 2009; Kato & Ando, 2019; Westerman, 1998). Land use in successful TODs integrates walking as an essential part of a person's journey to work and reinstate a degree of human interaction with the public domain. TODs aim to connect nodes in a city via public transport rather than main roads and develop areas surrounding the nodes as walkable, self-sustainable communities (Curtis, Renne, & Bertolini, 2009; Westerman, 1998).

This notion of integrating walking with other types of sustainable transport is highly feasible in Brisbane and in Australia in general. Accessibility has become one of the Brisbane City Council's (BCC) primary objectives, as reflected in the development of new public transport infrastructures (Brisbane Metro project, 2019).

2.4 Walkability in Brisbane

Burke and Brown (2007) indicate that in Australia, attention has primarily been focused on walking distances to and from public transport, to assist with public transport and land use planning. What is important to note is that there is an awareness of congestion in Brisbane; there is active financial support and political will to improve transit systems, and there are opportunities for public transport to enhance walkability (Bajracharya & Khan, 2006; Burke & Brown, 2007; Spearritt, 2009).

Automotive dependency in Brisbane is still a recurrent issue; Hensher (1998) indicates how driving is a cheap, affordable, and flexible option for Brisbanites. Brisbane drivers are yet unwilling to give up their cars' comfort, privacy, and reliability (Burke & Brown, 2007; Hensher, 1998). Previous studies have enquired about the impact of Brisbane's harsh climate and dispersed urban form on walkability; urban form has been recognized as an important factor in increasing walking transport (Kamruzzaman et al., 2016). These studies also point out the importance of understanding travel attitudes and users' perceptions to have a more comprehensive picture of walking in Brisbane.

3. RESEARCH AIM

This study aims to profile Brisbanites' attitude towards walking; findings can contribute to a broader discussion about how newer cities can become less auto-dependent. According to Newman and Kenworthy (2006), Brisbane is the 3rd most auto-dependent city in Australia, with cars being driven 6,467 km per year per capita; Perth and Adelaide are more auto-dependent but have a lower population and density levels. Brisbane is expected to grow 114% from 1.9 million people to an estimated 4.0 million by 2056 (ABS, 2012), the 2nd highest growth of any capital city in Australia. This context makes Brisbane a suitable focal point for this type of research.

Table 1 Density/Car use for Australian capital cities

	Density (person/km^2)	Car use per Capita per Year (km)
Sydney	2058	5,885
Melbourne	1567	6,436
Adelaide	659	6,690
Brisbane	**314**	**6,467**
Perth	346	7,203

Brisbane has a complex morphology that is heavily determined by many geographical boundaries and has little room for geographical expansion due to neighboring cities and natural features (Spearritt, 2009). All of this further emphasizes the importance of retrofitting the existing urban fabric to promote sustainable growth. The density/energy consumption of Australian cities in comparison with other developed worldwide cities. As a solid exemplar to the host city, a spectrum low and spectrum high city would reveal optimum results for comparison.

Walking can be assessed based on different variables and different perspectives; in this pilot study, the focus is on the journey between home and work (Audirac, 1999; Marchetti, 1994; Southworth, 2005; Spearritt, 2009; Li, Corcoran, & Burke, 2010). The first objective for this pilot is to understand the attitude towards walking concerning the distance between home and work; the aim is to identify the threshold distance that Brisbanaties perceive as short enough to be easily walked daily. The second objective is to understand how different urban nodes are perceived as more walkable than others within the broader context of Brisbane and its contiguous metropolitan area.

The pilot aims to test assumptions derived from literature mainly developed in the northern hemisphere: (1) the average person will only walk 20-30 minutes each way; (2) the mean travel time for any mode of transportation will be 30 minutes to an hour each way, according to Marchetti's constant; (3) people who live in denser areas of Brisbane are more likely to walk on their journey to work; (4) the distance between work and home is taken as the primary factor influencing transportation mode in this pilot study.

