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Understanding municipal officials' involvement in transportation policies supportive of walking and bicycling

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Abstract

Context—Local transportation policies can impact the built environment and physical activity. Municipal officials play a critical role in transportation policy and planning decisions, yet little is known about what influences their involvement.

Objective—To describe municipal officials' involvement in transportation policies that were supportive of walking and bicycling and to examine individual- and job-related predictors of involvement in transportation policies among municipal officials.

Design—A cross-sectional survey was administered online from June-July 2012 to municipal officials in 83 urban areas with a population of 50,000 or more residents across 8 states.

Participants—A total of 461 municipal officials from public health, planning, transportation, public works, community and economic development, parks and recreation, city management, and municipal legislatures responded to the survey.

Main Outcome Measure—Participation in the development, adoption, or implementation of a municipal transportation policy supportive of walking or bicycling.

Results—Multivariate logistic regression analyses, conducted in September 2013, revealed that perceived importance of economic development and traffic congestion were positively associated with involvement in a municipal transportation policy (OR=1.32, 95% CI=1.02–1.70; OR=1.59, 95% CI=1.26–2.01, respectively). Higher perceived resident support of local government to address economic development was associated with an increased likelihood of participation in a

transportation policy (OR=1.70, 95% CI=1.24–2.32). Respondents who perceived lack of collaboration as a barrier were less likely to be involved in a transportation policy (OR=.78, 95% CI=.63–.97). Municipal officials that lived in the city or town in which they worked were significantly more likely to be involved in a transportation policy (OR=1.83, 95% CI=1.05–3.17).

Conclusions—Involvement in a local transportation policy by a municipal official was associated with greater perceived importance of economic development and traffic congestion in job responsibilities; greater perceived resident support of local government to address economic development; and residence of the municipal official. Lack of collaboration represented a barrier to local transportation policy participation.

Keywords

Transportation policy; physical activity; built environment; walking; bicycling; health in all policies

INTRODUCTION

Despite the well-established health benefits of regular physical activity, only one in five adults in the United States meet the 2008 Physical Activity Guidelines for Americans.^{1–2} In response to these low levels, physical activity promotion efforts have expanded from individual-based approaches to promoting policies and environments that support active living. Federal, state, and local level policies can be effective mechanisms for changing and supporting environments that promote physical activity, particularly policies from sectors outside the traditional realm of public health.^{3–4} Public health professionals are increasingly taking a “Health in All Policies” approach to addressing physical inactivity, which incorporates health considerations into policy decisions across sectors and policy areas.⁵ Despite this growing trend, limited research exists on effective policy processes and outcomes to increase physical activity.^{6–8}

Policy and planning decisions within the sector of transportation can impact the built environment and physical activity.⁹ According to Lyn and colleagues, a wide range of transportation policies can shape physical activity environments, including policies related to public transportation infrastructure, parking requirements, and traffic management.¹⁰ Recent research has demonstrated that different policy processes exist at the municipal or local level compared to policy processes at the state and national levels.¹¹ Thus, as recognition of the association between transportation policies, the built environment, and opportunities for physical activity increases, more evidence is needed to understand the factors influencing the development, adoption, and implementation of transportation policies at the local level.¹²

Municipal officials, which includes elected and appointed local officials, play a critical role in transportation policy and planning decisions. Understanding the knowledge, attitudes, and opinions of local officials responsible for transportation activities can inform the development and promotion of transportation policies supportive of physical activity.¹³ Few studies have explored local policymakers’ perceptions of built environment and physical activity issues.^{12–16} One investigation conducted by Dill and colleagues (2011) explored the role physical activity played in adopting land use policies among local planning officials.

Their findings suggested that physical activity was not an influential motivator for adopting local land use policies.¹⁴ Similarly, Maddock and colleagues (2009) assessed how elected and appointed officials at both the local- and state-level prioritized policies supportive of active-friendly communities in Hawaii. Results demonstrated that although traffic was considered an important priority, most decision makers did not consider other issues that affect physical activity, such as poorly planned development and sprawl, pedestrian safety, and lack of walkways and sidewalks, as critical.¹⁶ While these studies have provided important information on the low prioritization of built environment and physical activity issues among municipal officials, there is much to be learned on how this prioritization impacts actual involvement in related policies, particularly transportation policies.

