Work in Progress: Designing a Community-led Bike Share Program for a Small U.S. City: Evidence from Fort Smith, Arkansas

Mr. Anindya Debnath, University of Arkansas
Dr. Suman Kumar Mitra, University of Arkansas

Dr. Suman Kumar Mitra is an Assistant Professor in the Department of Civil Engineering at the University of Arkansas, Fayetteville. Prior to join the University of Arkansas, Dr. Mitra worked as an Assistant Project Scientist at the Institute of Transportation Studies at the University of California, Irvine (UCI). His primary research interests include travel behavior analysis of special population group, sustainable transportation, travel demand modeling, , land use-transportation interaction modeling, and transportation safety. Dr. Mitra's current research focuses on how technological advancement in transportation can best serve the disadvantaged population through the integration of transportation systems, economic activities, and land uses. He was a recipient of the Environmental Excellence Award from the Federal Highway Administration and his research on carless households was awarded the Public Impact Fellowship in 2016.

Work in Progress: Designing a Community-led Bike Share Program for a Small US City - Evidence from Fort Smith, Arkansas

Anindya Kishore Debnath[1], Suman Kumar Mitra[2]

1. PhD Student, Department of Civil Engineering, University of Arkansas, Fayetteville, Arkansas-72701, Email: akdebnat@uark.edu
2. Assistant Professor, Department of Civil Engineering, University of Arkansas, 4190 Bell Engineering Center, Fayetteville, Arkansas 72701, Email: skmitra@uark.edu

1. INTRODUCTION

Affordable-accessible housing for working families is increasingly scarce in the U.S., in particular for small and mid-sized cities in rural areas. As many small and mid-sized cities offer only limited public transportation options, low-income residents living in those areas may struggle to access jobs, and critical goods and services. Small- and mid-sized cities in rural areas can leverage the explosive growth of shared micro-mobility (SMM) systems to provide convenient, reliable, and affordable transportation options for affordable housing residents and other low- and moderate-income households to access jobs and other essential activities. SMM services are defined as shared transportation modes for localized personal travel using very light vehicles, including electric scooters (e-scooters), docked and dockless shared bikes, electric skateboards, and electric pedal-assisted (pedelec) bikes [1]. While SMM services present a potentially viable and creative solution, cities struggle to attract and operate SMM providers. This is attributed to a mismatch between community needs and business models of SMM providers. Most SMM business models are precedented on the operational and profit structures required of metropolitan areas where they have been widely deployed in large cities. For small cities, capital, and operational costs of SMM systems are disproportionately burdensome, and target users - many of whom live in poverty with no or limited use of credit cards or smartphones - face significant barriers to entry. Therefore, there is a critical unmet need to formulate a new model, one that explicitly addresses the needs and challenges of implementing SMM in small- and mid-sized cities in rural areas. In the absence of such a model, the promise of SMM services in improving the accessibility of low-income individuals to jobs and essential services in small and mid-sized cities will likely remain unfilled.

The existing focus of shared mobility studies is on quantifying the mobility impacts of carsharing, ridesharing, and traditional bike-sharing programs [2], [3], [4], with a limited focus on impacts for low-income households [5], [6]. No prior work considers the unique context of SMM services, including e-scooters and e-bikes, or how SMM services could be innovatively used to increase transportation options for low-income individuals. Instead, research on the mobility of low-income populations focuses largely on access to traditional weekday '9 to 5' jobs with solutions targeting transit routing and frequency. This is a problem considering many low-income people work late nights and weekends when transit is less frequent or unavailable [6]. Moreover, in small cities, transit is often limited due to lower population and job density [7]. Thus, transportation solutions that consider but do not rely on transit to improve the accessibility of low-income workers in small and mid-sized cities should be investigated. In this regard, the objective of this paper is to demonstrate the process of designing and evaluating a community-centered Shared Micromobility (SMM) system tailored for small and mid-sized cities. The Ride

4 SMILIES bikeshare program in Fort Smith, Arkansas, serves as a pertinent case study for this exploration.

Ride 4 SMILIES is a bikeshare system designed for low-income communities using a community-based participatory approach. It was a collaborative work of nine different agencies led by the Department of Civil Engineering at the University of Arkansas at Fayetteville and brought together by the funding support of the National Science Foundation (NSF). The objective of the project is to develop an affordable, inclusive, and sustainable bike share system for a small city like Fort Smith. The insights and lessons drawn from this initiative will benefit cities facing similar challenges, helping them provide transportation solutions to those who need it the most. The central hypothesis guiding the design and deployment of the Ride 4 SMILIES system is rooted in citizen participation, asserting that a bike share system founded on active involvement from the community will lead to a citizen-centric, citizen-led model of SMM operation, resulting in greater accessibility and mobility benefits for the targeted users.

