Creating Walkable Communities: Understanding Trade-Offs

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Abstract

Implementing community design strategies can offer benefits related to walkability; however, they may also come with trade-offs to other community needs and desires. We examined public sentiment for 2 trade-offs among 2014 SummerStyles survey respondents (n = 3,995). About 33% of adults reported strongly favoring safer street design even if driving is slower; only 19% reported strongly favoring community design with walkable destinations even if homes are closer together. Walking frequency was positively associated with strongly favoring trade-offs, while differences by other demographic characteristics depended on the trade-off. Addressing public sentiment for potential trade-offs may be important when promoting walkable design strategies.

Objective

Walking is an easy way for Americans to start and maintain a physically active lifestyle to achieve health benefits (1,2). Walking, along with other physical activities, can be promoted through community design strategies (2–4). For example, policies and practices can encourage mixed land use to improve the diversity and proximity of community destinations, and street design can be enhanced to include features, such as sidewalks and crosswalks, to improve safety (3,4).

Methods

Survey

The 2014 Porter Novelli ConsumerStyles database is built from a series of web-based surveys via the GfK KnowledgePanel that gather insights about US consumers, including information about health attitudes and behaviors. The panel has about 55,000 panelists randomly recruited through probability-based sampling. The initial SpringStyles survey was sent to a random sample of adult panelists (aged ≥18 years) and a supplemental sample of panelists with children.

We used data from the 2014 SummerStyles survey that was sent during June and July to 6,159 adults who had previously completed the SpringStyles survey. The survey took approximately 36 minutes to complete and 4,269 surveys were returned (response rate, 69%). Respondents were not required to answer any of the questions and could exit the survey at any time. Those who completed the survey received reward points worth approximately $10 and were eligible to win in-kind prizes through monthly sweepstakes.
Measures

To assess sentiment related to trade-offs, respondents were asked if they favor or oppose (strongly oppose, oppose, favor, strongly favor, and don’t know)

1. Designing streets with sidewalks, crosswalks, stop signs, and other features to make it safer to walk, even if it means driving slower.
2. Designing communities so that more stores and other places are within walking distance of homes, even if this means building homes closer together.

Respondents were asked how often they usually walk for at least 10 minutes at a time. Adults who indicated that they were physically able to walk were categorized into 1 of 3 walking frequency categories: frequently (every day or most days), sometimes (some days), and rarely (hardly ever or never). Demographic characteristics were sex, age group, education, race/ethnicity, census region (6), metropolitan statistical area (MSA) status (7), and home ownership.

Statistical analysis

We examined public sentiment for each trade-off overall. Adjusted logistic regression analyses were used to examine the association between walking frequency and demographic characteristics with reporting strongly favoring each trade-off. Analyses were conducted by using SUDAAN, Release 11 (Research Triangle Institute) to account for survey weights.

Results

About 82.2% of adults reported favoring (48.9%) or strongly favoring (33.3%) safer street design even if driving is slower (Figure). About 55.7% of adults reported favoring (36.3%) or strongly favoring (19.4%) community design with stores and other destinations within walking distance even if homes are closer together.

Prevalence of strongly favoring each trade-off was significantly higher for adults who reported frequent walking compared with walking sometimes or rarely (Table). In addition, significant differences in prevalence of strongly favoring safer street design even if driving is slower were found by race/ethnicity and census region, while significant differences in the prevalence of strongly favoring community design with walkable destinations even if homes are built closer together were found by age, education, race/ethnicity, and MSA status. In adjusted models, findings were similar.

Discussion

One in 3 adults strongly favored the trade-off of safer street design even if driving is slower, while only 1 in 5 adults strongly favored community design with walkable destinations even if homes are built closer together. Walking frequency was positively associated with strongly favoring both trade-offs, while differences by demographic characteristics generally depended on the trade-off. To garner public support for creating walkable communities, it may be important to address public sentiment for trade-offs and how this may vary in communities.
We found differences by demographic characteristics in public sentiment for trade-offs consistent with studies examining similar concepts. For example, we found that younger adults (aged 18–49) were more likely than older adults to strongly favor community design with walkable destinations even if homes are built closer together. Similarly, another study found that millennials (aged 18–34) were more interested in being within easy walking distance of destinations than other generations (8). We also found that nonwhites were generally more likely to support trade-offs than whites, although where differences were significant differed some based on the trade-off. Another study similarly found that nonwhites were more supportive of “activity-friendly communities” (9). Obtaining information about public sentiment related to a wider breadth of trade-offs may help identify which are most favored by different populations.

