



Article

Influences of Perceived Built Environments and Personal Attitudes Toward Walking to the Grocery Store

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Abstract: Encouraging walking to grocery stores can enhance environmental sustainability by reducing vehicle emissions and easing traffic congestion. While research has largely focused on measurable factors like distance and physical accessibility, less attention has been paid to how perceived built environments and personal attitudes affect walking behavior. This study delves into how socio-demographic traits, social influences, and perceived built environments influence walking decisions. The key findings reveal that factors such as ethnicity and income significantly impact decisions to walk, with well-maintained sidewalks enhancing appeal and obstacles like construction serving as deterrents. Positive attitudes towards walking further encourage this behavior, underscoring the need for targeted public health interventions. These insights are crucial for designing communities that support walking, ultimately improving community health and environmental sustainability.

Keywords: walking; built environment; grocery shopping; attitude



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1. Introduction

Improving sustainable mobility has become a top priority for cities worldwide as they seek to address environmental and urban challenges. Enhancing public transportation is seen as a critical strategy to encourage private vehicle users to opt for more sustainable modes of commuting, particularly for long journeys. In this context, promoting walking for short urban trips presents the most environmentally friendly solution while also delivering substantial health benefits. Walking, in particular, offers significant advantages for human well-being. Transitioning to walking is essential for achieving long-term sustainability goals. Encouraging walking to grocery stores can contribute to environmental sustainability by reducing vehicle emissions and traffic congestion [1]. Therefore, understanding how various built environments, socio-economic characteristics, and social aspects influence the decision to walk to grocery stores is vital for designing interventions that encourage walking, as these will reap health and community benefits [2].

Research on walking to the grocery store has predominantly focused on quantifiable aspects such as distance and physical accessibility [3,4], with less emphasis on how perceived built environments and attitudes towards walking influence this specific behavior [5]. There is a notable gap in understanding the psychological and perceptual factors that might encourage or deter individuals from walking to grocery stores. Addressing these gaps could provide deeper insights into creating targeted urban planning and public health policies that effectively encourage walking as a transportation mode to grocery stores, fostering healthier and more sustainable communities.

This study aims to delve into the complex interplay of factors that influence an individual's decision to walk to the grocery store, a routine, yet understudied, aspect of urban mobility. Specifically, it seeks to address significant research gaps by examining how socio-demographic characteristics, social influences, perceptions of the built environment, and personal attitudes toward walking shape this decision. Through this exploration, this study aims to answer the following research questions: How do socio-demographic traits influence an individual's decision to walk to the grocery store? To what extent do social

influences shape walking behavior for grocery shopping? How do perceptions of the built environment affect the likelihood of choosing walking to grocery stores? And what role do personal attitudes toward walking play in the decision-making process? By exploring these dimensions, this study provides a comprehensive understanding of the factors that promote or hinder walking to grocery stores, offering valuable insights for urban planners and public health officials to design more walkable communities that cater to the needs and preferences of their residents.

2. Literature Review

Socio-demographic characteristics play a significant role in influencing an individual's decision to walk to the grocery store. Younger individuals are generally more likely to engage in walking due to better physical conditions and reduced mobility limitations. Research indicates that younger people show a higher propensity to walk to amenities, including grocery stores, as part of their daily physical activity [6]. On the other hand, older adults might be deterred from walking due to decreased mobility, safety concerns, and the physical demands of carrying groceries.

Men and women engage with and experience their walking environments differently. Safety concerns appear to impact women more significantly, affecting their likelihood of walking, especially during off-peak hours or in less-populated areas [7]. Women frequently show a stronger preference for well-lit, populated routes and are more likely to avoid areas where they feel vulnerable to crime [8].

Race and ethnicity significantly influence walking behaviors, with differences rooted in varying socio-economic conditions and cultural norms. Research has shown that minority and ethnic communities may face unique barriers to walking, such as reduced access to safe, well-maintained pedestrian infrastructure or increased traffic volume. For example, African American populations often reside in areas where pedestrian environments are less conducive to walking, characterized by inadequate sidewalk conditions and higher pedestrian–vehicle collision rates [9].