The remainder of the paper is structured as follows: Section 2 offers a description of the study area, while Section 3 outlines the overall methods employed. Sections 4 to 9 delve into each step utilized in designing this community-centered bikeshare program, concluding with a summary in Section 10.

2. STUDY AREA

Being situated on the western edge of the State of Arkansas, Fort Smith has a population of nearly 90,000 population and spans around 70 square miles, which corresponds well with the size of a small city. It has a per capita average income of $20,256 **(Figure 1)**, below the national average of $31,177 and has a higher share of households without a vehicle (9%), above the national (8.8%) and state (6.3%) averages. Most of these families are racial or ethnic minorities (Black, Native, or Hispanic). The housing crisis is plagued with weak connections between housing and transportation options. The Fort Smith Transit system, the only fixed route, fixed schedule transit system, crisscrosses the city with weak connections to several large employers (poultry processing, manufacturing, healthcare, higher education, and casinos). The bus-only transit system runs Monday through Friday from 7 am through 6 pm. This makes it difficult for many low-income and/or rural households to access jobs and services that require attendance after hours or during weekends. Moreover, there is no other alternative transportation mode for these people except for some limited ride-sharing services like Uber or Lyft. Overall, the city has above-

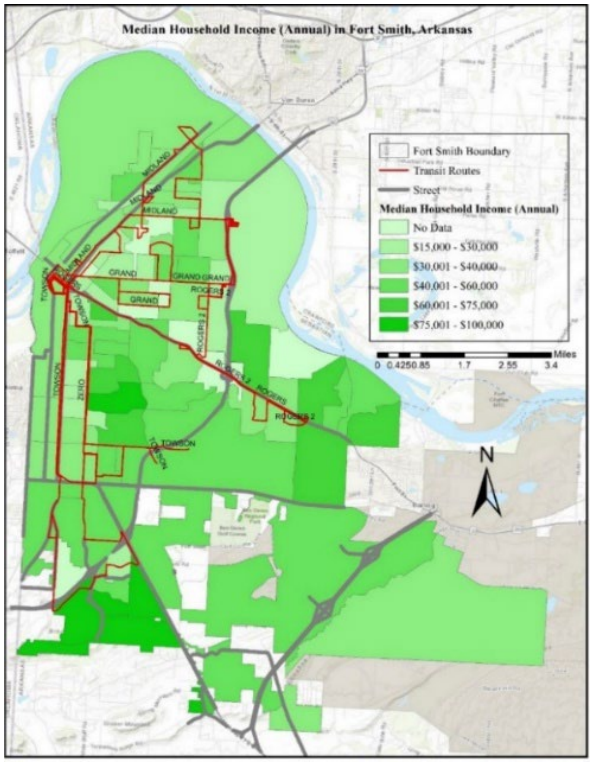

Figure 1. Census tract level median household income, Fort Smith, AR

average levels of at-risk, transportation-disadvantaged residents, which researchers often refer to as the salient features of a "transit desert".

3. CBPAR: THE GUIDING PRINCIPLE FOR RIDE 4 SMILIES AT FORT SMITH

We used Community Based Participatory Action Research (CBPAR) methodology [8], in this project. The CBPAR approach envisioned for the study is embedded in the strengths and assets of the community, placing a high value on the voices and knowledge of the community members and the organizations that serve them. It involves co-inquiry, equitable engagement, and positive change, encapsulated by a spirit of collaboration and consensus [9], [10]. The CBPAR approach employed in this study is comprised of six phases **(Figure 2)**.