4. METHOD

The study employs an online survey to gather people's attitude towards walking from home to work. Participants were asked to share some demographic information as well as their daily commuter paths. Data collected are represented through diagrams and graphs to compare effectively different transport modes in terms of distance, time travelled, and demographics within the Brisbane metropolitan area.

The CBD of most cities is traditionally walkable (Newman & Kenworthy, 2006); however, secondary urban nodes are more often in need of attention and scrutiny, especially in low-density dispersed cities like Brisbane. The second part of the study inquiries about travel times and patterns between secondary urban nodes within the urban fabric, to assess which neighborhoods are perceived as more walkable. Data collected are represented in several maps, which reveal the areas perceived as walkable and un-walkable in Brisbane. Secondary analysis of data collected links attitudes towards walking with age, gender, social status, or education.

The final stage of the pilot enquires about which walkability indicators matter the most to the Brisbanites.

4.1 Stage 1: Threshold analysis

A preliminary field survey has been conducted targeting a variety of popular communities around Brisbane. Participants have been analyzed as 3 different cohorts based on age group (18 – 25 years old, 26 – 40 years old, and 41 – 70 years old). Meanwhile, the transport modes are divided into 3 types: walking, transit, and car. Data will be represented in the template shown in *Figure 1*.

In *Figure 1*, the horizontal axis shows the distance (km) of the usual trips to their business (work, study, etc.), and the vertical axis shows the time (minutes) of the trips; the layout is separated into the 3 main transport modes. The size of the bubble indicates the age of the participant. By tabulating the results collected through field surveys, an idea of walkability thresholds in Brisbane will be made evident. This information will then aid in Stage 2, where we determine how many people live and work within this threshold.

4.2 Stage 2: Location analysis

The second iteration of the survey focuses on the time, distance, and mode of transport for the journey to work. This section of the survey also records where participants live and work and asks why they choose their chosen mode of transport and what walkability indicators matter the most to them.

The most important information to be displayed was the mode of transport for each location and any other physical factors that could affect people's travel behavior, such as hills, main roads, bus and trains, and geographical location. By visually projecting these figures, a clear assessment can be made about which areas of Brisbane are walkable and which are not. It also reveals the interconnections between areas in Brisbane and shows how far people are willing to travel on average in their daily commute.

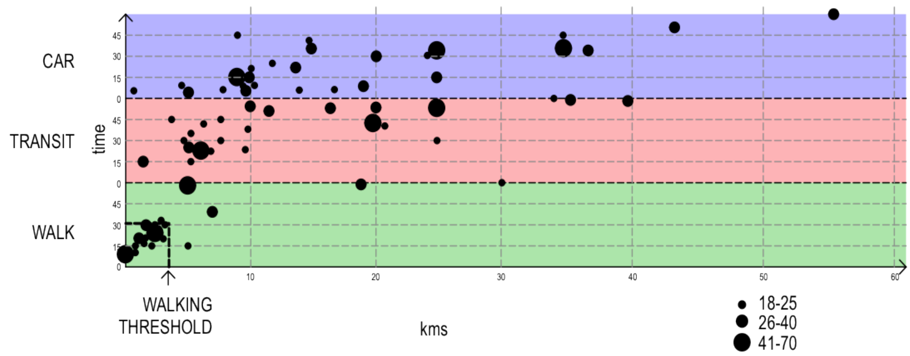

Figure 1. Journey to work speed in relation to types of transport

As discussed in the literature review, distances between work and home affect the feasibility of walkability. As expected, people who work near the city are more likely to walk to work than people who work away from the city; this information is displayed in table form. Each participant in the survey was also asked which walkability factors mean the most to them; if they do not use walking already as a mode of transport, how can their environment be improved to make walking a feasible travel option?

5. RESULT AND DISCUSSION

5.1 Stage 1: Threshold analysis

This primary field survey included 48 online participants. The preliminary results of this pilot are summarized in 2 sections. The first section is the general statistical analysis of the data collection, presented in *Table 2*.