Past studies have also examined the challenges local decision makers perceive when addressing built environment and physical activity issues. Common barriers municipal officials have experienced include limited resources and staff, lack of political will or support, and lack of collaboration.^{12,17-18} Although these studies have helped illustrate the barriers municipal officials face when developing, adopting, or implementing built environment and physical activity policies, they did not examine barriers specific to local transportation policies. Nor did they assess how these perceived barriers may influence actual participation in these related policies.

Building on the work of Lemon and colleagues¹⁹, the aims of this study were (1) to describe municipal officials' involvement in transportation policies that are supportive of walking and bicycling; and (2) to examine individual- and job-related predictors of involvement in transportation policies among municipal officials. The findings from this study could be used to identify specific leverage points for transportation policy advocacy at the municipal level and to inform opportunities for increasing involvement in transportation policy and planning decisions among municipal officials.

METHODS

Survey Design

The overall study was designed to investigate municipal officials' attitudes, beliefs, and behaviors with respect to public policies related to the built environment and physical activity. This study was a collaboration among eight universities affiliated with the Physical Activity Policy Research Network (PAPRN) which is funded by the Centers for Disease Control and Prevention.²⁰ A cross-sectional survey was administered online from June to July 2012 and was approved by the Institutional Review Boards at the eight participating institutions.

Participants and Recruitment

Eligibility criteria included elected and appointed officials in urban areas with a population of 50,000 or more residents. Elected officials represented mayors and municipal legislators, such as city council members, aldermen, commissioners, selectmen, and policy staff. Appointed officials represented city or town managers and heads of departments of planning, community development, economic development, public works, transportation,

engineering, parks and recreation, neighborhood services, and public health. Recruitment targeted 94 communities in states with PAPRN representation Colorado, Georgia, Hawaii, Kansas, Massachusetts, Missouri, North Carolina, and West Virginia. The recruitment strategy involved identifying municipal officials who met the eligibility criteria using the Municipal Yellow Book (www.leadershipdirectories.com) followed by manual searches for officials in communities not covered by the Yellow Book, and contacting the officials directly with an email invitation. Each invited individual received up to three telephone reminders. Among the 1,773 municipal officials who were contacted to participate in the study who were deemed eligible, a total of 461 individuals completed the online survey (overall response rate of 26.0%), representing 83 municipalities.

Measures—Goins and colleagues previously discussed the development of the 43-item survey used for this study.¹⁸ In brief, survey development was guided by the Diffusion of Innovation theory and the PAPRN research team engaged in an extensive process of facilitating key informant interviews, reviewing the literature for existing measures, modifying and creating new items using investigator consensus, conducting cognitive interviews of draft surveys, and utilizing usability testing to reach a final version of the survey.

Outcome Variable

Transportation policy involvement—The outcome of interest for this study was participation in a municipal transportation policy supportive of walking or bicycling. Participants were asked to report whether they had ever participated in the development, adoption, or implementation of municipal transportation or public works policy to increase pedestrian or bicycle safety or accommodation (yes/no).

Independent Variables

Individual factors—The following demographic characteristics were assessed: gender, race/ethnicity (collapsed into White, Black/African-American, Mixed or Other race, and prefer not to answer), and education level (collapsed into less than a college degree and a college degree or higher). One item was created from two variables that measured department and job function; this summary measure had seven mutually exclusive categories to determine position including public health, transportation or public works, planning, community or economic development, parks and recreation, mayor or city manager, and other municipal legislator. Two items were used to measure political affiliation on social and fiscal issues using a 7-point scale, ranging from extremely liberal to extremely conservative. Responses were recoded into three categories including liberal, moderate, or conservative. Participants also indicated whether they lived in the city or town in which they worked (yes/no) and if they walked or bicycled for transportation in the past week (yes/no).