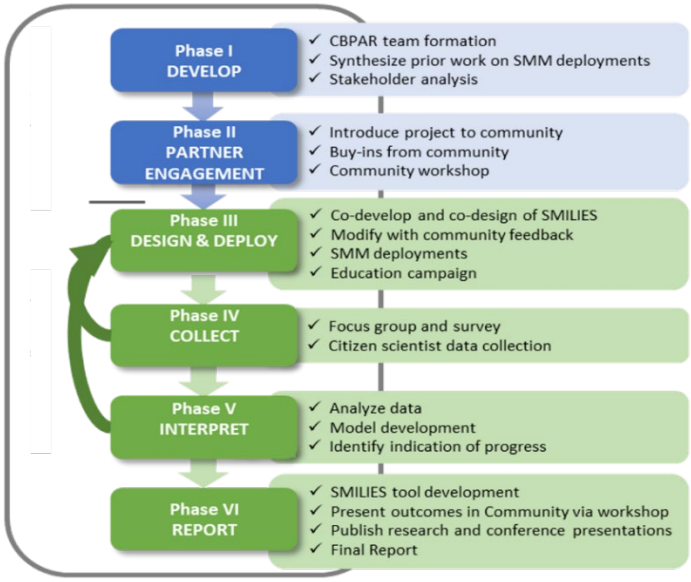

Figure 2. The CBPAR method for the project

We employed a CBPAR framework [9] to guide the co-design and deployment of the bike share system in Fort Smith. Similar approaches have been successfully applied to public health issues in lower-income communities [10] and for mobility to jobs for older adults [11]. However, the role of CBPAR in designing a successful, equitable, sustainable, financially sound bike share system for the low-income community remains unknown. We hypothesized that the integration of technological and social dimensions in bike share system design through a community-based participatory approach will create a system that can reduce barriers to low-income communities. CBPAR approach appears to be a good fit for designing and assessing the impact of a bike share system on accessibility to jobs and essential activities for affordable housing communities. The subsequent sections outline detailed accounts of the design, execution, and performance evaluation of the “Ride 4 SMILIES”.

4. PHASE I: DEVELOP

In this phase, we created the CBPAR teams and synthesized information and knowledge from previous research/projects on SMM deployment in other cities, collected detailed information of different business models, and presented that information to the CBPAR team. Our CBPAR team

included representatives from Frontier MPO, the City of Fort Smith, and three research team members. We completed a stakeholder analysis and a workshop among Phase I team members to identify additional community partners, advocates, implementers, and project beneficiaries. We recruited one member from each neighborhood and from each employer to the CBPAR team. After a brainstorming workshop, this extended CBPAR team recommended working with a local private rideshare operator. However, the local private rideshare operator declined to get on board because of their lack of confidence in operating a larger scale system and performing up to expectation. We eventually partnered with Tandem mobility, a national SMM company specializing in software and SMM infrastructure implementation. The stakeholder analysis and workshop expanded the initial set of community partners for this project to include Champion Cycling and the Future School of Fort Smith. We also developed a project webpage using 'Public Input', a community engagement software platform used by government agencies [21] and hosted by the Frontier MPO. For additional project dissemination, we set up a 'Facebook' social media page where community members provided comments and feedback.

As part of understanding the travel needs of the Fort Smith residents, we initiated data collection effort with the travel behavior assessment of the Fort Smith residents. A summary of this data collection effort is outlined in **section 7**. We received responses from a diverse group of people in terms of gender, race, age, education, and income. The distribution across all this socio-demographic information also corroborated with the census statistics. Around 60% of the responses came from male followed by 40% of them from females, and the rest constituted transgender and non-binary. Respondents were predominantly white (75%), followed by 9% Black or African American, and the rest comprised Hispanic, Latino or Spanish, Asian, American Indian, and Native Hawaiian or other pacific islanders. A good share (around 75%) of the respondents were young adults aged between 18 – 55 years followed by the older adults (16%). The survey respondents were relatively evenly distributed across various educational attainment groups where 35% had at least a bachelor's degree, followed by around 45% who graduated from high school/GED and some college. A good share (45%) of the responses was received from residents with an annual household income less than <$35,000 trailed by an even split of residents with an annual household income between $35,000 - $75,000 and greater than $75,000. Around 12% of the respondents were reported to have no car in their household, which is higher than the national average (around 8.5%). On the other hand, around 87% of them had at least one car in their household, which was lower than the national average (90.8%).