Employment status significantly influences an individual's decision to walk, primarily through the impact on available time and travel patterns. Individuals who are employed are more likely to face time constraints [10]. Furthermore, employed individuals might prioritize efficiency and reliability in their commuting choices, opting for faster transportation modes like driving or public transit to accommodate strict work schedules [11].

Education level is a key factor influencing the decision to walk, with higher educational attainment often associated with more frequent walking. Individuals with higher education levels may have a better understanding of the lifestyle choices that contribute to overall well-being [12].

Lower-income households may have limited access to vehicles and may reside in urban areas with closer proximity to amenities [13]. Conversely, higher-income individuals might prioritize convenience and time savings afforded by driving, even over short distances. Education also correlates with higher income, which complicates direct correlations, as higher income often leads to greater vehicle access and less need to walk.

Car ownership significantly impacts walking behaviors, often reducing the probability that individuals will choose walking as the primary travel mode. Owning a car provides convenience, speed, and flexibility in travel that walking generally cannot match, particularly for longer distances or in less pedestrian-friendly environments. This accessibility tends to shift travel behavior towards driving, even for short distances that could otherwise be walked [14]. Additionally, the presence of a car increases the radius within which individuals consider destinations accessible, thereby diminishing the inclination to walk [15].

Having a valid driver's license can influence an individual's decision to walk by providing an alternative and often more convenient mode of transportation. The possession of a driver's license generally increases personal mobility options, allowing individuals greater freedom to choose driving over walking. This flexibility often leads to a preference

for driving, especially in areas where public transportation options are limited or where destinations are spread out, making car travel seem more practical [16]. The availability of a driver's license can also reduce the likelihood of walking among populations that might otherwise rely on active transportation or public transit, particularly in suburban or rural areas where walking infrastructure is less developed [17].

Household size affects walking behaviors in various ways, often impacting the decision to walk based on the logistics and dynamics within the family unit [18]. Larger households might provide more opportunities for walking, as activities like taking children to school or visiting community parks can increase walking frequency among adults [19].

Individuals who visit grocery stores regularly may find it practical to walk, especially if the store is within a manageable distance. This frequent, routine activity can help integrate walking into one's daily lifestyle, promoting physical activity and reducing reliance on vehicular transport [20]. Additionally, regular visits can strengthen familiarity with the walking route, increasing the individual's comfort and preference for walking as these routines become part of their regular activity pattern. Research suggests that the cumulative effect of such short, non-discretionary walks can significantly contribute to overall physical activity levels, thus supporting healthier lifestyle choices [21].

Residential self-selection refers to the phenomenon where individuals choose their housing based on their preferences for certain lifestyles. This choice significantly impacts walking behaviors, as people who prefer walking may deliberately choose to live in areas that are walkable [22]. Consequently, these individuals exhibit higher rates of walking, not just out of necessity, but as part of a preferred lifestyle.

Social influence plays a critical role in shaping walking behaviors. The presence of social networks can significantly motivate individuals to adopt similar behaviors, largely due to social conformity and the desire to fit in or gain approval [23]. Peer influence is particularly potent when individuals observe their friends and family members regularly choosing walking, which can normalize the activity and embed it as a daily routine [24]. This social reinforcement is vital in sustaining walking habits, especially in environments that might not be highly conducive to walking.

Resident proximity to key destinations significantly influences walking behaviors. Living closer to these destinations makes walking a feasible option [25]. The convenience of having amenities within walking distance can also foster a pedestrian-friendly culture, where walking becomes a social and health-promoting norm rather than just a mode of transportation [26].

The perception of safety is a critical determinant in the decision to walk. A sense of security, whether related to traffic safety or personal security from crime, can significantly encourage or deter pedestrian activities. Conversely, the fear of crime or heavy traffic can drastically reduce the propensity to walk, particularly among vulnerable populations.

Road conditions significantly impact walking behavior. Research has shown that smooth pavement, clear signage, and pedestrian crossings contribute to a favorable walking environment, which in turn increases pedestrian traffic [26]. Poor road conditions, on the other hand, such as potholes, uneven surfaces, and lack of clear markings, can deter walking by increasing the risk of accidents and making walking less comfortable and more challenging [27].

