JTLU

University campus parking: It's all the rage

Hayley Wiers (corresponding author)
Arizona State University
hwiers@asu.edu

Robert J. Schneider
University of Wisconsin-Milwaukee
rjschnei@uwm.edu

Abstract: Transportation planners, engineers, and researchers have long lamented the highly emotional public responses generated by changes to parking policies. We know that reducing the supply and increasing the price for parking—while intended to advance sustainability and other important community goals—seems to fuel an angry response, but this knowledge is often vague and anecdotal. This study combines qualitative coding of open-ended survey responses with quantitative analyses of sociodemographic and commute characteristics using descriptive statistics and binary logistic regression models to reveal a strong correlation between parking and anger among University of Wisconsin-Milwaukee (UWM) campus users. Higher probabilities of anger are also positively associated with annual household incomes below $50,000, bus pass holders, and residential locations outside of the immediate UWM neighborhood. Qualitative themes from angry comments include frustrations about parking price, supply, and duration; questions about the motivations for university parking policies; and a sense of entitlement among campus users to free and inexpensive parking options. The study interprets these variables and themes together to provide insights into the complicated relationship between parking and anger and the importance of analyzing angry feedback to inform future policies.

Keywords: University campus, commute, parking, anger

1   Introduction

Evaluation metrics for transportation and land-use policies often come in the form of numerical measures. Vehicle kilometers traveled, mode shift, level of service, and accessibility to jobs are all useful tools for institutions to assess outcomes of changes to transportation and land-use systems. In addition, the perspectives of people directly affected by transportation and land-use policies are also critically important. Yet, there are many examples of past planning processes that ignored these personal perspectives, a practice that produced inequitable and negative political outcomes (Innes & Booher, 2004). Analyzing individual perspectives can be messy and time-consuming, but this paper attempts to pin down a relatively difficult-to-pin-down concept: parking-related anger in a university campus setting.

As universities promote transportation sustainability (Schneider & Hu, 2015), they are well-positioned to measure transportation outcomes and proactively solicit feedback from a well-defined community of students, staff, and faculty. Further, there are many effective methods of reducing driving and encouraging more sustainable commute modes (Balsas, 2003; Brown, Hess, and Shoup, 2001;

Daggett & Gutkowski, 2003; Schneider & Hu, 2015; Zheng, Scott, Rodriguez, Sierzchula, Platz, Guo, & Adams, 2009). For example, setting optimum prices for campus automobile parking is commonly accepted as an effective method for reducing parking demand and encouraging alternative commutes to university campuses (Shoup, 2008). However, taking actions—or simply proposing ideas—to change commuting behavior through parking policy is often met with resistance. For some, it may even elicit an angry response. Therefore, universities must engage their communities thoughtfully to implement policies successfully and equitably.

Universities have no shortage of opportunities to seek feedback from their campus communities, but that feedback can be overwhelming and difficult to meaningfully interpret, especially when the feedback isn't positive. However, analysis of negative themes can point university campus policymakers to previously-unknown problems within transportation systems, and probably even to some solutions. If planners have a pulse on the needs, wants, and gripes of their communities, they can recommend short- and long-term transportation and land-use policies to achieve important health, equity, and other sustainability goals in a way that is better-supported by campus users.

Automobile parking lies at a key intersection between transportation and land-use policy and appears to elicit strong emotional responses from people. Indeed, previous iterations of the University of Wisconsin-Milwaukee (UWM) Campus Transportation Survey revealed strong negative sentiments towards certain aspects of commuting, particularly campus parking policies, such as cost, time limits, and enforcement. Campus community members may not understand the university's broader budgetary constraints and environmental goals that underlie these policies (Schneider & Willman, 2019). Guided by a goal of increasing our understanding of pain points within commute experiences, this study focuses on voluntary expressions of anger among university campus users. Using the Fall 2020 UWM Campus Transportation Survey, we analyze qualitative survey comments from students, faculty, and staff at UWM. While the intent of the survey was to collect data relating to campus commutes, anger revealed itself as a primary qualitative theme among open-ended responses and prompted this paper, within which we explore two central research questions: (1) Which aspects of commuting make members of the campus community angry? (2) Do the sociodemographic characteristics and commute characteristics of people who express anger differ from those who do not express anger?

2   Literature review

Previous studies provide insights into how travel choices are associated with various aspects of quality of life, but relatively few focus specifically on the psychological construct of anger. Anger may be useful for understanding how different types of people may react to changes in transportation and land-use systems, such as changes to the price or supply of automobile parking.

2.1   Anger

Psychologists have characterized anger by the causes and expressions commonly associated with this emotion. Anger is a reaction to stress that arises when a person experiences an outcome which they perceive to be negative (Hollan, 1979). Researchers have found that anger often occurs when people believe that another person or entity is responsible for an unfair outcome (Barclay et al., 2005; Mikula et al., 1998; Zitek & Jordan, 2021). Higher levels of anger have been reported when a person believes that the offending person or entity intentionally acted unfairly (Pillutla & Murnighan, 1996). Although anger is typically viewed as a negative emotion, it can be used to encourage others to give a perspective stronger consideration (Sell et al., 2009), and people may use profanity or otherwise strong language to accomplish this (Patrick, 1901).

Researchers in psychology have developed several methods by which anger can be measured (Deffenbacher et al., 1996; Deffenbacher et al., 2002; Snell et al., 1995; Spielberger et al., 1985; Spielberger & Butcher, 1982). Anger studies typically involve subjects self-reporting their anger levels, intentional provocation of anger in subjects, or a combination of these (Fabiansson & Denson, 2016). Importantly, expressions of anger can take a variety of forms, ranging in intensity from annoyance to rage (Ekman, 1992). There are additional varieties of anger that arise in specific situations, such as resentment (a response to grievance), indignation and outrage (responses to mistreatment), and vengeance (retaliation for a misdeed) (Ekman, 1992). People experiencing anger may demonstrate aggression (Berkowitz, 1990; Wyckoff, 2016), retaliation (Barclay et. al., 2005), a lack of trust (Dunn & Schweitzer, 2005), and dishonesty (Yip & Schweitzer, 2016).

One way to consider the possible sociodemographic predictors of anger is to identify how these variables may be associated with emotional well-being. Emotional well-being is measured by the frequency and intensity of an individual's experiences of joy, sadness, anger, and affection (Kahneman & Deaton, 2010). Researchers have found correlations with emotional well-being and many factors, but those most relevant to this study are gender, age, and income. In richer countries where gender rights are relatively equal (researchers included the United States in this category), women tend to report higher levels of emotional well-being (read: less anger) than men (Graham & Chattopadhyay, 2013; Kahneman & Deaton, 2010). Gender parity in emotional well-being is even more pronounced for among older and more educated cohorts living in urban areas (Graham & Chattopadhyay, 2013).

Studies of anger, emotional well-being, and age have shown mixed results. Researchers have linked higher levels of emotional well-being among older adults with an increased ability to self-regulate anger, compared to younger adults (Phillips et al., 2006). Likewise, several studies have revealed an inverse relationship between age and anger expression (Phillips et. al., 2006; Schieman, 1999), while others have shown a U-shaped relationship between age and general emotional well-being (Steptoe et al., 2015) including in the workplace (Taylor et al., 2013). Still, other researchers have found that older workers are likely to report lower levels of emotional well-being when faced with unemployment (Creed & Watson, 2011).