A major share of the respondents uses personal cars, as their primary transport mode, irrespective of weekday or weekend, trailed by public transport and bicycle they own. They tend to use private vehicles more during the weekend than the weekdays while public transportation usage drops by a few percentages over the weekend. This partly speaks for the shorter hour of operation by the Fort Smith Transit on Saturdays and the complete shutdown on Sundays. Interestingly, bicycle usage was slightly favored by the residents on weekends as opposed to weekdays. This probably reflects a share of the residents belonging to car-less or car-deficient households. At least 25% of residents commute longer than 20 minutes to get to their work. Since a higher share of the residents uses personal cars as their primary mode and only a quarter of the residents commute longer than 20 minutes, it could be assumed that a good share of them work within the city limit of Fort Smith. Around 15% of the residents commute longer than 30

minutes. Regarding their interest in having a bikeshare system in their city, around 75% of the residents were in favor of having one.

When the residents were asked to report their transportation challenges, nearly 35% of responses were centered around limited public transportation as the most pressing one, followed by limited sidewalks, hazardous road conditions, carless-ness, and limited bike infrastructure **(Figure 3)**. This clearly resonated with the urge to introduce alternative active transportation options that will pave the way for the residents to demand a safer, healthy, and sustainable infrastructure for active transportation.

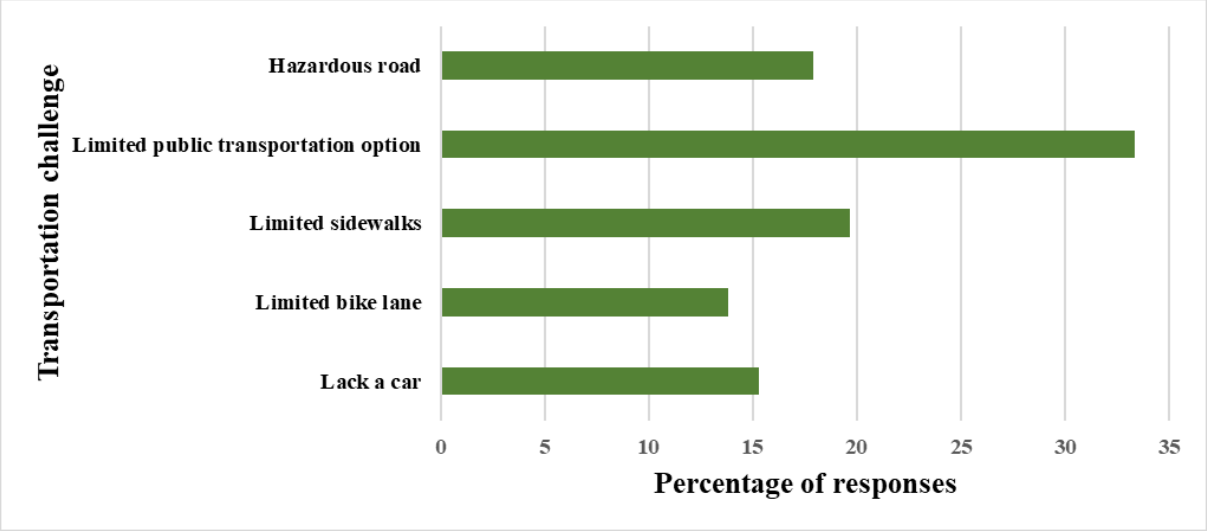

Figure 3: Transportation challenges of the Fort Smith residents

5. PHASE II: PARTNER ENGAGEMENT

Collaborating with stakeholders: The groundwork for Phase II was established during Phase I with the goal of generating collaboration among all the members of the CBPAR teams through a series of virtual ('Zoom') education and development sessions. To garner community buy-in, a workshop was hosted using the virtual meeting space platform, Public Input [12] In this workshop, we introduced the concept of SMM and elicited feedback on possible implementation areas and system operations. Public Input allowed diverse methods for participation including call-in, text, chat, and video interaction so that all opinions and feedback were noted. Prior to the workshop, we collected baseline data on community transportation needs using both online and paper-based methods. This survey and workshop helped identify community-specific strengths, needs, and barriers regarding access to transportation, and develop a plan for a community-based SMM implementation strategy to be carried out in the following phases.