Traffic-calming measures are crucial urban planning tools that significantly influence the decision to walk by enhancing pedestrian safety and reducing the speed of vehicular traffic. These measures include speed bumps, road narrowings, raised pedestrian crossings, and curb extensions, which are designed to slow down vehicles, thereby reducing the likelihood of accidents and making the streets safer for pedestrians [28]. The presence of such measures can increase pedestrian confidence, encouraging more people to walk. Additionally, studies have shown that traffic calming can enhance the overall street environment, making walking a more enjoyable and stress-free experience [29]. This is particularly important in urban areas, where traffic congestion can otherwise deter people from walking.

The presence of tree shading significantly influences the decision to walk. Tree shading not only provides relief from the sun but also enhances the scenic quality of the environment, which can be a strong motivator for choosing to walk [30]. Trees also contribute to improved air quality and reduced exposure to harmful UV rays, factors important to public health that encourage outdoor activities, including walking. Furthermore, the psychological benefits of greener, more natural environments, such as reduced stress and enhanced mood, can motivate individuals to walk more frequently, contributing to overall well-being and community health [31].

Attitudes toward walking is critical in determining whether individuals choose to engage in this activity. Positive attitudes towards walking significantly impact the possibility of individuals opting to walk [32]. Conversely, negative attitudes, including the perceptions of walking as time-consuming, inconvenient, or unsafe, can deter people from walking. The psychological component of transport choice, where individuals weigh the perceived benefits against the drawbacks, is crucial in the decision-making process. Additionally, enhancing the actual conditions of walking environments to align with these positive perceptions can reinforce and sustain walking behaviors [33].

While the literature recognizes the role of attitudes in shaping walking behaviors, there remains a limited understanding of how specific attitudes toward walking influence routine walking activities, such as trips to the grocery store. This gap highlights a need for a more detailed exploration that could provide actionable insights for urban planning and public health interventions. This study meticulously examines how various attitudes toward walking impact the probability of walking to the grocery store. By mapping out the relationships between specific attitudes and walking behaviors, this research could uncover key psychological drivers and barriers affecting pedestrian choices [34]. Such insights are essential for developing effective strategies to encourage walking for daily errands [35].

Although there is growing interest in promoting walking as a sustainable transportation mode, the research on specific factors influencing pedestrian trips to grocery stores—a fundamental daily task—remains underexplored [3,4]. This research could guide policy development to enhance pedestrian-oriented infrastructure near grocery stores. Furthermore, such studies can reveal socio-demographic and economic influences on walking behaviors related to shopping, thereby deepening our understanding of pedestrian preferences and requirements in urban environments [36].

3. Methods

3.1. Study Area

This research focuses on Orlando, Florida. Orlando's urban structure is characterized by densely populated areas, a suburban sprawl, and varied neighborhood designs. This variety in urban planning allows for a comprehensive analysis of how different settings influence pedestrian activity.

3.2. Data Sources, Variables and Measurements

This study employed a cross-sectional survey design. This study targeted adults aged 18 and above residing within various neighborhoods of Orlando. Prominently placed flyers with a QR code linked to the online survey were displayed in Publix, a leading grocery store chain in Orlando, to directly reach and engage shoppers. All 35 Publix stores in Orlando, Florida, were included in this study. The Publix stores included are located across various neighborhoods in Orlando, Florida, each with varying levels of accessibility and proximity to public transport. Many of the stores are situated near major roads and are easily accessible by car, while others are located within walking distance of residential areas. Public transport stops, including Lynx bus routes, are available near several stores, offering alternative transportation options for customers without personal vehicles. The diversity in location and transport options ensures that the stores serve a wide range of communities, from urban to suburban settings. Within a one-mile walking distance of the 35 Publix stores in Orlando, Florida, there are 4538 residents, a violent crime rate of

810.1 per 100,000 people in 2022, and a sidewalk completeness rate of 0.23. Additional recruitment was conducted through social media advertisements, local community boards, and emails distributed via local community organizations. The survey was administered online from early April to the end of May 2024. A total of 975 valid surveys were returned. The response rate was 45%. This study adhered to ethical guidelines and received approval from the Institutional Review Board (IRB) at the University of Central Florida.