Table 2. Descriptive statistical analysis of data

Age	Time (minute)		Distance (km)		No. of Participants	(%)
18-25	Average	17	Average	2.70	26	54.16
26-40	Average	27	Average	4.13	15	31.25
41-70	Average	35	Average	4.06	7	14.58
Total	Min	5	Min	1		
	Max	60	Max	8		
	Average	28	Average	3.8		
			Total Participants		48	100.00

Table 2 shows an explicit maximum time and distance threshold that people walk on their day-to-day activities; the recurrent duration is generally 30 minutes, and the recurrent distance is 3 – 4 kilometers. These data record how Brisbane pedestrians walk on average 28 minutes a day between public transports and their final destinations. The information also reveals that demographics did not affect the choice of transport mode; all age groups are evenly distributed throughout the graph, implying that older people are just as eager to walk as young university students.

Another observation that can be made based on this table is that there is a high consistency of walking speed across the 3 different modes. Walkers, in general, have a consistent walk speed of 5 km/hr. However, transit and car drivers experience similar travel speeds due to location, congestion, and transit facilities. These findings suggest that consistency and time predictability are a significant benefit for walkers over the other modes of transport.

5.2 Stage 2: Location analysis

The survey phase was conducted with 100 participants of different ages, occupations, and incomes. *Table 4* shows that driving is by far the most popular mode of transport, with almost half of all the participants using automotive travel as their primary mode. Compared to *Table 1*, it is evident that the average travel time is again similar across all modes of transport. The mean travel time is 27 minutes overall and 23 minutes for walkers. When asked, 'what is the longest time you would walk to work/study?' the most common response was 20-30 minutes. It also indicates that the average distance is 16 km, which is much further than the 3 km walking threshold highlighted in Stage 1. This result indicates that walking is not an option for most Brisbane workers in their current living environment, highlighting the importance of integrated transport systems to make walking a feasible mode of transport.

The graph also confirms that people's choice of transport is determined by distance. Many people choose to walk if the distance is less than 4 – 5 km, trains and buses are used most for distances 4 km – 12 km, and driving is used for wide variety of distances. This fact is due to the flexible nature of driving as opposed to transit and walking.

Table 3. Statistical analysis of Stage 2 data

Data	Age	Distance (km)	Time (minutes)
Average	25	16	27
Min	15	0	1
Max	49	80	100

Table 3 only shows the primary descriptive statistic of the participants. The proportion of male and female participants is 55 % and 45 %, respectively. However, *Table 4* compares the primary mode of transport if the participants could only choose one mode with possible modes of transport if the participants could include more than one. This result implies that workers and students may walk halfway and travel by train for the rest.

Table 4. Comparison between Primary and secondary modes of transport

Travel modes	The primary mode of transport in a participant's journey (%)	All modes of transport in participant's journey (%)
Car	40.0	27.0
Walk	6.0	22.0
Train	17.0	14.0
Bus	23.0	23.0
Cycle	1.0	6.0
Other	3.0	5.0

This comparison shows that although only 6 % of Brisbane participants stated walking as their primary mode of transport, 22 % noted that they walk at some point in their journey. Out of all the participants that walked, 78 % of them also stated they used mass transit, which can be interpreted favorably in terms of the TOD model of urban design, which is currently implemented in several Brisbane areas (Burke & Brown, 2007; Curtis, Renne, & Bertolini, 2009; Golotta & Hensher, 2008; Stewart, 2002).

According to these data, the most walker-friendly areas are South Brisbane, Fortitude Valley/Bowen Hills, Coorparoo, and Kelvin Grove/New Market. The neighborhoods in the broader Brisbane metropolitan area perceived as the most automotive dependent are Logan, Carindale, Gold Coast, and Jindalee.