The connection between anger, well-being, and income, however, has been more consistently found, at least where *low* income is concerned. Researchers have observed that lower incomes correlate with greater levels of anger (Graham, 2015) and poorer life evaluations for individuals (Kahneman & Deaton, 2010). However, income may not have much of an effect on emotional well-being above a certain stable income level (Kahneman & Deaton, 2010). Research has also suggested that the socioeconomic characteristics of a place should be considered in tandem with individual characteristics. A study of life satisfaction in metropolitan statistical areas (MSAs) in the U.S. revealed that poor, white residents in rural towns indicated markedly higher stress levels and lower levels optimism than black and Hispanic individuals living in urban areas (Graham & Pinto, 2016). As with age and gender, the relative wealth and opportunities available within a country have distinct effects on the average levels of emotional well-being reported by residents (Graham & Chattopadhyay, 2013). While average subjective well-being is consistently higher in wealthier nations, there may be only small correlations between income and well-being within those nations (Diener & Biswas-Diener, 2002). It has been suggested that psychological well-being may be better predicted by a comprehensive measure of household income, wealth, and economic demands than by current income alone (Mullis, 1992).

2.2   Transport and well-being

Researchers have linked transportation with physical, mental, social, and economic well-being (Lee & Sener, 2016; Singleton 2019). For example, people who commute by car and have longer commutes are

generally less satisfied with their commutes (Handy & Thigpen, 2018; Schneider & Willman, 2019). In analyzing the connections between anger and parking, the most relevant of these dimensions is mental well-being. Individuals who commute by car are likely to report greater stress levels (Wener & Evans, 2011) and lower levels of satisfaction than those who commute by other modes (Handy & Thigpen, 2018; Morris & Guerra, 2015; Olsson et al., 2013; Schneider & Willman, 2019; Singleton, 2019; St-Louis et al., 2014). Given that there are many aspects of automobile travel that may contribute to stress, including traffic congestion, safety, out-of-pocket costs, uncertainty about finding parking, vehicle reliability issues, and lower levels of physical activity (as compared with active modes), it is challenging to predict which factors are most likely to affect the well-being of any one individual.

Labeled as "the most emotional topic in transportation", parking is infamous for bringing out the hypocrite in those who would typically act rationally (Shoup, 2018). Regulation, subsidies, market pricing, and data collection are areas where parking often becomes the exception to an individual's otherwise deeply held views (Shoup, 2018). When the belief that parking should be free and plentiful is challenged, opposition is swift, forceful, and occasionally violent (Taylor, 2019). Researchers have found that parking is often seen by the public as an asserted right, and that threats to remove, reduce, or charge for it are perceived as being fundamentally unfair (Taylor, 2014). In *Parking and The City*, Shoup conjectured that parking seems to elicit instinctual responses such as aggression and territoriality (2018). A previous study of UWM campus commutes suggests that parking complaints may be linked to decreased levels of commute satisfaction (Schneider & Willman, 2019). The *Cow in the Parking Lot*, a self-help book on anger management, is centered around a contemporary parking lot parable wherein the reader is asked to mentally replace a bird-flipping Jeep driver with a mooing cow (Scheff & Edmiston, 2010). The decision to use an example of parking-related anger in the book's name suggests a ubiquitous experience that is unsurprising, yet not well-documented in transportation literature.

2.3   Research gap

Transportation researchers have identified mechanisms to reduce the demand for parking in many different settings, including within central business districts, near transit stations, and on university campuses. We have a good sense of how pricing and supply changes could be implemented from an organizational perspective, but there is little understanding of the impacts these strategies have on commuters. Exploring angry responses may provide insights into disparate impacts of potential parking changes on people who have different levels of automobile dependence, wealth, physical ability, or other characteristics.

Transportation planners, engineers, and researchers have long lamented the highly emotional public responses often garnered by changes to parking policies. We know that reducing the supply and increasing the price for parking upsets people, but this knowledge is often vague and anecdotal. To ensure that future attempts to regulate parking are both equitable and sustainable, transportation policymakers and researchers should understand who is most likely to be angry, *what* they are angry about, and *why* it matters.

3   Method

In this study, we explored expressions of anger using data from the Fall 2020 UWM Campus Transportation Survey. While the UWM campus exists in a specific context, our methods and results may be informative for other universities, particularly urban campuses that serve broad metropolitan regions. Further, the qualitative approach used to assess anger could have even wider application in transportation and land-use research.

3.1   University of Wisconsin-Milwaukee context

The UWM main campus is dense, serving nearly 30,000 students, faculty, and staff in a 0.7 square kilometer area. The campus is located on the northeast side of the City of Milwaukee, WI (city population 600,000; metropolitan region population nearly 2 million). It is surrounded by a neighborhood that is a mix of apartments, student rental properties, relatively expensive single-family homes, and a few dozen commercial businesses within 1000m. Fewer than 10% of students live on campus, so most commute from off campus.

The UWM campus contains just over 3,000 parking spaces in four parking structures and ten outdoor lots [1]. Annual maintenance, debt repayment, and other parking costs for the main UWM campus add up to approximately $3.5 million (Schneider & Willman, 2019). Wisconsin state statutes requires UWM to charge fees rather than use tuition or state funds to cover these costs (Schneider & Willman, 2019), so any policies that would dramatically reduce parking demand would be against the University's interest to pay its parking-related costs. On-campus parking may be purchased annually, semesterly, monthly, daily, or hourly. Daily parking rates range from $6 to $8, and hourly rates range from $0.50[2] to $1.50 (UWM, 2020). Average permit rates in the 2020-2021 year are $808 (annual), $364 (semester), and $96 (monthly) (UWM, 2021). During the 2020-2021 academic year, most[3] annual and semester permits were discounted by approximately 25% to reflect the reduced parking demand[4] and to lessen the financial burden of campus users commuting by car. Street parking (both free and metered) is available on both residential and commercial streets surrounding the UWM campus, though much of this street parking is limited to one or two hours.

Park-and-ride lots with shuttle or bus service are also available to campus users. The UPARK lot with shuttle service is provided for free through student fees and is $2/day or $36.53/semester for all other users (including faculty, staff, visitors, and students not paying fees)[5] (UWM, 2020). Shuttle rides average ten minutes and make two stops on the UWM campus (UWM, 2020). There are three other park-and-ride options which connect with Milwaukee County Transit Service (MCTS) bus routes. MCTS bus passes are free to students who elect to receive them and are $72/month for other users (UWM, 2020).[6]

Analysis of previous UWM campus transportation survey data has shown that, compared to faculty, staff have lower household incomes, longer commute distances, and a greater likelihood of commuting via driving and parking (Willman & Schneider, 2018). Policies that impact the supply and price of parking have connections to the economic and emotional well-being of university students, faculty, and staff. These policies may affect some groups of campus users to a greater extent than others. It is essential to understand whether disparate impact exists within campus parking policies in order to avoid further widening gaps in wealth and opportunities between demographic groups.

Figure 1 provides a conceptual framework for our approach. It illustrates the types of commute and respondent characteristics that may help to explain expressions of anger.

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[1] An interactive map of the parking facilities on the UWM campus is available here: https://uwm.edu/transportation/dans-updated-campus-map/

[2] The hourly rate is $0.50 in some visitor spaces and during non-peak times in some lots. Most spaces are $1 or $1.50 per hour.

[3] Permit rates for all campus parking facilities were discounted during the 2020-2021 academic year except those designated for student residents (Sandburg & Kenilworth). A cost breakdown of the UWM campus parking permit rates can be found in Appendix A.

[4] Safety precautions during the COVID-19 pandemic reduced the use of the UWM campus for classes and other activities.