Table 1 shows the list of variables, measurements, and their descriptive statistics. The dependent variable is a binary measure indicating whether respondents walked to the grocery store. The socio-demographic characteristics collected include gender, age, race, ethnicity, income level, educational level, employment status, household size, and car ownership.

Table 1. Variable list and descriptive statistics.

Domain	Variable	Mean (SD ^a) or % of “1” for Binary Variables
	Using walking as the primary mode of travel to the grocery store (binary; 1 = walk)	25.00%
Socio-demographic characteristics	Age of respondents (continuous)	45.21 (12.52)
	Gender of respondent (binary; 1 = male)	35.00%
	Race of respondent (binary; 1 = white)	45.00%
	Ethnicity of respondent (binary; 1 = Hispanic or Latino)	21.00%
	Employment status (binary; 1 = employed)	67.00%
	Education level (continuous; 1–5 [1 = no formal education; 2 = some high school; 3 = high school graduate; 4 = some college or technical school; 5 = college graduate or higher])	4.31 (1.15)
	Income level (continuous; 1–5 [1 = less than USD 20,000; 2 = USD 20,000–USD 40,000; 3 = USD 40,000–USD 60,000; 4 = USD 60,000–USD 80,000; 5 = more than USD 80,000])	4.15 (1.27)
	Car ownership (continuous)	2.02 (0.94)
	Valid driver license (binary; 1 = yes)	83.00%
	Household size (continuous)	3.02 (1.28)
	Frequency of visiting grocery stores (continuous; 1–4 [1 = less than once a week; 2 = once a week; 3 = 2–3 times a week; 4 = 4 to 6 times a week; 5 = daily])	2.85 (0.94)
Residential self-selection	Whether walking to the grocery store is important in choosing residential location (continuous; 1–5 [1 = not at all; 2 = slightly; 3 = moderately; 4 = significantly; 5 = decisively])	2.57 (1.38)
Social influence	Latent factor ^b : positive peer influence	
	“I frequently observe my friends, family, or neighbors walking to the grocery store”.	2.10 (1.58)
	“There is a social expectation in my community to choose eco-friendly transportation modes for grocery shopping”.	1.78 (0.85)
	“My friends or family members have encouraged me to walk to the grocery store”.	1.55 (0.96)
Perceived built environments	Distance to the nearest grocery store from home (continuous; 1–5 [1 = more than 3 miles; 2 = 2 to 3 miles; 3 = 1 to 2 miles; 4 = 0.5 to 1 mile; 5 = less than 0.5 miles])	3.51 (1.28)
	Safety perception when walking to the grocery store (continuous; 1–5 [1 = very unsafe; 2 = somewhat unsafe; 3 = neutral; 4 = somewhat safe; 5 = very safe])	3.73 (1.59)
	Overall condition of the roads on the route to the grocery store (continuous; 1–5 [1 = very poor; 2 = poor; 3 = fair; 4 = good; 5 = excellent])	3.31 (1.87)

Table 1. Cont.