This study has strengths and limitations. One limitation was sample selection bias that may be associated with data from a panel survey of volunteers. However, previous research comparing random-digit–dialed and panel approaches has found a general equivalence between results, suggesting that findings from panel studies are as acceptable as those using respondents selected randomly for telephone surveys (10). A strength was that the sample was drawn from a large nationwide sample, allowing us to look at differences by many demographic characteristics.

Addressing public sentiment for trade-offs may be important when promoting walkable community design strategies, and this may vary by community. Findings from this study can help local practitioners better understand public sentiment for trade-offs when implementing strategies to create more walkable communities.

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### Table

Table. Prevalence and Adjusted Odds Ratio of Strongly Favoring Trade-offs to Create Walkable Communities, by Select Characteristics Among Adults, Summer-Styles 2014

| Characteristic | n  | Strongly Favored | Designing Streets With Sidewalks, Crosswalks, Stop Signs, and Other Features to Make It Safer to Walk, Even if It Means Driving Slower | Designing Communities so That More Stores and Other Places Are Within Walking Distance of Homes, Even if This Means Building Homes Closer Together |
|----------------|----|------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|                |    | %b (95% CI)      | AORc (95% CI)                                                                                                                  | %b (95% CI)                                                                                                                      | AORc (95% CI)                                                                                                                                   |
| Total          | 3,995 | 33.3 (31.5–35.1) | NA                                                                                                                          | 19.4 (17.9–20.9)                                                                                                                    | NA                                                                                                                                             |
| Walking frequency |     |                  |                                                                                                                               |                                                                                                                                  |                                                                                                                                                |
| Frequently     | 1,383 | 40.5 (37.5–43.6)x | 1.66 (1.34–2.05)                                                                                                               | 24.0 (21.3–26.8)x                                                                                                                  | 1.68 (1.29–2.18)                                                                                                                               |
| Sometimes      | 1,629 | 29.9 (27.3–32.7)y | 1.02 (0.82–1.26)                                                                                                               | 18.3 (16.1–20.7)y                                                                                                                  | 1.18 (0.91–1.54)                                                                                                                               |
| Rarely         | 983   | 29.2 (25.9–32.8)y | 1 [Reference]                                                                                                                  | 15.1 (12.6–18.0)y                                                                                                                  | 1 [Reference]                                                                                                                                     |
| Sex            |       |                  |                                                                                                                               |                                                                                                                                  |                                                                                                                                                |
| Male           | 1,959 | 31.9 (29.5–34.5) | 0.88 (0.75–1.04)                                                                                                               | 19.9 (17.9–22.2)                                                                                                                  | 1.06 (0.87–1.29)                                                                                                                               |
| Female         | 2,036 | 34.6 (32.1–37.1) | 1 [Reference]                                                                                                                  | 18.9 (16.9–21.0)                                                                                                                  | 1 [Reference]                                                                                                                                     |
| Age, y         |       |                  |                                                                                                                               |                                                                                                                                  |                                                                                                                                                |
| 18–34          | 689   | 32.3 (28.5–36.3) | 0.80 (0.63–1.03)                                                                                                               | 22.2 (19.0–25.8)x                                                                                                                  | 1.40 (1.03–1.89)                                                                                                                               |
| 35–49          | 1,118 | 33.0 (29.7–36.4) | 0.85 (0.67–1.06)                                                                                                               | 21.2 (18.4–24.3)                                                                                                                  | 1.23 (0.93–1.63)                                                                                                                               |
| 50–64          | 1,355 | 33.6 (30.8–36.6) | 0.89 (0.72–1.10)                                                                                                               | 16.5 (14.3–18.8)y                                                                                                                  | 0.96 (0.73–1.25)                                                                                                                               |
| ≥65            | 833   | 35.0 (31.4–38.7) | 1 [Reference]                                                                                                                  | 16.5 (13.8–19.6)                                                                                                                  | 1 [Reference]                                                                                                                                     |
| Education      |       |                  |                                                                                                                               |                                                                                                                                  |                                                                                                                                                |
| High school graduate or less | 1,400 | 30.6 (27.7–33.6) | 0.82 (0.67–1.00)                                                                                                               | 15.0 (12.9–17.5)x                                                                                                                  | 0.56 (0.44–0.71)                                                                                                                               |
| Some college   | 1,253 | 34.7 (31.6–38.0) | 0.97 (0.80–1.18)                                                                                                               | 19.1 (16.5–21.9)x                                                                                                                  | 0.69 (0.55–0.87)                                                                                                                               |
| College graduate | 1,342 | 35.6 (32.6–38.7) | 1 [Reference]                                                                                                                  | 25.7 (23.0–28.6)                                                                                                                  | 1 [Reference]                                                                                                                                     |
| Race/ethnicity |       |                  |                                                                                                                               |                                                                                                                                  |                                                                                                                                                |
| White, non-Hispanic | 3,008 | 30.9 (29.0–32.9)x | 1 [Reference]                                                                                                                  | 17.7 (16.2–19.4)x                                                                                                                  | 1 [Reference]                                                                                                                                     |
| Black, non-Hispanic | 378 | 39.0 (33.5–44.7)y | 1.35 (1.04–1.76)                                                                                                               | 19.6 (15.6–24.5)                                                                                                                  | 1.16 (0.84–1.60)                                                                                                                               |
| Other          | 609   | 37.4 (32.9–42.1)y | 1.37 (1.09–1.72)                                                                                                               | 24.2 (20.3–28.6)y                                                                                                                  | 1.38 (1.06–1.80)                                                                                                                               |
| MSA statusd    |       |                  |                                                                                                                               |                                                                                                                                  |                                                                                                                                                |
| Nonmetro       | 622   | 29.7 (25.5–34.2) | 0.91 (0.72–1.14)                                                                                                               | 12.7 (9.8–16.3)x                                                                                                                  | 0.66 (0.48–0.90)                                                                                                                               |
| Metro          | 3,373 | 33.9 (32.0–35.9) | 1 [Reference]                                                                                                                  | 20.6 (19.0–22.3)                                                                                                                  | 1 [Reference]                                                                                                                                     |
| Census region  |       |                  |                                                                                                                               |                                                                                                                                  |                                                                                                                                                |
| Northeast      | 712   | 34.6 (30.5–38.9)x | 1.38 (1.07–1.77)                                                                                                               | 18.8 (15.6–22.4)                                                                                                                  | 1.06 (0.78–1.43)                                                                                                                               |