[5] The UPARK lot is located at Capitol Drive and Humboldt Boulevard and is approximately 3 kilometers from the UWM campus.

[6] $72 per month is the rate deducted from the paychecks of UWM faculty and staff who elect to participate. The same monthly rate is charged to bus riders of ages 12-64 years if purchasing a pass directly from MCTS.
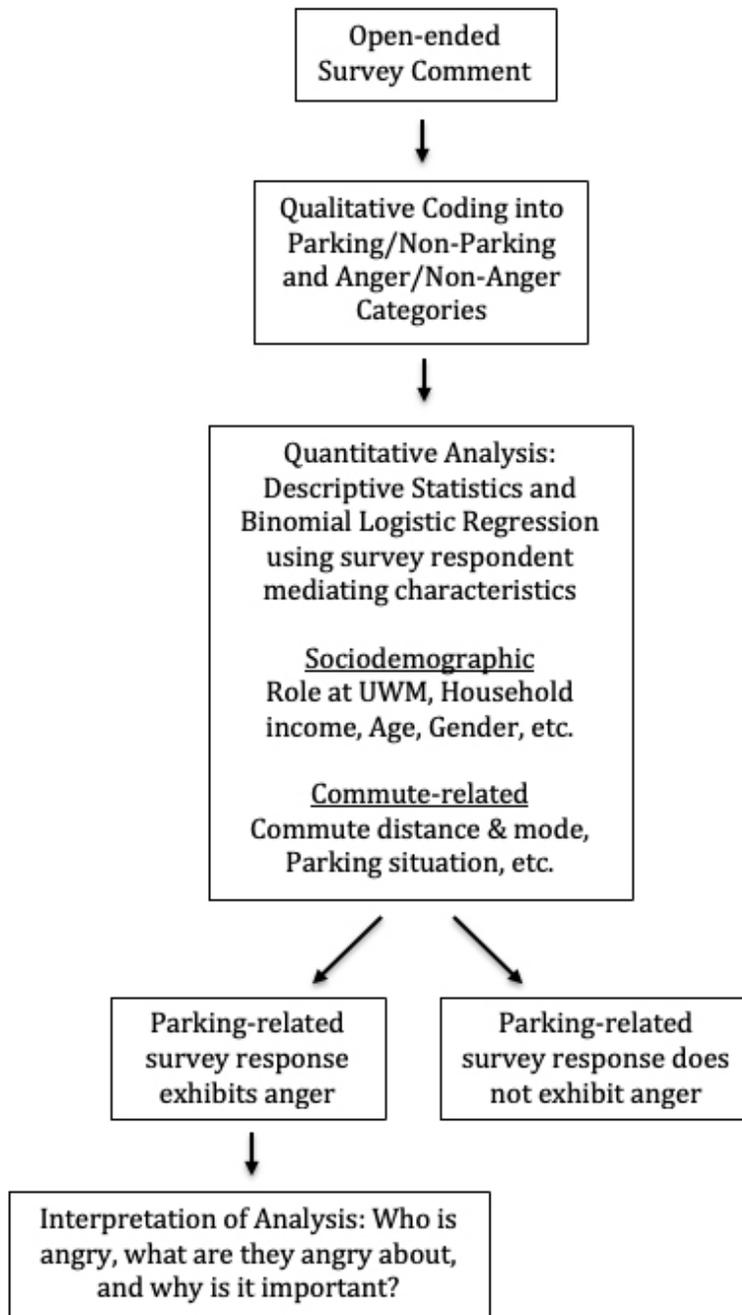
Figure 1. Conceptual framework

3.2   Survey background

The survey was distributed to all users with a UWM email. This included faculty, staff, and students associated with the main Milwaukee campus as well as those associated with other specialized and sub-urban campuses. In this study, we focused only on respondents associated with the main UWM campus located on Kenwood Boulevard in Milwaukee. This survey—conducted previously in the years 2008,

2012, 2014, and 2017—collected data including current and previous commute mode, distance, and satisfaction; as well as respondent characteristics, such household income, residential location (nearest major intersection), gender identity, and role on the UWM campus (i.e., faculty, staff, or student). Considering the reduced need for many campus users to commute because of the COVID-19 pandemic, the survey also included several retrospective questions about respondents' Fall 2019 commute habits. This allowed us to better understand the effects of the pandemic on campus commutes and to reach more campus users who would drive and park during "normal" conditions.

There were 5,188 total responses to the survey. Since we wanted to specifically analyze the responses associated with the main UWM campus, we excluded 1,608 responses from individuals associated with other UWM campuses. Of the remaining 3,580 responses, 714 chose to answer the open-ended question at the end of the survey (Q39). Our analyses focus on the sociodemographic and commute characteristics of these 714 respondents.

A primary component of our analysis involved coding qualitative responses to an open-ended prompt near the end of the survey (see Appendix B, Q39): "Please expand on any of your answers in this section about commute habits and preferences. *Please write in the space below.*" The referenced section included questions about disabilities, motor vehicle access, and attitudes toward driving and parking. Given that the preceding section covered a variety of topics, but was largely focused on driving and parking, we expected that the qualitative responses may be particularly likely to mention driving and parking. Note that the survey did not ask respondents specifically about whether or not they experienced anger during their commutes. The emotion of "anger" became apparent through an initial review of the open-ended comments.

3.3 Data coding

Each of the 714 responses to Q39 were manually coded by topic. Both co-authors coded all open-ended responses independently, using the same coding instrument. Because initial qualitative analysis of these responses suggested that anger may be a significant theme, we developed specific criteria to define anger based on the psychology literature cited above. Responses were coded as "anger" if they expressed any one of the following anger indicators:

    (1) a perceived lack of fairness or justice (Mikula et al., 1998)

    (2) a sense of outwardly-directed blame or mistrust (Pillutla & Murnighan, 1996),

    (3) strong or aggressive language (Patrick, 1901), and

    (4) a statement explicitly describing some level of anger, including annoyance, frustration, outrage, etc. (Eckman, 1992).

To determine the proportion of anger responses, the open-ended responses were coded into two categories: "anger" and "no anger." If a response contained at least one of the above anger indicators, it was coded into the "anger" category. If a response contained no anger indicators, it was coded into the "no anger" category. This coding process yielded 86 anger responses and 628 non-anger responses. Both angry and non-angry responses included fairly detailed comments about campus commutes. The 714 open-ended responses ranged in length from just one word to 248 words, with an average length of about 32 words. Angry responses were notably longer, averaging about 41 words, and non-angry responses averaged about 30 words in length.

Our approach was different than psychological studies focused on anger because anger was revealed as an important theme among responses rather than the focus of the survey. Therefore, we did not attempt to measure the intensity of respondents' anger, as this would typically be done using a validated method such as the State-Trait Anger Expression Inventory (STAXI-2), which was not part of the survey and could not be done retroactively (Spielberger et. al., 1985). Still, our analysis of anger-related

responses reveals important insights for psychological research to explore in more depth.

Independent of the anger coding, all responses were also coded into one of two additional categories: "parking topic" and "non-parking topic". If a response mentioned or clearly implied parking, it was coded as "parking topic". All other responses were coded as "non-parking topic".[7] This coding process yielded 345 parking topic responses and 369 non-parking topic responses. Both coders viewed the comments very similarly for anger and parking, The overall agreement percentage between the two coders was 97% for parking and 91% for anger. The explanation for the slightly higher level of disagreement on anger is that one coder took a more conservative approach and the other coded anger more liberally. For the purposes of our paper, we decided to take a more conservative approach to ensure that the responses truly represented anger. This is what our quantitative analysis reflects.