Domain	Variable	Mean (SD ^a) or % of “1” for Binary Variables
Perceived built environments	Availability and condition of sidewalks leading to the grocery store (continuous; 1–5 [1 = non-existent; 2 = sporadically available; 3 = present but in poor condition; 4 = generally well-maintained but with some issues; 5 = well-maintained and fully accessible])	3.82 (1.17)
	Obstacles (i.e., construction, debris, or parked vehicles) on the walking path to the grocery store (continuous; 1–5 [1 = very frequently; 2 = frequently; 3 = occasionally; 4 = rarely; 5 = never])	3.29 (2.01)
	Traffic-calming measures (i.e., speed bumps, pedestrian islands) on the walking path to the grocery store (continuous; 1–5 [1 = very inadequate; 2 = somewhat inadequate; 3 = neither adequate nor inadequate; 4 = somewhat adequate; 5 = very adequate])	3.08 (0.99)
	Signage and road markings for pedestrian crossing on the route to the grocery store (continuous; 1–5 [1 = very unclear and unhelpful; 2 = somewhat unclear; 3 = neutral; 4 = somewhat clear; 5 = very clear and helpful])	2.84 (1.53)
	Presence of tree shading along the route to the grocery store (continuous; 1–5 [1 = no shading; 2 = minimal shading; 3 = moderate shading; 4 = substantial shading; 5 = complete shading])	3.05 (0.86)
Attitude toward walking to the grocery store	Latent factor ^b : positive attitude and experience	
	“Walking to the grocery store is a convenient option for me”.	2.85 (2.01)
	“I enjoy the experience of walking to the grocery store”.	2.22 (1.32)
	“I prefer walking to the grocery store because it helps me stay physically active”.	2.18 (1.74)
	“I feel safe walking to the grocery store in the neighborhood”.	3.88 (0.65)
	“I am likely to choose walking over other modes of transportation for my next grocery store trip”.	1.98 (1.08)
	Latent factor ^b : barriers and concerns	
	“Walking to the grocery store is too hot and sweaty”.	3.57 (1.33)
	“Carrying groceries is a major deterrent for me when considering walking or biking to the store”.	3.93 (1.07)
	“I find walking to the grocery store too time-consuming”.	3.85 (1.31)
	“I am worried about the traffic along the route when I consider walking to the grocery store”.	3.04 (1.02)
	“I feel that the sidewalks to the grocery store are poorly maintained”.	2.85 (1.68)

^a SD: standard deviation; ^b All latent factors were captured by a series of questions using the Likert scale from 1 (“strongly disagree”) to 5 (“strongly agree”), unless otherwise noted.

This study further delves into perceived built environments factors affecting walking, such as the distance to the nearest grocery store, perceived safety, and the availability of pedestrian-friendly signage and tree shading. They were measured using a 5-point scale. Attitudes towards walking were analyzed through statements regarding convenience, enjoyment, and concerns like carrying groceries and time constraints.

3.3. Statistical Analyzes

This research utilized Structural Equation Modeling (SEM) to examine the factors related to walking to the grocery store. Specifically, this study adopted the Weighted Least Square Mean and Variance Adjusted (WLSMV) estimation approach. This technique is better suited for dealing with categorical outcomes, ensuring more accurate standard error calculations [37]. Using maximum likelihood estimation could lead to decreased accuracy when dealing with binary variables [38]. WLSMV estimation, therefore, offers a more fitting

alternative for analyzing categorical data, especially when dealing with a limited range of response options on scales like the Likert scale and data distributions that are not normal. The analysis was performed using the M-Plus 8.5 statistical software.

4. Results

Figure 1 displays the SEM results, illustrating the associations between grocery store walking behavior and a range of factors. An SEM model is generally considered to have a good fit when the root mean square error of approximation (RMSEA) is 0.08 or below, and the comparative fit index (CFI) is 0.9 or higher. This model demonstrates a strong fit, with an RMSEA of 0.041 and a CFI of 0.92.