Perceived job-related factors—Perceived job-related variables were derived from analyzing past research and included additional variables hypothesized to influence local transportation policies.^{13–14, 21–22} Participants were asked to rate how important specific built environment issues were in their day-to-day job responsibilities using a 5-point Likert scale, ranging from not at all to extremely important. Participants also indicated how

supportive residents in their community were of local government action to address specific built environment issues using a 5-point Likert scale, ranging from not at all supportive to extremely supportive. For both sets of questions, the built environment issues assessed included economic development and revitalization; energy conservation and climate change; needs of vulnerable populations; traffic congestion; traffic safety; livability and smart growth; public health; physical activity; and air quality. Lastly, participants reported the extent to which five barriers prevented physical activity from being considered in decision making about community design and layout using a 5-point Likert scale, ranging from not at all to extremely. Perceived barriers assessed included limited staff, opposition from the business community, opposition from residents, lack of collaboration among departments, and lack of political will.¹⁸

Statistical Analysis

Descriptive statistics and frequencies were used to describe the sample and participants' perceptions of job-related factors. Initially, bivariate associations between each individual- and job-related characteristic and participation in a municipal transportation policy were evaluated by using logistic regression to estimate the odds ratios (ORs) and 95% confidence intervals (CIs). Only individual- and job-related characteristics with a p-value $\leq .20$ were included for further evaluation in multivariate analyses.

Individual- and job-related factors significantly associated with transportation policy participation in the bivariate tests were examined in three multivariate logistic regression models: Model 1 assessed the association between the individual variables and transportation policy participation; Model 2 assessed the association between the job variables and transportation policy participation; and Model 3 assessed the association between individual and job variables and transportation policy participation. Position was not included in the multivariate models because small cell sizes produced unstable estimates. All analyses were performed in September 2013 using SPSS 20.0 (Chicago, IL) and significance levels were set at a p-value $\leq .05$.

RESULTS

Individual characteristics of the sample are displayed in Table 1. Participants were mostly male (70.5%), White (78.6%), and had a college degree or higher (91.3%). Municipal legislator was the position with the greatest representation in the sample (29.6%), followed by transportation or public works professionals (14.3%). The highest percentage of participants identified as socially liberal (41.0%) and fiscally conservative (53.6%). The majority of municipal officials lived in the city or town in which they worked (78.3%), and did not walk or bike for transportation in the previous week (63.8%). Table 2 describes each of the perceived job-related characteristics under investigation.

Table 3 includes results from the multivariate logistic regression models for municipal transportation policy involvement. Among the individual-level factors examined in the full model (Model 3), transportation policy participation differed significantly by gender and residence of the municipal official. Male municipal officials were more likely than females to ever be engaged in a transportation policy (OR=1.74, 95% CI=1.04–2.92). Municipal

officials that lived in the city or town in which they worked were significantly more likely to ever be involved in a transportation policy than those participants that did not live in the city or town in which they worked (OR=1.83, 95% CI=1.05–3.17).

Of the job-related factors evaluated in the final model, perceived importance of economic development (OR=1.32, 95% CI=1.02–1.70) and traffic congestion (OR=1.59, 95% CI=1.26–2.01) in day-to-day job responsibilities were positively associated with involvement in a municipal transportation policy. Higher perceived resident support of local government action to address economic development was associated with an increased likelihood of transportation policy participation (OR=1.70, 95% CI=1.24–2.32). Participants that perceived lack of collaboration as a barrier to addressing built environment issues were less likely to ever be involved in transportation policy supportive of walking or bicycling (OR=.78, 95% CI=.63–.97).

DISCUSSION

To our knowledge, this study was among the first to examine individual and job characteristics associated with participation in transportation policies supportive of walking and bicycling among municipal officials. Our findings show that municipal officials' perceived importance of economic development in their day-to-day job responsibilities and perceived support from residents to address economic development were strong predictors of participation in municipal transportation policies. Over the past several years, a number of studies have demonstrated a positive association between increased investment in transportation infrastructure and economic development.^{23–26} Thus, individuals and organizations working towards implementing municipal transportation policies that encourage walking and bicycling may need to reframe messages on how these policies can impact communities from a transportation or health lens to an economic one.