Table 1. Anger indicators and example quotations

Anger Indicator	Example Comment	Role
A perceived lack of fairness or justice	I purchase a hunter permit and you have to get to work real early and cannot leave during the day-not many spaces are available. Many "reserved" spots are purchased, but no-one parks there. There should be a rule if you don't use your "reserved" spot by a certain time...its open parking	Staff
	I don't really care about more students or more affordable housing. I care greatly about the cost extracted from people already paying tuition.	Staff
A sense of outwardly directed blame or mistrust	Don't use the answers from this survey to justify spending stupid amounts of money on [useless] things.	Student
	Guessing that if this survey is about environmental concerns, we will see all of the major discouraging factors start to appear. Wish I had more confidence in our leadership to not have it play out like this.	Faculty
Strong or aggressive language	parking on campus is a freaking nightmare. WAY TOO EXPENSIVE. no spots	Student
	Parking on campus is the biggest SCAM at UWM. It's absolutely criminal. I will be so happy when I NEVER have to think about parking for work again. You cut our pay / furloughs, you rarely if ever give us meaningful raises, but you keep cutting parking spots and raising fees. If you don't think this is a stressor or morale issue, think again.	Staff
A statement explicitly describing some level of anger, including annoyance, frustration, outrage, etc.:	Finding off campus parking is already a challenge and I refuse to pay for parking. Any additional strain on that already frustrating process would greatly impact my desire to drive to campus.	Staff
	Paying for or finding parking at UWM is such an annoyance that I have regularly doubled my commute and used MCTS to avoid it. I live in the Bay View neighborhood and walking or biking is not a viable option. I also try to use public transit when able to help reduce my carbon footprint.	Student
No anger indicators (for comparison)	I do not often park on campus, but I would when I was working on campus sometimes. If the garage rates increased, that would have discouraged me more from parking on campus.	Student
	I bring my dog to daycare on the days I work on campus, so public transportation is not an option.	Faculty

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[7] Responses that mention driving, but not parking, were coded into the non-parking category.

3.4　　Analysis

To explore our research questions, we examined which sociodemographic and commute-related variables were associated with anger responses. First, we produced descriptive statistics to compare characteristics of the 86 respondents who expressed anger to the 628 who did not express anger. To provide context for this comparison, we also analyzed these variables for all 2,865 respondents associated with the main UWM campus who did not answer Q39.

Second, we developed binary logistic regression models to identify which characteristics had statistically-significant associations with angry (versus non-angry) responses. The form of the binary logistic regression model is specified in other references (such as Schneider & Willman, 2019).

This multivariate approach allowed us to quantify the relative likelihood that a particular variable would be associated with an angry response. We started by estimating a preliminary model with most of the variables listed in Table 2 (we did not include the three variables at the bottom of the table because they were not available for respondents who only telecommuted in 2020 due to the pandemic). Then we removed variables from the model that had the least significant relationships with anger in a stepwise fashion until all variables were statistically significant at the 90% confidence level ($p < 0.10$). The preliminary and final models are shown in Table 3. Since some responses were missing values for one or more variables, the final model is based on 513 responses (58 exhibiting anger and 455 not exhibiting anger).

Finally, we categorized the 86 responses that exhibited anger into several common, qualitative themes (Table 4). These themes further illustrate who is angry, what they are angry about, and why it matters.

Table 2. Descriptive statistics

	No response to Q39		Open-ended response to Q39		Q39 response with no anger		Q39 response with anger	
	Responses	**%**	**Responses**	**%**	**Responses**	**%**	**Responses**	**%**
Sociodemographic Variables								
University Role	**2865**		**714**		**628**		**86**	
Student	1934	67.5	408	57.1	363	57.8	45	52.3
Staff[1]	730	25.5	217	30.4	188	29.9	29	33.7
Faculty	201	7.0	89	12.5	77	12.3	12	14.0
Gender	**1963**		**687**		**610**		**77**	
Woman	1290	65.7	426	62.0	376	61.6	50	64.9
Man	649	33.1	245	35.7	220	36.1	25	32.5
Another gender	24	1.2	16	2.3	14	2.3	2	2.6
Age >60	**1737**		**634**		**565**		**69**	
Yes	123	7.1	58	9.1	54	9.6	4	5.8
No	1614	92.9	576	90.9	511	90.4	65	94.2
Have a disability	**2178**		**714**		**628**		**86**	
Yes	76	3.5	56	7.8	48	7.6	8	9.3
No	2102	96.5	658	92.2	580	92.4	78	90.7
Household annual income (excluding students)[2]	**635**		**260**		**235**		**29**	
<$50K	115	18.1	51	19.6	42	17.9	9	31.0
$50K-$100K	231	36.4	88	33.8	82	34.9	10	34.5
>$100K	289	45.5	121	46.5	111	47.2	10	34.5
Household has three or more adults	**2023**		**711**		**625**		**86**	
Yes	722	35.7	224	31.5	202	32.3	22	25.6
No	1301	64.3	487	68.5	423	67.7	64	74.4
Live with at least one child	**2018**		**710**		**624**		**86**	
Yes	529	26.2	160	22.5	139	22.3	21	24.4
No	1489	73.8	550	77.5	485	77.7	65	75.6
Have been at UWM for 10+ years	**2456**		**714**		**628**		**86**	
Yes	441	18.0	171	23.9	147	23.4	24	27.9
No	2015	82.0	543	76.1	481	76.6	62	72.1
Commute-Related Variables								
Live in same zip code as UWM campus	**1958**		**704**		**621**		**83**	
Yes	519	26.5	215	30.5	199	32.0	16	19.3
No	1439	73.5	489	69.5	422	68.0	67	80.7
Have a bus pass	**2031**		**712**		**626**		**86**	
Yes	796	39.2	289	40.6	253	40.4	36	41.9
No	1235	60.8	423	59.4	373	59.6	50	58.1

	No response to Q39		Open-ended response to Q39		Q39 response with no anger		Q39 response with anger	
Have access to a working bicycle[3]	**2001**		**711**		**626**		**85**	
Yes	984	49.2	364	51.2	324	51.8	40	47.1
No	1017	50.8	347	48.8	302	48.2	45	52.9
Used bike share in last year	**2008**		**708**		**623**		**85**	
Yes	262	13.0	91	12.9	82	13.2	9	10.6
No	1746	87.0	617	87.1	541	86.8	76	89.4
Drive more now than first year at UWM	**1865**		**597**		**521**		**76**	
Yes	500	26.8	134	22.4	108	20.7	26	34.2
No	1365	73.2	463	77.6	413	79.3	50	65.8
Comment mentioned parking	**0**		**714**		**628**		**86**	
Yes	N/A	N/A	345	48.3	263	41.9	82	95.3
No	N/A	N/A	369	51.7	365	58.1	4	4.7
Drove and parked in 2019 or 2020[4]	2205		552		486		66	
Yes	1237	56.1	294	53.3	246	50.6	48	72.7
No	968	43.9	258	46.7	240	49.4	18	27.3
	Responses	**Mean**	**Responses**	**Mean**	**Responses**	**Mean**	**Responses**	**Mean**
Commute distance (kilometers)	**1226**	**17.6**	**228**	**22.8**	**199**	**21.9**	**29**	**28.9**
Fall 2020 commute satisfaction[5]	**1133**	**7.27**	**275**	**7.05**	**239**	**7.13**	**36**	**6.58**
Fall 2020 non-commute satisfaction[6]	**1345**	**7.17**	**439**	**7.19**	**389**	**7.17**	**50**	**7.34**

1) Staff respondents include teaching and non-teaching academic staff (such as lecturers and administrators, respectively) and university staff (hourly employees).