The first observation that can be made about this finding is that it confirms that proximity to the CBD, proximity to bus and rail systems, and overall density of the area are central factors in determining walkability, as already recorded by previous studies (Kamruzzaman et al., 2016). Some interesting reflections can be made by reading these findings in parallel with this and prior studies. First, all the places with a high amount of pedestrian activity were also mixed-use areas with an even distribution of home and work functions. For example, Kelvin Grove, Bowen Hills, Fortitude Valley, Indooroopilly, St Lucia, and South Brisbane are all areas with mixed-use zoning.

According to the results, Brisbane CBD is deemed walkable for most people, although the journey to work in CBD still must be done by other forms of travel. The average travel distance for people who work/study in the city is 16 km; this makes walking alone not feasible for city workers.

5.3 Other determinants of travel behavior

Hensher (1998) already discussed how the transportation system in Brisbane is very efficient in taking people to the CBD and highly inefficient to interconnect neighborhoods not aligned on the same transit line. *Table 5* shows a significant difference between the behaviors of people travelling to the inner-city and the behaviors of those travelling to the outer city suburbs. Inner-city suburbs include Fortitude Valley, South Brisbane, Milton, and Kelvin Grove.

Table 5. Travel Behavior of people who work inner city/outer suburbs

Travel modes	The primary mode of transport people who work/study *inner*-city suburbs (%)	The primary mode of transport people who work/study *outer* city suburbs (%)
Car	38.5	69.0
Transit	44.2	24.0
Walk	13.5	7.0
Others	3.8	0.0
Total	100.0	100.0

To address this case of auto-dependency, a transit system bypassing the city center might be required to support Brisbane's further growth. To further analyze the travel behavior of Brisbane workers and students, a comparison was made between high-income earners and low-income earners. Part 1 of the data collection revealed that age did not affect walkability; however, *Table 6* indicates that only 10 % of high-income earners travel by public transport; however, more than half of low-income earners favor this mode of transport. Walkability for both demographics is similar.

Table 6. Travel Behavior of high-income earners verse low-income earners

Travel modes	The primary mode of transport for *high-income* earners ($66,000 or higher) (%)	The primary mode of transport for *low-income earners* ($32,000 or less) (%)
Car	75.0	35.3
Transit	10.0	53.0
Walk	15.0	12.7
Total	100.0	100.0

5.4 Relevance to the walk threshold

Figure 2 shows the ratio of travel modes concerning the distance travelled. As the figure shows, for the first 2 km, walking is the primary mode of transport, and as the individual travels further from home , other modes of transport become more common.

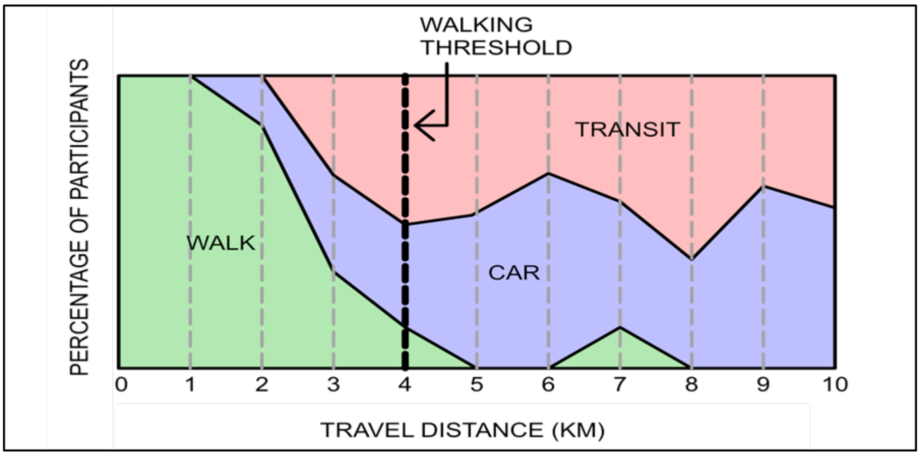

Figure 2. Travel patterns in short-distance workers

According to the data collected, 15/100 participants lived within Brisbane's walking threshold (4 km), and a further 12 participants lived 5 km from their work. Out of all the participants who live within the walking threshold, only 40 % chose to walk. This result means that there is an opportunity to double our walking community and decrease traffic on our already congested road networks.