Perceived importance of traffic congestion in their day-to-day job responsibilities was also a strong predictor of involvement in a municipal transportation policy. Perceived importance of health topics, such as public health and physical activity, were not influential in municipal officials' transportation policy participation. Our findings are consistent with previous research that has examined the prioritization of traffic issues among local policy decision makers.^{14–15} For example, Dill and colleagues found that traffic congestion was an important motivation for adopting land use policies among local planning officials.¹⁴ Furthermore, state and local policymakers assessed in Hawaii considered increased traffic an extremely important policy priority.¹⁶ Local policy strategies supportive of active transportation infrastructure improvements, public transportation improvements, transportation pricing reforms, and transportation demand management can help reduce traffic congestion, as well as impact health outcomes.^{9,27} Therefore, more appropriate leverage point for advocacy and collaboration at the local level may be addressing traffic congestion.

Although transportation policies and projects can contribute to many policy goals from reducing air pollution to increasing active transportation, economic development and reduced traffic congestion were identified as two key levers of influence among municipal

officials. Both public health and transportation professionals should explore ways to translate evidence that demonstrates a positive relationship between transportation improvements and economic development and reduced traffic into effective and persuasive messages for these audiences. Public health professionals, especially, play a critical role in communicating transportation policies that support physical activity, and the impacts of these policies, to local policymakers. This includes developing and implementing strategies to expand the knowledge of local decision makers and advocates about transportation policies that encourage physical activity; establishing and maintaining relationships with local policymakers, the media, and other stakeholder groups that are engaged in related policies; and training stakeholder groups to educate policymakers about transportation policies.²⁸

Our findings also reinforced those of previous investigations that found that collaborations and partnerships are an important aspect of participation in a transportation policy by municipal officials. In the current study, individuals that perceived a lack of collaboration among departments as a challenge were significantly less likely to be involved in the development, adoption, or implementation of a transportation policy. Salvesen and colleagues underscore the importance of coordination among government agencies to support the successful implementation of local policies promoting physical activity, suggesting it can save funds and create more opportunities for physical activity.¹² Moreover, a recent assessment of state obesity and physical activity-related plans by Eyer et al. revealed that transportation professionals are infrequently involved with state plan development in comparison to public health representatives.²⁶ As such, there has been growing recognition of the importance of collaboration across public health and transportation sectors²⁹, including by the National Physical Activity Plan that identified a specific strategy to encourage cross-sector approaches: “Integrate land use, transportation, community design, and economic development planning with public health planning to increase active transportation and other physical activity”.³⁰ One opportunity for public health professionals to explore further is developing cross-sector partnerships with metropolitan planning organizations (MPOs), or agencies that provide local input on urban transportation planning and allocate federal transportation funds in cities with a population greater than 50,000 residents. Although two studies have demonstrated considerable variation in how MPOs have prioritized active transportation into their transportation, planning, and land use decisions^{31–32}, examples of MPOs that have integrated public health with its transportation planning efforts are growing.³³ Additional research is needed on the extent to which transportation organizations, such as MPOs, are prioritizing transportation policies that support physical activity, and the facilitators and barriers to these types of organizations collaborating with public health professionals.

Among the individual factors examined, the residence of municipal officials emerged as significant. Individuals that lived in the city or town in which they worked were more likely to be involved in a municipal transportation policy. This suggests that these municipal officials may be more familiar with the transportation needs of their communities or more committed to policy issues that could impact them personally and as a result, may be more engaged in transportation policies. Furthermore, political affiliation was not predictive of local transportation policy participation. These data are encouraging in that municipal

officials with opposing political views could potentially collaborate to advance local transportation policies.