2) We found that student respondents reported much lower household incomes than faculty and staff respondents.[8] While it is likely that this is generally the case, we expected that some students may not have included family assistance or financial aid when reporting their income, causing it to appear artificially low. Because the income of some students is likely higher than they report, we chose to exclude students from the income analysis. Doing so causes incomes to appear artificially high, but we are more confident that the reported household incomes of faculty and staff are accurate than those of students.

3) Bicycle access includes unshared bicycle access or shared bicycle access with another person that the respondent lives with.

4) Drove and parked: Respondents whose primary commute mode to and from UWM was driving alone or carpooling in either Fall 2020 or Fall 2019. This variable was correlated with the "comment mentioned parking" variable, so it was not used in the same models. We included "Comment mentioned parking" in the models since some people who commuted by other modes were influenced by automobile parking constraints.

5) Respondents who said they commuted in Fall 2020 were asked to provide a rating (1-10) of how satisfied they were with their current commute.

6) Respondents who said they did not commute in Fall 2020 were asked to provide a rating (1-10) of how satisfied they were with not commuting.

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[8] For main UWM campus users, mean household incomes were $52,784 (student), $127,511 (faculty), and $94,859 (staff).

Table 3. Binary logistic regression models of responses indicating anger

	Preliminary Model		Final Model	
	Exp(B)[1]	Sig[2]	Exp(B)[1]	Sig[2]
Constant	0.005	***	0.009	***
Sociodemographic Variables				
University Role				
Student	0.606			
Staff	1.01			
Faculty				
Gender				
Woman				
Man	1.10			
Another gender[3]				
Age >60				
Yes	0.628			
No				
Have a disability				
Yes	0.857			
No				
Household annual income				
<$50K	3.00	**	1.87	**
$50K-$100K				
>$100K	1.19			
Household has three or more adults				
Yes	1.62			
No				
Live with at least one child				
Yes	1.07			
No				
Have been at UWM for 10+ years				
Yes	1.55			
No				
Commute-Related Variables				
Live in same zip code as UWM campus				
Yes	0.496	*	0.543	*
No				
Have a bus pass				
Yes	2.09	**	1.94	**
No				
Have access to a working bicycle				
Yes	1.024			
No				
Used bike share in last year				
Yes	0.904			
No				

	Preliminary Model		Final Model	
	Exp(B)¹	**Sig²**	**Exp(B)¹**	**Sig²**
Drive more now than first year at UWM				
Yes	1.57			
No				
Comment mentioned parking				
Yes	22.7	***	21.8	***
No				
Sample Size⁴	**513 (58 anger; 455 not)**		**513 (58 anger; 455 not)**	
Model -2 Log Likelihood	**283**	**289**		
Model AIC	**273**	**52**		
Model BIC	**345**	**73**		

1) Values of Exp(B) above 1 indicate that the variable is associated with a higher likelihood of exhibiting an anger response. Values below 1 indicate that the variable is associated with lower likelihood of exhibiting an anger response. The value of Exp(B) for a particular variable category represents the likelihood of an anger response for respondents with that particular characteristic relative to all other respondents who did not have the specified characteristic (except for those who are represented by other categories of that variable included in the model). Blank cells indicate that a particular variable category was not estimated in the model. For example, in the Preliminary Model, the values for student and staff respondents are relative to the reference category of faculty respondents.

2) * indicates parameter estimate is significant at 90% confidence level; ** indicates parameter estimate is significant at 95% confidence level; *** indicates parameter estimate is significant at 99% confidence level.

3) "Other" gender included respondents with other gender identities.

Table 4. Example quotations and themes from Q39 responses with anger

Category	Anger Comment[1]	Role	
Who is angry?	Staff	Higher parking fees and permits would be upsetting as an employee. Already way too much money. Not only do I have a long commute, $900 + comes out of my paychecks a year just to come to work and park.	Staff
		The prices are already high for workers that aren't management or professors. Paying one hours worth of daily pay to park is very frustrating.	Staff
	Faculty	Faculty should not pay for parking on campus!	Faculty
		…To do my job effectively, I require parking that is on campus, close to my office. I feel that parking should be inexpensive and readily available to employees since it is required for our job.	Faculty
	Students	Parking is extremely expensive, especially for full-time students who already have to work multiple jobs just to support themselves…	Student
		Parking is overpriced, we're paying so much already for the school and then we have to pay $500+ just to park there? It's disgusting	Student
	Parents	I live far away and have children. There is no good public transportation from the direction that I live, therefore I drive. I need to know that I have a parking spot and that I can get to it quickly in case I need to leave to go get them…	Staff
What are they angry about?	Paying for Parking	Parking in the city of milwaukee and UWM is excessively expensive…If I don't need to pay for a permit, I need to pay a meter.	Student
		The cost of parking at UWM is insultingly expensive.	Staff
		Yes I drive and park on campus as I work here and commute from a distance. That does not mean I'm okay with or happy about parking rate almost doubling!!!!	Staff
	Parking supply and duration	Parking around campus is extremely stressful. During peak hours there aren't enough parking spots. Having parking spots with only 1 - 2 hours time is inconsiderate of students with 3 hour classes.	Student
		Paying for or finding parking at UWM is such an annoyance that I have regularly doubled my commute and used MCTS to avoid it…	Student
		The street parking is a scam. Most of the street parking is less than half an hour, and tickets are handed out with joy.	Student
Why does it matter?	Lack of trust or fairness	if i tell you what would discourage me from parking, you're going to use those against me. That's how parking services seems over the years. Punitive and not around to help staff park conveniently or affordably.	Staff
		As expressed previously, the paying for parking on campus is really a way for the university to continue to take money from students…It's theft!	Student
		I am scared by the tone of this questionnaire as it seems to be written to develop a plan to make my life more difficult and/or expensive…Please do not use your urban planning dreams to make my life harder.	Faculty
	Employee retention	Depending on levels, I would consider departing UWM if decreasing available parking and raising hourly prices was once again implemented…	Faculty
		That previous question was asinine. I commute via personal vehicle because there is no other option for covering an almost 30-mile commute in a reasonable amount of time. Nothing the campus does will change that, but would make my commute exponentially more annoying and would likely contribute to me seeking employment at another university.	Faculty
	Employee morale	Parking on campus is the biggest SCAM at UWM. It's absolutely criminal. I will be so happy when I NEVER have to think about parking for work again. You cut our pay / furloughs, you rarely if ever give us meaningful raises, but you keep cutting parking spots and raising fees. If you don't think this is a stressor or morale issue, think again.	Staff
		These surveys make it sound like people have other options to get to work, I do not. Let's face it, commuting to UWM is dangerous and then you get insulted by, the last I knew, the highest parking costs in UW System.	Staff
	Safety	…The city has made it clear that they don't value the safety or lives of pedestrians or cyclists. If the "no stress" biking option is anything like the North or Locust Ave bridges, then this too is a joke. Cars plow through pylons…	Student

1) This sample of comments is intended to be loosely representative of the themes observed among the 86 comments from respondents associated with the main UWM campus that expressed anger in their responses to Q39 of the 2020 UWM Campus Transportation Survey.

4   Findings

Our analyses explored sociodemographic and commute-related variables that were associated with an-gry and non-angry responses to the final open-ended question on the UWM Campus Transportation Survey. The results of our descriptive analysis are shown in Table 2, and our final binomial logit model is shown in Table 3. Example respondent comments that exhibit anger are shown in Table 4. Though this study highlights the variables that appear to correlate with anger, we do not attempt to prescribe definitive causes to these phenomena. Rather, we speculate about potential causes based on specific re-spondent comments, local campus context, existing literature, and informal hypotheses.