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; MSA, metropolitan statistical area status; NA, not applicable.

a Of 4,269 respondents, 274 were excluded for missing data (n = 78) or because they indicated they were unable to walk when asked about how often they usually walk for at least 10 min at a time (n = 196). Estimates were weighted using survey weights provided as part of the data set. Weights were created to match US Current Population Survey proportions for sex, age, household income, race/ethnicity, household size, education, region, MSA status, and internet access before joining the panel.

b Superscript x and y indicate significant differences: within subgroups, values that have a different letter are significantly different (Bonferroni corrected P < .05).

c Models adjusted for walking frequency, sex, age group, education, race/ethnicity, census region, MSA status, and home ownership.

d An MSA was categorized as metro if it was associated with at least 1 urbanized area that has a population of at least 50,000.

(continued on next page)
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|-------------------|------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|                   |      |                  | %\(^b\) (95% CI)                                                                                                                                 | AOR\(^c\) (95% CI)                                                                                                                                 |
| Midwest           | 1,013| 26.6 (23.5–30.0) | 1 [Reference]                                                                                                                                 | 16.3 (13.8–19.1)                                                                                                                                 |
| South             | 1,410| 37.3 (34.3–40.4) | 1.56 (1.26–1.94)                                                                                                                                 | 20.4 (18.0–23.1)                                                                                                                                 |
| West              | 860  | 32.2 (28.4–36.1) | 1.16 (0.90–1.49)                                                                                                                                 | 21.1 (17.9–24.7)                                                                                                                                 |

| Home ownership    |      |                  | %\(^b\) (95% CI)                                                                                                                                 | AOR\(^c\) (95% CI)                                                                                                                                 |
|-------------------|------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Homeowner         | 3,049| 32.6 (30.6–34.6) | 0.90 (0.74–1.09)                                                                                                                                 | 19.6 (17.9–21.3)                                                                                                                                 |
| Nonhomeowner      | 946  | 35.3 (31.7–39.0) | 1 [Reference]                                                                                                                                 | 18.9 (16.1–22.0)                                                                                                                                 |

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; MSA, metropolitan statistical area status; NA, not applicable.

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