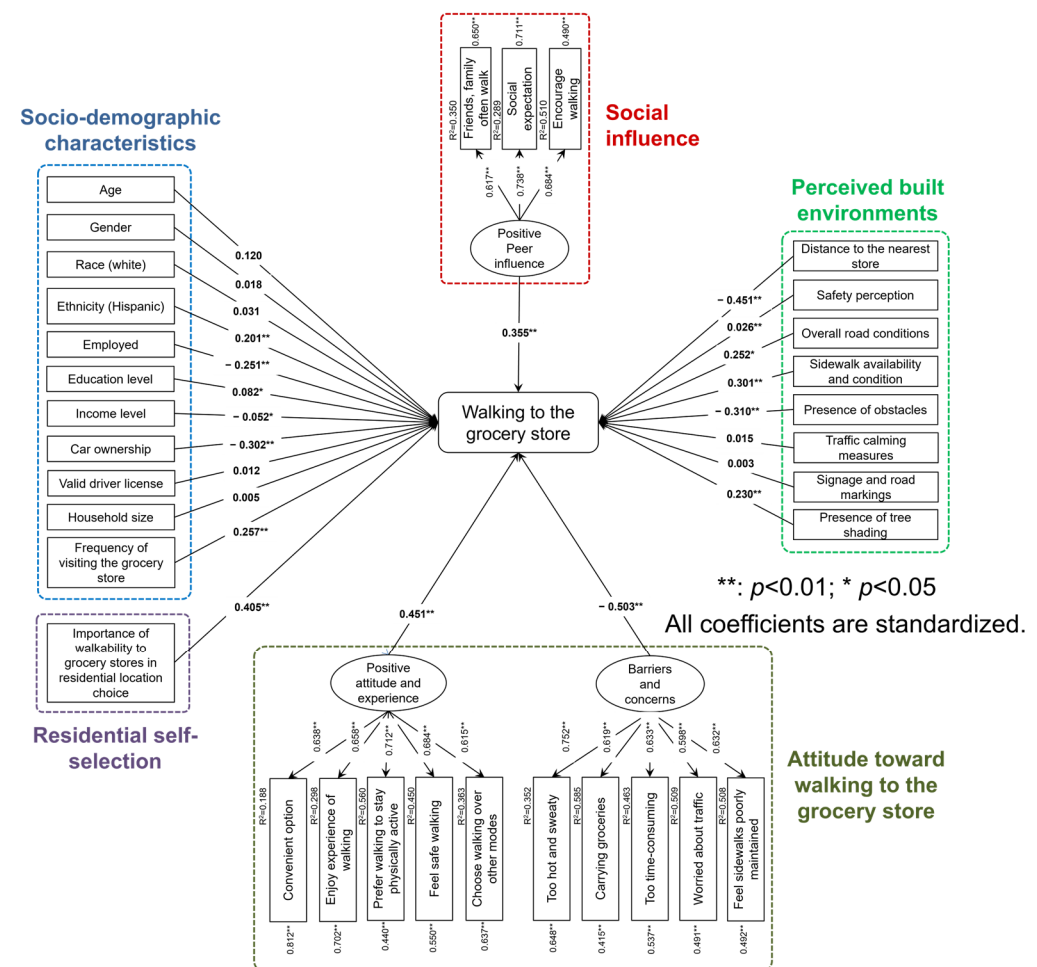


Figure 1. Results from the structural equation model.

Age and gender are not significantly associated with the probability of walking to the grocery store. Hispanic individuals (coefficient = 0.201, $p = 0.005$) have a higher likelihood of walking to the grocery store compared to non-Hispanic individuals. By contrast, the probability of walking to the grocery store does not differ significantly between white and non-white populations ($p = 0.08$). Employment (coefficient = -0.251 , $p = 0.002$) is associated with a reduced probability of walking to the grocery store. This suggests that employment may lead to less walking, possibly due to time constraints or alternative transportation options.

Higher educational attainment is positively correlated with an increased likelihood of walking to the grocery store. Individuals with higher income levels (coefficient = -0.052 , $p = 0.02$) are slightly less likely to walk to the grocery store. This could reflect greater access to alternative forms of transportation among higher income earners. Owning a car (coeffi-

cient = -0.302 , $p = 0.001$) significantly decreases the likelihood of walking to the grocery store. This finding underscores the impact of vehicle availability on transportation choices.

Having a valid driver's license is not statistically significant. The size of the household does not significantly affect walking to the grocery store. People who visit the grocery store more frequently are considerably more likely to walk. Prioritizing proximity to a grocery store when choosing a residence (coefficient = 0.405 , $p < 0.001$) substantially increases the probability of walking. For social influence, an increase in positive peer influence significantly increases the likelihood that an individual will opt to walk to the grocery store.

In terms of perceived built environments, the probability of opting to walk to the grocery store decreases significantly as the distance from home increases (coefficient = -0.451 , $p = 0.008$). This study also found that higher perceived safety (coefficient = 0.026 , $p = 0.002$) significantly increases the likelihood of walking to the grocery store. Better road conditions positively influence the decision to walk to the grocery store. The presence of well-maintained sidewalks is highly influential. Obstacles negatively impact the decision to walk. Traffic-calming measures, along with pedestrian signage and road markings, have no significant influence on the likelihood of walking.