Limitations

Although the current study contributes to growing literature on local decision makers' perspectives on transportation, built environment, and physical activity policies, there are some limitations. The study response rate was low, thus limiting the generalizability of the findings. The low response rate may have been a result of busy schedules, inconvenient survey timing at the end of the fiscal year, Internet restrictions or spam filters at municipal worksites, or inaccurate email addresses. These issues were addressed with follow-up personal phone calls, but this only yielded a small increase in participation. Findings were based on cross-sectional data and no causal relationships can be established. For a more comprehensive understanding of why policymakers engage in policies supportive of physical activity, additional methods, such as longitudinal research and mixed methods approaches, are needed, as well as more robust statistical analyses of policymakers' motivations for physical activity policy involvement. In addition, data were self-reported and thus potentially influenced by inaccuracies and social desirability bias. Similarly, measurement of local policy involvement relied on respondents' retrospective perceptions of participation and the number of times they were engaged in a local transportation policy were not assessed. Lastly, our study only sampled municipal officials from urban areas with a population of 50,000 or more residents. Varying environments, from urban, suburban, to rural, necessitate different transportation policies to support active transportation. As a result, our findings may not be relevant to suburban or rural communities and future research should explore predictors of involvement in transportation policies among municipal officials representing these geographic areas. Despite these limitations, this is among the first studies to examine factors associated with local transportation policy involvement of municipal officials across disciplines.

Conclusions

Findings from the current study can inform policymakers, advocates, researchers, and practitioners seeking to advance local transportation policies supportive of walking and bicycling. Leverage points for local transportation advocacy may be economic development and reducing congestion. It may be more beneficial for individuals and organizations focused on transportation and health to reframe policy issues towards economic development and traffic congestion when promoting local transportation policies. In addition, municipal leaders seeking to improve the walking and bicycling environment through local transportation policy should encourage collaboration across agencies and sectors to increase opportunities for municipal officials to participate in transportation policies. Future research that identifies specific transportation policies that can support health objectives and explores how to build political and popular support for these policies could further the understanding of transportation policy development, adoption, and implementation.

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Table 1

Participant characteristics, (N=461).

Variable	n (%)
Gender	
Female	136 (29.5)
Male	325 (70.5)
Race/ethnicity	
White	361 (78.6)
African American/Black	46 (10.0)
Mixed race or Other race	25 (5.4)
Prefer not to answer	27 (5.9)
Education	
Less than college degree	40 (8.7)
College degree or higher	420 (91.3)
Position	
Public health	38 (8.4)
Transportation or public works	65 (14.3)
Planning	45 (9.9)
Economic or community development	62 (13.7)
Parks and recreation	61 (13.5)
Mayor or city manager	48 (10.6)
Municipal legislator	134 (29.6)
Political affiliation (social)	
Liberal	176 (41.0)
Moderate	114 (26.6)
Conservative	139 (32.4)
Political affiliation (fiscal)	
Liberal	78 (18.0)
Moderate	123 (28.4)
Conservative	232 (53.6)
Live in the city or town in which you work	
Yes	361 (78.3)
No	100 (21.7)
Walked or biked for transportation in the past week	
Yes	167 (36.2)
No	294 (63.8)

Table 2

Municipal officials' perceived importance of day-to-day job responsibilities, resident support, and barriers, (N=461)

Variable	Mean (SD)
Perceived importance[*]	
Economic development/revitalization	3.03 (1.02)
Energy conservation/climate change	2.22 (1.07)
Needs of vulnerable populations	2.81 (1.02)
Traffic congestion	2.30 (1.20)
Traffic safety	2.51 (1.23)
Livability/smart growth	2.81 (0.97)
Public health	2.61 (1.10)
Physical activity	2.38 (1.20)
Air quality	2.37 (1.40)
Perceived resident support[†]	
Economic development/revitalization	2.94 (0.78)
Energy conservation/climate change	2.14 (0.91)
Needs of vulnerable populations	2.53 (0.79)
Traffic congestion	2.81 (0.94)
Traffic safety	2.88 (0.86)
Livability/smart growth	2.26 (0.94)
Public health	2.40 (0.85)
Physical activity	2.18 (0.86)
Air quality	2.20 (0.90)
Perceived barriers[‡]	
Limited staff	1.54 (1.12)
Opposition from the business community	1.31 (1.08)
Opposition from residents	1.26 (0.97)
Lack of collaboration among departments	1.32 (1.13)
Lack of political will	1.77 (1.21)

* Participants were asked to rate how important specific built environment issues were in their day-to-day job responsibilities, scores range from 0–4 where 0 is not at all important and 4 is extremely important.