6. PHASE III: DESIGN AND DEPLOY

6.1 Review of Existing Bike Share Systems

To have an understanding on design components of bike-share system and pricing mechanism, we conducted an extensive and comprehensive review on the existing bike share systems including docked and dock less systems in the U.S. As of now, we reviewed a total of 250 bike-share programs. We checked a wide array of information including different sign-up options,

payment methods, pricing plans and incentives designed for low-income communities to have a holistic understanding how other bike share operators are conducting their business across different size cities in the U.S.

We observed a noticeable growth of bikeshare programs in the U.S. in the past decade. Around 50% of bike share programs have only one sign-up option followed by 44% offering two sign-up options and only 6% allowing three sign-up options. Bike share programs with one or two sign-up options are mostly banking on mobile-based applications and websites, asking for the users to have access to the internet. Around 80% of the bike share operators collect their fares through two payment options, mostly through debit card and credit card, requiring the user to have a bank account in the first place. Only a handful of the systems allow prepaid cards for those who don't have a bank account or access to technology. When the programs were reviewed across different sizes of cities in the U.S., around 45% of them were in small size cities, of which 95% of them joined the bike share industry after 2015, around eight years after the first bike share system was introduced in the U.S. While 35% of the bike share systems located in the large cities are offering more than two payment options, only 10% operators in small cities have more than two payment options.

6.2 Co-design

'RIDE 4 SMILIES' leveraged co-design principles to design and develop a business model for community-centric bike share system for low-income communities at Fort Smith. The following seven key components led the way for developing the bikeshare system from scratch: Easy enrollment, price transparency, reliable availability, low-tech redundancies, adaptive, integration with transit, and active inclusion. **Figures 4a-4d** portray community engagement as the project progressed from design to execution and evaluation.

Figure 4a: Meeting at Ward 2, Fort Smith

Figure 4b: Community Action Team Meeting

Figure 4c: Workshop

Figure 4d: Meeting at Ward 1, Fort Smith

6.3 Deploy RIDE 4 SMILIES

We selected initial bike share stations based on the: i) percentage of low-income population living in a neighborhood/affordable housing community, ii) proximity to transit services, iii) communities that faced most transportation problems (based on the survey data) and, iv) crowdsource station locations through the project public input/Facebook page. Sites based at employment centers were selected from locations of low-income jobs (using LEHD Origin-Destination Employment Statistics (LODES). Based on the feedback from community stakeholders received in the Phase I and Phase II workshops and meetings, three neighborhoods, two employer locations, and two bus stops were evaluated for deployment. The Ride 4 SIMILIES was inaugurated on May 12, 2022, with 40 pedal bikes and eight bike stations **(Figure 5a)**, located mostly in the low-income communities of the city of Fort Smith. We offered a 'pay as you go' pricing plan as a starter, which included a complimentary ride for the first hour, followed by a charge of $0.5 for every subsequent half-hour.