4.1   Research Question 1: Which aspects of commuting make members of the campus community angry?

Of the 86 responses that expressed anger, 82 (95.3%) mentioned parking (Table 2). Of the 628 re-sponses that did not express anger, only 263 (41.9%) mentioned parking. After controlling for other variables, the final model shows that respondents who commented about parking were more than 20 times more likely to exhibit anger than respondents who did not mention parking (Table 3). This find-ing was consistent with our hypothesis that angry responses would correlate with parking. With only four angry responses (4.7%) that failed to mention parking, Shoup's suggestion that parking is "the most emotional topic in transportation" (2018) appears to hold true. As nearly all of the angry responses were about parking, the following section about sociodemographic and commute characteristics dem-onstrates how these variables are associated with anger in general, and also discusses why these variables may be particularly relevant to parking-related anger.

4.2   Research Question 2: Do the sociodemographic characteristics and commute characteristics of people who express anger differ from those who do not express anger?

The descriptive statistics suggest that household income may be correlated with anger (Table 2). 31.0% of "anger" group respondents reported an annual household income of less than $50,000, while only 17.9% of the "no anger" group answered the same way. Likewise, the proportion of respondents with an annual household income of over $100,000 was 34.5% within the "anger" group and 47.2% within the "no anger" group. The model shows that people living in households making less than $50,000 per year are nearly twice as likely to exhibit anger than other respondents (Table 3). One likely reason for this is that people who cannot afford to pay for parking are more likely to be angry, especially if they attribute blame to the university (Mikula et. al., 1998; Barclay et. al., 2005).

- "I understand that the University needs to make money, but when living on a fixed income, parking rates do not fit in to budget." (Staff member)
- Conversely, people who can comfortably pay for parking are less likely to perceive the price to be unfair (Barata et. al., 2011; Ibeas et. al., 2014).
- "I live far enough out that I must take motorized transportation to get to work. The most ex-pedient and convenient option for me is to drive myself and park on campus. This allows me max flexibility and maintaining control to come and go on my schedule. It is not a hardship for me to choose this option, so I do - but I'm not thrilled with the expense and time either. I have considered options like the satellite lot and shuttle in - but then I lose flexibility and control and

add extra time, to what is already a long process to get to work. And since it's not a hardship for me - I choose flexibility and control as top factors." (Staff member)

Another consideration is that the mean household income for staff is lower than that of faculty, and staff make up a greater proportion of the "anger" group. Similarly, staff respondents are likely to commute farther than faculty respondents and are more likely to commute via driving and parking.[9]

Our analysis of commute characteristics showed that respondents in the "anger" group had the longest reported commute distance, at 28.9 kilometers (Table 2). This is unsurprising, as longer commutes have been linked to greater stress and lower satisfaction levels (Handy & Thigpen, 2018; Morris & Guerra, 2015; Schneider & Willman, 2019; St-Louis et. al., 2014) as well as limited commute mode choice (particularly in southeastern Wisconsin, where there are few transit options outside of Milwaukee County).

We did not include commute distance in the models because this variable was only available for people who commuted to campus in 2020. Instead, we assessed a simplified version of commute distance: respondents who lived in the same zip code as the main campus (53211, which includes commutes from 0 up to approximately 2.0 to 2.5 kilometers) versus respondents who lived elsewhere. Respondents living in this zip code close to campus made up 32.0% of "no anger" respondent but only 19.3% of "anger" respondents (Table 2). The model confirmed that people living in this zip code were approximately half as likely as others to exhibit anger (Table 3). This result suggests a direct relationship between commute distance and anger, which may be linked not only to the parking situation at UWM but also the lack of other reasonable commute modes:

- "... The price to pay to park my car on campus is outrageous, but a necessary evil at this time. I hope to continue from home even when Covid has passed." (Staff member)

It may also represent an indirect relationship between income and anger, as discussed above. The estimated average reported household income of main campus faculty and staff respondents who live in the 53211 zip code is $113,260, compared with $100,018 for all other respondent zip codes.

According to the final model (Table 3), respondents who owned a bus pass were approximately twice as likely to express anger than other respondents. This may seem counterintuitive, as a bus pass could provide an alternative to driving. However, it may reflect anger in two ways. First, bus pass holders may be frustrated because they are not able to use the bus on a regular basis. For example, many students have bus passes funded by their student fees, but they drive and park because they may not live close to a convenient bus line or have classes at times that correspond poorly with infrequent bus service:

- "I own a house in Bay View, so moving isn't an option for me. I will drive because I don't want to spend an hour taking the bus. I have the money to pay for parking close to the UWM building in which I spend most of my time, so I don't mind spending that. However, parking prices are stupidly high on campus for structures." (Student)

Indeed, 30 (83.3%) of the 36 angry respondents with bus passes were students. Second, some respondents who commute via bus may have been dissatisfied with their experience. Several suggested that the price, availability, and other facets of parking made driving unfeasible, so they were stuck taking the bus:

- "I take the shuttle and bus in Milwaukee because driving here is a nightmare and keeping my car here costs way too much to even consider bringing it down here. This semester especially I wouldn't bring it down here because there aren't many places I can even go. The parking situation here is ridiculous too. You either pay for parking in a parking garage or you pay by meter, which I never understood, or you park three or more blocks away so you can park for free, but

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[9] For main campus users, mean commute distances (in kilometers) were 16.1 (student), 16.4 (faculty), and 24.5 (staff). Percentage of each campus user type whose primary commute mode was driving and parking in either Fall 2019 or Fall 2020: 28.6 (student), 72.3 (staff), and 60.7 (faculty).

then have to walk back to your car. And walking back to your car late at night is dangerous, and I am speaking as a young woman." (Student)

Survey-takers were asked to rate their level of satisfaction with commuting (for those who commuted in Fall 2020) and with not commuting (for those who did not commute in Fall 2020). Analysis of mean satisfaction levels yielded results consistent with what one might expect: on average, angry commuters were less satisfied (6.58) and angry non-commuters were more satisfied (7.34) than their non-angry counterparts (7.13 and 7.17, respectively).[10] This appears to make intuitive sense, as angry commuters are less likely to be satisfied, while angry non-commuters are enjoying a break from their stressors by working from home. Recent research has found that workers who would normally commute by car but have been teleworking during the COVID-19 pandemic miss their commuting routines less than those who would normally commute by another mode (Aoustin & Levinson, 2021). Some of the responses echoed this observation:

- "Biggest prohibitive factor for me to consider returning to campus commuting and parking are the cost of the monthly parking passes. This is the first position I've ever held as an employee where I was expected to pay $75+ a MONTH to park at my own place of employment. It is not acceptable, and WFH saves me this unnecessary expense." (Staff member)

Although a t-test did not indicate that the observed differences in satisfaction levels were significant, these tests were conducted on relatively small sample sizes because it split angry respondents into commuters (n=36) and non-commuters (n=50).Interestingly, 72.7% of angry respondents drove and parked in either Fall 2019 or Fall 2020. This is a smaller proportion than the total proportion of angry respondents who mentioned parking (95.3%) (Table 2). So, a portion of the anger group respondents did not drive and park as their primary commute mode in either Fall 2019 or Fall 2020, even though they were angry about parking. This suggests that some aspects of the campus parking situation also affect those who do not typically park.