The result indicates that a positive attitude towards walking and positive past experiences significantly boost the likelihood of walking. Perceived barriers and concerns, such as poor infrastructure, safety concerns, general inconvenience, fears of traffic, personal security, or bad weather, significantly deter individuals from walking to the grocery store.

5. Discussion

5.1. Limitations of the Study

This study provides valuable insights into the factors influencing walking to grocery stores but also presents several limitations that warrant consideration. First, the reliance on survey responses introduces potential biases, such as self-reporting bias, where respondents might provide answers they perceive as expected rather than those reflecting their actual behaviors or thoughts. Memory recall issues may also compromise the accuracy of reported data, particularly in relation to distances walked or the frequency of grocery store visits. Second, focusing solely on perceived built environments rather than objective measures may not accurately reflect the true characteristics of these environments. This approach relies heavily on subjective data, which can lead to discrepancies between reported experiences and actual conditions, potentially affecting the study's generalizability. Third, due to its cross-sectional nature, this study collected data at a single point in time, limiting the ability to establish causality between the factors studied and walking behaviors. Longitudinal studies are needed to observe changes over time and assess causative relationships more definitively.

5.2. Socio-Demographic Characteristics

The analysis of socio-demographic characteristics sheds light on various influences affecting the likelihood of walking to the grocery store. Hispanic individuals show a significantly higher propensity to walk to the grocery store compared to non-Hispanics. This could reflect cultural preferences, community dynamics, or possibly economic factors that encourage walking as a more viable or necessary mode of transportation within Hispanic communities. By contrast, the analysis reveals no significant differences in walking to the grocery store between white and non-white populations, suggesting that racial factors do not significantly influence walking habits. This lack of significant racial disparity could indicate a uniform urban structure or similar access to infrastructure across different racial groups. The negative association between employment and walking to the grocery store is also notable. This suggests that being employed reduces the likelihood of walking, likely due to time constraints, fatigue from work, or the convenience of faster transportation methods to manage work and personal life efficiently.

Educational attainment appears to play a positive role in promoting walking behaviors. This suggests that individuals with higher educational levels are more likely to walk to

the grocery store. This relationship could be attributed to a greater awareness of health and environmental benefits associated with walking, which are often emphasized through higher education. Alternatively, this could reflect lifestyle choices or residential patterns, where more educated individuals may choose to live in walkable neighborhoods that facilitate such activities. Since higher education correlates with more walking, educational campaigns that highlight the benefits of walking could be extended into communities with lower educational attainment. Public health messaging can be integrated into community programs, schools, and local media to reach a broader audience.

Conversely, higher income levels are associated with a decreased likelihood of walking. This suggests that individuals with higher incomes might have better access to alternative and perhaps more convenient forms of transportation, such as private cars, reducing their need or inclination to walk. This is supported by the finding that owning a car significantly decreases the likelihood of walking to the grocery store. Car ownership provides convenience and flexibility that walking cannot offer, particularly for carrying groceries or managing time efficiently, which strongly sways transportation choices away from walking.

The strong correlation between the frequency of visits to the grocery store and walking underscores routine behavior's role in forming sustainable habits. Similarly, placing high importance on proximity to grocery stores when choosing where to live significantly increases walking likelihood, suggesting that residential location decisions are crucial for promoting walkable lifestyles. The positive effect of peer influence on walking indicates that social norms and community practices play a critical role in encouraging walking behaviors. This suggests that walking can be promoted through community-based initiatives that foster a culture of walking.

5.3. Perceived Built Environments

The findings confirm the pivotal role of perceived built environments in encouraging walking. The negative impact of increased distance underscores the importance of urban planning in maintaining compact neighborhoods. Well-maintained sidewalks, safe road conditions, and the presence of tree shading significantly enhance walkability by creating an inviting and safe environment for pedestrians. These elements are crucial for encouraging people to choose walking as a primary mode of transportation. Smooth and unobstructed sidewalks free from uneven surfaces and obstacles ensure safety, reducing the risk of trips, and make walking a more pleasant experience. Regular maintenance ensures that sidewalks are accessible to everyone, including individuals with disabilities, parents with strollers, and the elderly, promoting inclusivity in urban mobility. Trees provide shade, which is particularly beneficial in warmer climates, reducing heat exposure for pedestrians. This natural canopy also improves air quality and reduces pollution levels, contributing to a healthier walking environment.