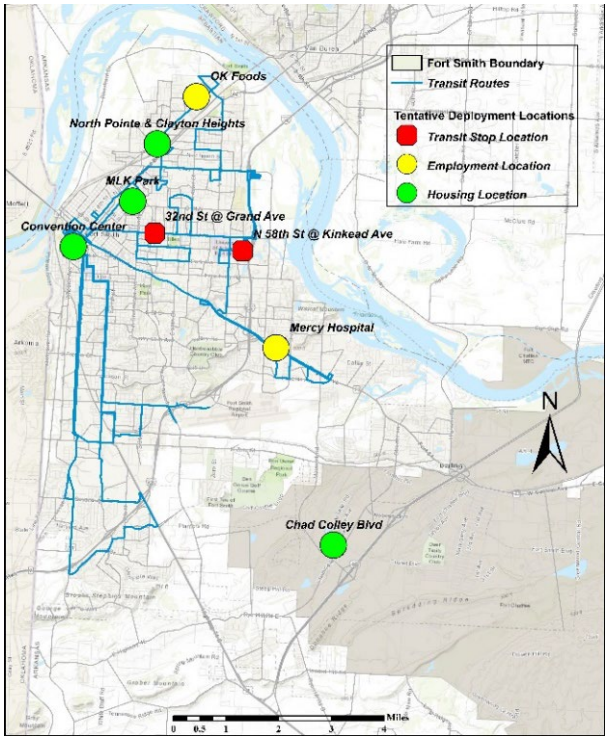

Figure 5a: 'RIDE 4 SMILIES' initial station locations

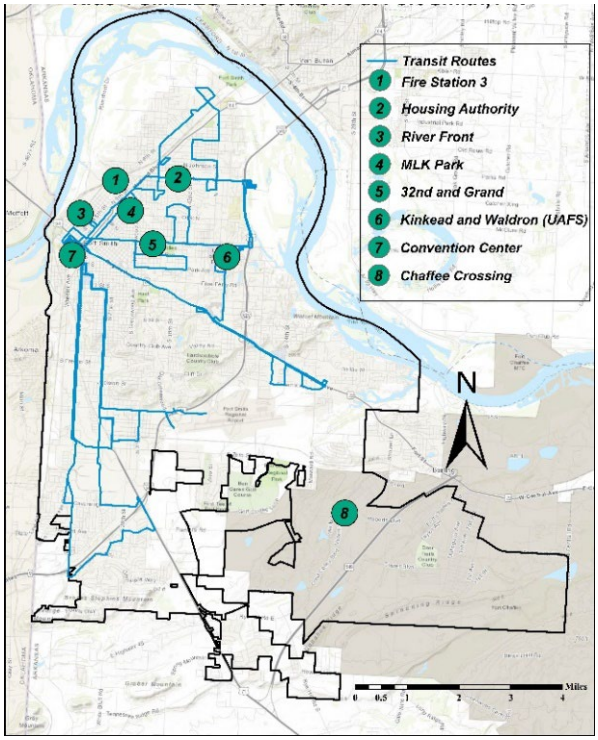

Figure 5b: 'RIDE 4 SMILIES' relocated station locations

After conducting practical evaluations based on three months of operation (e.g., specific locations for stations, transportation infrastructure considerations, usage at initially designed locations) for the sites, four stations were relocated to more convenient locations with prior consultation with the community leaders. **Figure 5b** shows the relocated station locations. While relocating the bike stations, a quarter of the pedal bikes were replaced with electric bikes (e-bikes) in early October 2022. Another batch of 10 e-bikes were added to the current fleet in the second quarter of 2023. The deployment of electric bikes came with a revised pricing plan as follows.

- **For a regular bike:** $0.50 unlock fee, each unlock provides 30 minutes of free ride time and $0.50 per 30 minutes thereafter.
- **For an electric bike:** $1 unlock fee, each unlock provides 30 minutes of free ride time and $1 per 30 minutes thereafter.

7. PHASE IV: DATA COLLECTION

7.1 Travel Behavior Data

We collected the data in the form of a travel behavior survey from the residents of Fort Smith from April 2022 through May 2022. The respondents were open to taking the survey online or via paper. The paper surveys were mailed out to random 5000 home addresses at Fort Smith. Responses were substantially higher through online surveys than through paper surveys. However, the completion rate was substantially lower through the online survey. Some other notable findings from this data collection effort are documented in **section 3**.

7.2 Bike Rental Data

The bike rental data comprises trip start and end information along with the duration of each rental for pedal bike. The e-bikes data are stored following the standard protocol of bike share data i.e. Generalized Bike Share Specification (GBFS). Some key findings on this data are available in **section 7.1**.

7.3 User Trip End Data

To obtain more information about the users of the Ride 4 SMILIES bikes, an additional trip-end survey was integrated into the rental app. First introduced on May 9, 2022, this survey has been filled about 600 times by the users of the bike share program to date (December 15, 2022). Some key findings on this data are available in **section 7.2**.

7.4 Focus Group Discussion

We designed several focus group discussions with both users and non-users of the Ride 4 SMILIES bike share system. The FGDs are aimed at getting their feedback on sign-up options, payment methods and pricing plans. We are conducting the FGD sessions acknowledging the fact that these issues had been acting as barriers to entry for the low-income communities to such bike share systems in many of the other U.S. Cities. Their feedback would be assessed with the current practices followed by other bikeshare systems across different cities in the U.S.