While this *could* mean that some respondents feel that the parking supply is too great and the resulting built environment affects their enjoyment of commuting to campus by their chosen mode (so much so that it elicits an angry response), that is not a theme we gleaned from analysis of the open-ended responses. The themes observed in the following comments suggest that angry responders who do not drive to campus feel that the price, supply, or regulation (metering and enforcement systems) of parking is prohibitive to their ability to park on or near campus:

- "I simply don't park in the parking lots due to the costs of a pass and hourly rates. Being staff on campus I believe that the rates are too high. If you made it more affordable I would consider parking on campus." (Staff member)
- "The pricing of on campus or near campus parking is ridiculous and makes parking and unreachable thing for many students and may deter them from bringing a car even if they need one." (Student)

Respondents within the "anger" group were also more likely to be employees than students, based on the descriptive statistics. Students comprised 57.8% of respondents who did not express anger in Q39, but they made up only 52.3% of the "anger" group (Table 2). Likewise, staff and faculty were overrepresented, with staff making up 33.7% of the "anger" group (compared to 29.9% of the "non-anger" group) and faculty making up 14.0% of the "anger" group (compared to 12.3% of the "non-anger" group).

The anger model results were inconclusive for students versus faculty and staff (Table 3), so this characteristic should be studied further. If staff and faculty are more likely to exhibit anger than students,

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[10] Satisfaction was rated from 1 to 10.

it could be due to their role as university employees. They may be angrier because they are more invested in the potential outcomes of a survey about campus transportation, especially if they expect to stay employed by UWM for the foreseeable future. Faculty and staff also have higher automobile commute mode shares than students, so it makes intuitive sense that they would be more likely to comment on parking and thus, to express anger:

- "Faculty should not pay for parking on campus!" (Faculty member)
- "I refuse to pay that much for a parking pass so I'm stuck with moving my car every few hours (if I'm able to find another spot). It's extremely inconvenient and ridiculous. I'm an employee, I shouldn't have to do this." (Staff member)

Respondents who currently drive more now than their first year at UWM made up 20.7% of the "no anger" group but represented 34.2% of the "anger" group. While this variable did not show significance in the model,[11] the relationship between anger and changes to commute behavior deserves attention. Considering that the survey was conducted amid the COVID-19 pandemic and over half of respondents were not commuting to the main UWM campus by any mode , it is surprising to see that a third of angry respondents drive more than they had in their first year at UWM. This may be indicative of individual mode shifts to reduce the risk of contracting or transmitting the virus. If this is true, frequent driving commute trips may be a dramatic change to some individuals' routines. The pandemic aside, finding that driving more is associated with a negative feeling (such as anger, stress, and lower levels of satisfaction) is consistent with previous research (Schneider & Willman, 2019).

Based on proportions among response groups, women were more likely to exhibit anger than men (Table 2), but gender was not significant in the models (Table 3). People older than age 60 were less likely to exhibit anger than younger groups (Table 2), but age differences were also not significant in the models (Table 3).

Key qualitative themes among non-angry responses complement these findings. Common themes included parking price and availability, having no good commute alternative to driving, and living close enough to campus for it to be convenient not to drive. Issues with public transit, bike lanes, congestion, and speeding elicited some negative responses, but the fervor with which people discussed parking is unmatched (Table 4).

- "I almost never take the bus, but I kind of like the bus. Problem is, the bus takes much longer. Instead of a 20-25 minute drive in my car, the bus takes an hour, plus time waiting at the bus stop. If that were a bit closer, I'd take the bus more often." (Staff member)
- "I rarely bike but when I do, traffic safety is a major concern, as is the condition of the roads near campus (potholes)…In terms of personal safety when walking, I now try to avoid leaving campus after dark." (Faculty member)

Although we observed a strong correlation between anger and parking, we recognize that this parking-related anger may be fueled by a combination of factors, and that these factors will vary in significance depending upon a campus's built environment, parking policies, political climate, sociodemographic characteristics, and the number and type of transportation options available.

5   Discussion

According to angry survey respondents, parking on campus is a "disgusting," "greedy," "nasty," "nightmare" of a "scam" that is so "insultingly," "insanely," "exorbitantly," "hideously," "outlandishly expensive," it's "criminal." In other words, people are angry about parking, and they are not mincing words. While the context of this study is limited to a university campus setting, it is not a sentiment unique

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[11] 1,871 (52.3%) of the 3,580 all main UWM campus respondents indicated that they did not commute in Fall 2020.

to UWM commuters. Anyone who has been so bold as to have proposed a parking price increase or supply decrease to their local commissioners can likely attest to the sudden outpouring of emotion that inevitably follows (from neighbors, engineers, commissioners, and planners alike). To many, an attack on parking feels like an attack on freedom. If parking policy is so hotly contested, then transportation research needs to address the (trumpeting) elephant in the parking lot. The following discussion of anger refers to the 95.3% of anger responses that discussed a parking topic. We interpret our findings by summarizing who is angry about parking, what it is about parking that causes their anger, and why it is important to transportation and land-use policy.

5.1   Quantitative variables and qualitative themes

The descriptive statistics and logit model revealed that the campus users who were most likely to have an angry response:

- Had relatively low incomes;
- Commuted from outside of UWM's zip code; and
- Had a bus pass.

Major themes observed among angry comments included parking price, supply, and duration (Table 4). Among those who cited parking price as their primary complaint, many felt that the current prices were excessively expensive. Others said that paying for parking at all was an unreasonable expectation. Among some of the angry responses that mentioned parking price, there is an overarching sense of entitlement, which is characterized by researchers as a belief that oneself is more deserving of rewards, preferential treatment, and benefits than others because of who they are or what they have contributed (regardless of whether merit exists) (Zitek & Jordan, 2021):

- "Faculty should not pay for parking on campus!" (Faculty member)
- "Parking should be free since I pay tuition." (Student)
- "…I think $75 for a monthly hunting pass is outrageous for an employee…" (Staff member)

Other angry responses cited frustrations with the amount of parking available. Among these, most felt that there were not enough parking spaces available, causing them to spend extra time searching for somewhere to park. Several angry responses (particularly from students) mentioned that metered spaces on and near campus had time limits that were shorter than their class sessions, which led to them receiving parking tickets.

Finally, the qualitative responses revealed that parking issues are important enough to campus users to negatively affect their overall perception of UWM. Among these, some responses indicate that their trust in the university has dissolved, while others go so far as to threaten to quit their jobs at the university if any new policies make parking more unfavorable (Table 4). A common theme among many of these comments is an apparent "us versus them" mentality:

- "You guys charge too much for parking and the fact that after a certain time the permit is no longer applicable in open air parking is the stupidest thing I've ever heard of. Why would I buy a pass for a specific time period? The transportation department is the EA games of UWM." (Student)
- "Sincerely, based on that last page, I hope you are not trying to make parking at UWM even worse." (Staff member)

Many non-angry responses also mentioned parking topics, such as price and availability. Some (about 16.2%) non-angry responses indicated unfavorable sentiments toward parking without including any of the anger indicators. Other key qualitative themes of non-angry responses included living

close to campus and having no viable commute mode option besides driving.

- "I prefer to park in covered lots but there is limited space and the cost is a major factor in my decision to park on campus." (Student)
- "Parking is expensive and inconvenient. Walking is more pleasant, environmentally friendly, and better for one's health." (Staff member)
- "I live outside of the city of Milwaukee, I have to drive my car" (Staff member)

5.2   Policy takeaways

Considering the variables and themes listed above, commute characteristics, income, and employee morale are crucial for UWM transportation policymakers to consider.