† Participants were asked to rate how supportive residents in their community were of local government action to address specific built environment issues, scores range from 0–4 where 0 is not at all supportive and 4 is extremely supportive.

‡ Participants were asked to report the extent to which these barriers prevented physical activity from being considered in decision making about community design and layout, scores range from 0–4 where 0 is not at all and 4 is extremely.

Table 3
 Characteristics associated with involvement in municipal transportation policies in multivariate analysis (N=461).

Variable	Transportation policy involvement					
	Model 1*		Model 2†		Model 3‡	
	OR (95% CI)	p value	OR (95% CI)	p value	OR (95% CI)	p value
<i>Individual-related factors</i>						
Gender						
Female	Ref.	Ref.	-	-	Ref.	Ref.
Male	1.94 (1.21–3.11)	.006[§]	-	-	1.74 (1.04–2.92)	.035
Political affiliation (fiscal)						
Liberal	0.73 (0.41–1.32)	.296	-	-	-	-
Moderate	1.07 (0.63–1.82)	.801	-	-	-	-
Conservative	Ref.	Ref.	-	-	-	-
Live in the city or town in which you work						
Yes	1.78 (1.07–2.96)	.027	-	-	1.83 (1.05–3.17)	.032
No	Ref.	Ref.	-	-	Ref.	Ref.
<i>Perceived job-related factors</i>						
Perceived importance						
Economic development/ revitalization	-	-	1.43 (1.09–1.87)	.010	1.32 (1.02–1.70)	.033
Energy conservation/climate change	-	-	1.05 (0.77–1.40)	.746	-	-
Needs of vulnerable populations	-	-	0.72 (0.55–0.95)	.018	0.77 (0.60–1.00)	.053
Traffic congestion	-	-	1.53 (1.05–2.23)	.026	1.59 (1.26–2.01)	<.001
Traffic safety	-	-	1.06 (0.74–1.51)	.756	-	-
Livability/smart growth	-	-	1.24 (0.90–1.71)	.195	1.34 (0.99–1.81)	.059
Air quality	-	-	0.84 (0.64–1.10)	.199	0.82 (0.63–1.05)	.115
Perceived resident support						
Economic development/ revitalization	-	-	1.57 (1.13–2.19)	.007	1.70 (1.24–2.32)	.001
Traffic congestion	-	-	0.93 (0.61–1.40)	.713	-	-
Traffic safety	-	-	1.05 (0.66–1.65)	.842	-	-

Variable	Transportation policy involvement								
	Model 1*			Model 2 [†]			Model 3 [‡]		
	OR (95% CI)	p value		OR (95% CI)	p value		OR (95% CI)	p value	
Livability/smart growth	-	-	1.12 (0.80-1.57)	.523	-	-	-	-	-
Physical activity	-	-	1.26 (0.87-1.82)	.217	-	-	-	-	-
Air quality	-	-	0.92 (0.64-1.32)	.643	-	-	-	-	-
Perceived barriers									
Limited staff	-	-	0.90 (0.72-1.12)	.346	-	-	-	-	-
Lack of collaboration among departments	-	-	0.81 (0.63-1.03)	.089	0.78 (0.63-0.97)		.023		
Lack of political will	-	-	1.05 (0.84-1.32)	.661	-	-	-	-	-

* Association between perceived job-related factors and involvement in a municipal transportation policy.

[†] Association between individual factors and involvement in a municipal transportation policy.

[‡] Association between perceived job-related and individual factors and involvement in a municipal transportation policy.

[§] Items in bold are statistically significant.

Abbreviations: CI, confidence interval; Ref., referent.