7.5 Citizen Science Based Data Collection

The research team is implementing qualitative assessment component using citizen science to assess the impact of RIDE 4 SMILIES. The assessment component will use qualitative inquiry through descriptive phenomenology. This qualitative inquiry is appropriate because it emphasizes the 'pure' description of people's lived experiences with a phenomenon, what the experience meant to them and how they experienced it.

8. PHASE V: INTERPRET: DATA ANALYSIS AND MODEL DEVELOPMENT

Ride 4 SMILIES uses the following two sources of data to evaluate the service performance on a regular basis ever since the bike share program started its operation. The first set of data (bike

rentals data) highlights the usage of bikes and stations whereas the second set of data (trip end data) provides insights on the users and their travel behavior.

8.1 Bike Rentals Data

The rentals data recorded all the trips (including rebalancing trips) that were made using the bikes in the RIDE 4 SMILIES bike sharing program. Datasets for both e-bikes and regular bikes had the same columns even though they were collected separately. These columns included user information (e.g., name, user ID, user phone number), trip information (e.g., duration, start station, end station), bike information (e.g., hardware type, hardware product name), and transaction information (e.g., charge pending note, base rate). The rentals datasets were trip level datasets; each observation in the datasets corresponded to one trip.

Bike usage patterns

Since the bike sharing program is in its pilot phase, the performance of the program was evaluated monthly by analyzing the rentals data. The data-driven evaluation prompted appropriate actions to be taken for improving the performance of the bike sharing system. After the rentals datasets were preprocessed, several metrics were measured and tracked as indicators of the performance of the bike sharing system. A key performance indicator and some sub-level metrics were tracked to evaluate the system performance. The metric that served as the key performance indicator was the number of trips per bike per day. Apart from tracking this metric monthly, the metric was also calculated for the entire period of operation. The value of this metric for the entire period of operation was 0.2 trips per bike per day. This allowed us to compare Ride 4 SMILIES to bike sharing systems of similar scale, which was another motivation for choosing this metric as the key performance indicator.

The monthly trend of this metric suggests that the bike sharing system performance was at its peak during the months (May, June, and July) of summer. And this seasonal trend was repeated for both the years of operation (2022 and 2023). However, in summer 2023, the bike sharing program performed better than that of 2022 **(Figure 6)**. During these months, the value for this metric was higher than the average value (0.2 trips per bike per day) for the entire period of operation. The better performance in summer 2023 (compared to summer 2022) may be attributed to the station relocation (in November 2022) and the introduction of electric bikes (in October 2022).