Our finding that bus pass holders were nearly twice as likely than others to express anger (specifically, parking-related anger) is concerning, as it suggests that simply helping commuters pay transit fares does not prevent campus users from having strong concerns about parking. Although it is somewhat reassuring that respondents who live in the same zip code as UWM were less likely to be angry, our findings suggest that transit service levels (and other commute options, like bicycling) in the Milwaukee region are insufficient to allow many campus users who live outside of the immediate campus area to shift away from car dependency (at least, not to the extent that they do not think to comment angrily about parking in a campus transportation survey). Therefore, ongoing efforts to reduce parking demand on campus must coincide with continuous, substantial efforts to improve local and regional transit, bicycle, and pedestrian networks. Additionally, UWM should expand marketing efforts for park-and-ride and other cost-effective options for those without reliable access to non-car modes.

UWM should also work with the City of Milwaukee and other local municipalities to change land-use policies that increase transit, bicycle, and pedestrian accessibility to campus. These include relaxing regulations to allow for higher-density, mixed-use redevelopment near campus and near high-frequency rapid transit lines that serve the UWM campus. In the long term, this would allow more students, staff, and faculty to live in locations that provide convenient non-automobile commutes.

The increased likelihood for respondents with annual household incomes below $50,000 to express anger suggests that economic inequities may be embedded in current UWM campus parking policies. Perhaps the most shocking finding within the qualitative responses is the fight-or-flight reaction of faculty and staff to hypothetical changes to parking policy (included in the previous survey question, but not an intentional prompt to Q39). From these responses, we gathered that employees feel captive to campus parking policies:

- "...I really have no option to not commute. This leaves me trapped in the current situation, no matter how bad it is or worse it gets or prices that increase. It's a terrible thing to have no way to opt out of paying thru the nose to be able to get to my job." (Faculty member)

UWM could work to address both economic inequity concerns and employee morale by changing its permit pricing structure to a sliding scale approach, where employees are charged different fees based on where their annual salary fits within a set of ranges.[12] Subsidizing transit passes for employees (in addition to the already-subsidized student bus passes) is another potential solution suggested in a comment:

- "On campus parking is hideously expensive! I really hope UWM considers subsidizing the [commuter value pass] again after the pandemic because the express buses from the suburbs are much nicer than commuting in traffic and were an affordable option. Not having to drive was a nontrivial quality of life improvement." (Staff member)

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[12] An example of such a pricing scheme can be found here.

Further, UWM should push local governments to require affordable housing units as a part of the mixed-use redevelopments described above. This is important to ensure equitable outcomes from longer-term accessibility improvements.

As we read the angry comments of our fellow students, faculty, and staff, one thing is clear: planners think about parking differently from most other people. Though there were plenty of non-angry comments supporting broad goals to improve the environment, health, and safety, all of which would support reducing automobile commuting and parking on campus, the contrast between those and the anger responses was stark. As transportation researchers and professionals, we may feel more qualified to make decisions about campus parking policies because we have studied it and know the "facts": that automobile parking contributes to congestion (and greenhouse gas emissions), higher costs, public health crises, and the erosion of urban landscapes (Goodyear, 2014; Shoup, 2011). Understanding and valuing these concepts, we may be more likely to brush off the complaints of those who have long driving commutes because we perceive that these individuals choose to contribute to the negative effects of driving and parking. However, the tones of the anger responses suggest that campus users—at least in the context of UWM—do not view driving and parking as a choice, but rather a necessity:

- "I have a 45 minute commute. With this commute the idea of having to pay more for parking structures in addition to having to fill my tank 3 days a week makes my mind wanna explode. The transit availability from Waukesha county to campus is a joke…" (Student)

One function of expressing anger is to convince others to consider one's point more seriously (Sell et. al., 2009). Assuming this was an intention of those who expressed anger in their comments, these individuals may not let go of their anger until they feel that their points have been meaningfully considered. This study reveals that attitudes about parking are deeply ingrained in society and affect the everyday experiences of those who depend upon it (and some who don't). Continuing to act without acknowledgement of these concerns will only add to the culture of anger surrounding parking on campuses like UWM. Allowing this collective negative emotion to fester could impede future efforts to reform parking (Taylor, 2014). Conversely, granting cheap and plentiful parking simply because it was demanded will have even more detrimental implications for future generations. To improve sustainable transport modes, reverse inequitable parking policies, and repair employee morale, campus transportation policymakers should take advantage of a campus community that is willing to participate in the decision-making process by prioritizing improved communication and involvement efforts.

Improved communication includes clearly articulating the case for shifting more commuters away from driving alone toward public transit, bicycling, and walking: reduce greenhouse gasses, improve physical activity and health, increase safety, reduce university infrastructure costs (that get passed on to employees and students), and convert parking lots to more attractive uses. It also includes explaining that the university is required by law to charge certain parking fees. Yet, our research suggests these messages must be complemented by a recognition of existing constraints faced by many in the campus community, such as the inadequate supply of affordable housing near the UWM campus. If the transportation funding streams were more transparent and better articulated to the campus community, the price and supply of parking might appear fairer and be less likely to induce angry responses from campus users. This communication could, for example, be done through the UWM transportation website, where students, faculty, and staff purchase parking permits. These messages are more likely to be seen as genuine if they are accompanied by well-funded plans to provide commuters with better transit, bicycling, and walking options.

5.3   Considerations and future research

Limitations of this study include the inherent subjectivity of coding qualitative responses, potential influences of previous survey questions on comment content, race not being included in the Fall 2020 UWM Campus Transportation Survey, and that the survey was conducted amid the COVID-19 pandemic, when a majority of students, faculty, and staff were not actively commuting to and from campus. We relied on the ability of many respondents to recall their commute experience from the previous year. Additionally, some comments may have exhibited anger, but were not coded as anger responses because they did not fall clearly into any of our established anger indicators. So, it is possible that our analysis slightly underestimates the number of angry responses in our data.

This study provides an introductory analysis of anger among university campus commuters. Anger was a clear, central theme among comments that mentioned parking, but we acknowledge that only a small percentage of all respondents exhibited anger in their responses (11.8% of people who wrote an open-ended comment (n = 714) and 2.4% of the sample population (n = 3580). Our primary finding is not that anger is extremely common, but rather that nearly all the angry responses were about parking.

Our results reflect the specific context of UWM, which is in a metropolitan region that currently lacks rapid transit and has experienced bus service funding cuts over the last two decades. Plus, a majority of the campus community commutes long distances (more than 10 kilometers). Future research should be conducted at other university campuses and non-university employment centers in different urban contexts to further explore the connections between parking and emotion to reveal the causes, intensities, and opportunities associated with societal attachment to parking.

6   Conclusion

We know that proposals to reduce the supply and increase the price for parking—even when made to achieve important community goals—often fuels an angry response, but this knowledge is often vague and anecdotal. Our qualitative and quantitative analyses showed a strong correlation between parking and anger among University of Wisconsin-Milwaukee (UWM) campus users. Higher probabilities of anger were also positively associated with annual household incomes below $50,000, bus pass holders, and residential locations outside of the immediate UWM neighborhood. More deliberate public engagement, clearer messaging about the purpose of parking price and supply changes, and significant investments in other public transit, bicycling, and walking commute options could help mitigate angry reactions to university strategies to reduce automobile parking demand. While the findings from this paper apply to the UWM campus context, the qualitative approach we used to assess anger could be applied more broadly as government agencies seek to change parking policies and develop more sustainable transportation and land-use systems.

Acknowledgments

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