5.5 Walkability indicators

The survey asked some questions regarding participants' own opinions of the walking quality in Brisbane and what would improve walkability. The responses to these questions strengthened literature findings that distance and time were fundamental factors (Braben & Guaralda, 2013; Burke & Brown, 2007; Southworth, 2005). *Table 7* summarizes the findings for this survey question.

Table 7. Walkability Indicators from the survey

Reason for no walk	Proportion (%)
Distance	59
Hot climate	19
Time (too slow to walk)	14
Hilly terrain	4
Lack of footpaths	3
No parks/recreation	1
Total	100

The major factors that affect walking in Brisbane, other than proximity, are the hot climate and the hilly terrain. Secondary factors identified were the lack of footpaths and the lack of greenery. None of the participants considered personal safety as an issue in the streets of Brisbane. These data provide an interesting perspective on participants' attitudes towards walking in Brisbane because 81% of participants did not consider the hot climate an issue, and only 4% felt the hilly terrain to be an issue; both indicators have been mentioned in previous studies to be major negative factors (Braben & Guaralda, 2012; Southworth, 2005).

All the data in this research suggests that the secondary walkability factors in Brisbane are in good condition. Streets in Brisbane are safe, there is a good aesthetic with the street front, and there are many projects in Brisbane designed to improve the walking facilities (Stewart, 2002). Out of all the participants, 59 of them said that they do not walk in their journey to work because of the distance factor. When discussing the ways walkability could be improved, 23 applicants suggested better integration with public transport.

6. CONCLUSION

The purpose of this research was to understand attitudes towards walkability in Brisbane. Literature has outlined a need for research in this area and a need to understand if paradigms developed in the northern hemisphere would also apply to the southern hemisphere.

Findings confirm previous research; average travel time in Brisbane is 29 minutes, and walkers have an average speed of 5 km/hr. This is in line with the literature (Duncan et al., 2011; Purciel et al., 2009). People in Brisbane will only walk about a maximum of 10 – 20 minutes and about 3.5 km; most residents in Brisbane live about 17 km from work, which is too far to walk.

Moreover, this paper suggests that in the case of people living within walking distance from work/study, only 40 % choose to walk, which is primarily due to the convenience of cars and because of certain factors like terrain, hot climate, and the lack of footpaths. However, data suggest that apart from the distance factor, Brisbane is a safe, public-friendly place that has excellent facilities for walkability.

The key to improve walkability is integration with public transport systems, a strategy that Brisbane is trying to implement with the construction of new transit networks. Walking distances between stops, stations, and nodes have to be carefully considered (Bajracharya & Khan, 2006; Burke & Brown, 2007; Spearritt, 2009). Data also highlight the need for considering interconnectivity between neighborhoods and not just with the city center.

The data collected in this pilot confirmed Marchetti's constant and the idea that a mixed-use neighborhood is perceived as more walkable. Findings are in line with the post-modern model of urban design, which advocates for a compact city form and focuses on a network of activity nodes, more than just emphasizing the central business district. Decentralization has been a successful strategy in many cities in the USA and Europe. Houston, Texas, has undergone significant steps to distribute nodes away from the city center (Mieszkowski & Smith, 1991). Similarly, Tokyo has instilled sub-centers around the main CBD and connected them with a system of railway lines to relieve traffic congestion (Curtis, Renne, & Bertolini, 2009).

In Brisbane, it is evident that sub-nodes that are purely residential or purely commercial are the most auto-dependent; with the projections of Brisbane growing to 4 million people in the next 50 years, action must be taken now to plan for walking communities. Further research is needed to evaluate in greater detail Brisbanites' attitude towards walking and, in general, towards density and transit in the broader metropolitan area.

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