Obstacles such as construction, debris, or parked vehicles significantly deter individuals from choosing to walk due to several factors. These obstructions can pose safety concerns. Inadequate barriers around construction sites or debris along walkways increase the risk of accidents, creating unsafe conditions for pedestrians. Furthermore, parked vehicles that block sidewalks force pedestrians to step onto the street, heightening their risk of encountering vehicular traffic. Additionally, the presence of such barriers detracts from the overall enjoyment and ease of walking, making the activity less attractive and more cumbersome compared to other transportation modes. Policies should focus on improving sidewalk conditions, reducing obstacles, and ensuring that roads are well-maintained. Urban planning should prioritize tree-lined streets and compact city designs to decrease distances between essential services like grocery stores and residential areas.

5.4. Attitude Towards Walking

The strong positive influence of favorable attitudes towards walking and past positive experiences underscores the critical role of psychological factors in promoting walking

behaviors. When individuals have a positive mindset about walking, perhaps viewing it as beneficial for health or as a pleasant way to explore their environment, they are more likely to choose walking over other modes of transportation. Positive past experiences, such as enjoyable and convenient walks, reinforce these attitudes by providing tangible proof of the benefits of walking. Conversely, perceived barriers such as poor infrastructure, safety concerns, and general inconveniences serve as significant deterrents. Poorly maintained sidewalks, perceived danger from traffic, or the inconvenience of navigating obstructed pathways can all contribute to negative walking experiences, which in turn discourage people from walking. Community programs that encourage walking groups or competitions could harness positive peer influence to boost walking rates. Public campaigns could also highlight the health and environmental benefits of walking to shift social norms and attitudes favorably. Education and outreach programs tailored to address specific fears and misconceptions about walking can play a vital role in transforming community attitudes and behaviors towards this healthy, sustainable mode of transportation.

6. Conclusions

This study elucidates the multifaceted influences on the decision to walk to the grocery store, underscoring the interplay between socio-demographic traits, social influences, perceptions of the built environment, and personal attitudes. These findings are critical for urban planners and public health officials aiming to enhance community health and urban livability through better pedestrian infrastructure and more walkable community designs.

This study reveals that socio-demographic factors such as ethnicity and income level significantly impact walking behavior, with Hispanic individuals showing a higher propensity to walk to the grocery store. This highlights potential cultural or socioeconomic influences that might encourage walking in these communities. Conversely, higher income levels and car ownership correlate with reduced walking, suggesting that more affluent individuals may have access to more transportation options, thereby reducing their need to walk.

The role of perceived built environments is notably significant. Elements such as well-maintained sidewalks, safe road conditions, and tree shading not only enhance the physical appeal of walking but also promote safety and comfort, making walking a more attractive choice. Conversely, obstacles like construction and poorly maintained pathways deter walking by making it unsafe and unpleasant. This emphasizes the need for meticulous urban planning that prioritizes pedestrian-friendly amenities to encourage walking.

Furthermore, attitudes toward walking have a profound influence. Positive attitudes and favorable previous experiences with walking increase the likelihood of choosing to walk, while negative perceptions and experiences deter it. This points to the importance of public health interventions that aim to shift perceptions and educate the community on the benefits of walking.

This research provides a foundational basis for further exploration. It opens avenues for urban planners and public health officials to develop targeted strategies that encourage walking, which is vital for promoting healthier lifestyles and more sustainable urban environments. The findings from this study serve as a crucial step in identifying the key factors that encourage or deter walking to grocery stores, offering a starting point for interventions that could transform urban living. As such, this study significantly contributes to the literature by bridging gaps in knowledge and suggesting practical applications for enhancing walkability in urban settings, thereby supporting broader health and environmental objectives.

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