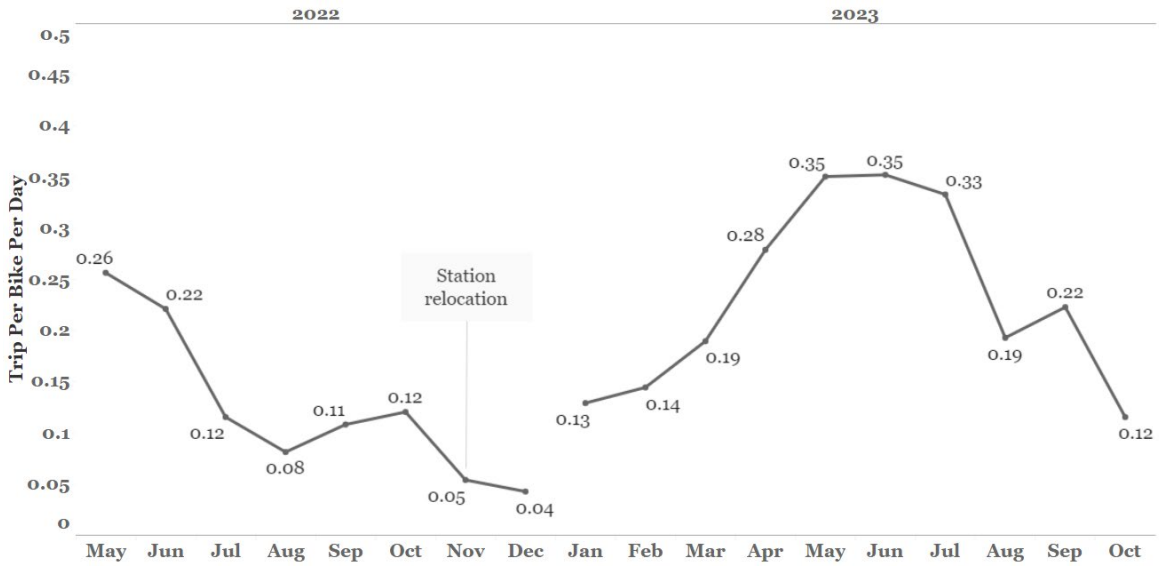

Figure 6: Monthly trend of the number of trips per bike per day

Station Performance

Apart from monitoring the performance of the bike sharing system, the performance of the individual stations was also monitored using some station-level metrics. These metrics were calculated from the rental datasets. Unlike the system performance indicators, which were calculated monthly, the station performance indicators were calculated for the entire period of operation.

Firstly, the total number of trips at each station was calculated and the stations were ranked (from best performing to worst performing) based on this metric. **Figure 7** shows the total number of trips at the eight stations that are currently active. It is evident that the best performing station was Riverfront Park. The performance of this station may be attributed to the biker friendly infrastructure (e.g., shared use path/bike trail, scenic environment) around the station.

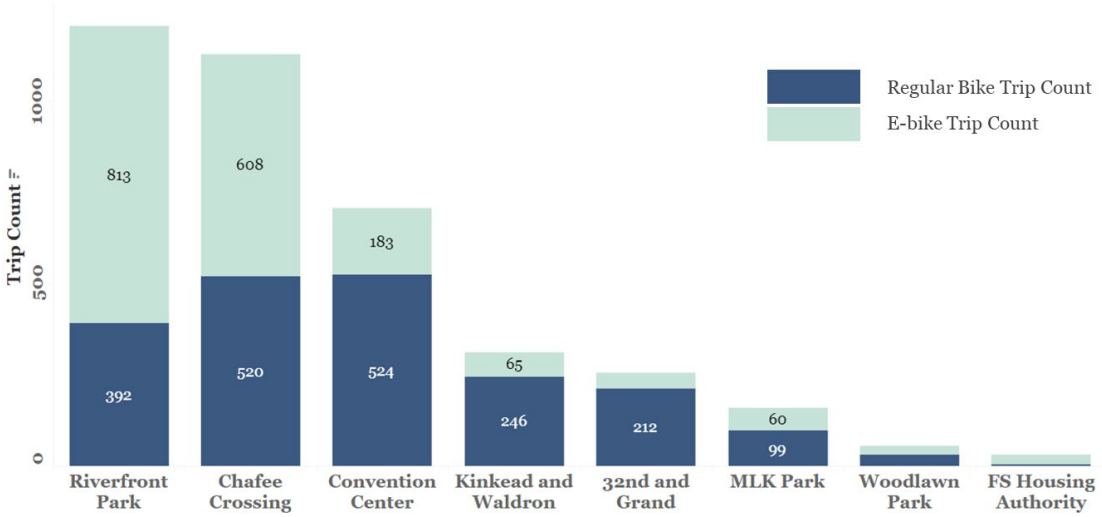

Figure 7: Total number of trips at each station

Secondly, the trip rate (trips per day) was tracked for each station. The trip rate was calculated as the ratio of the total number of trips at a station and the number of days the station was in operation. A threshold value of 1 trip per day was selected to identify underperforming stations. Based on this metric and the selected threshold followed by feedback received from FGDs, three stations (Mercy Hospital, OK Foods, North Point-Clayton Heights) were relocated in November 2022.

Thirdly, the number of trips per unique users was tracked for each station **(figure 8)**. The motivation behind tracking this metric was to identify stations which had frequent users. From **figure 8**, it can be observed that Chafee Crossing and Kinkead & Waldron are the stations with a high number of trips per unique user. Though Kinkead & Waldron has a lower number of total trips compared to the top three stations **(figure 7)**, the higher number of trips per unique users at this station indicates that many of them are frequent users. These frequent users may consist of users from low-income and carless households, which the bike sharing system intends to mobilize.

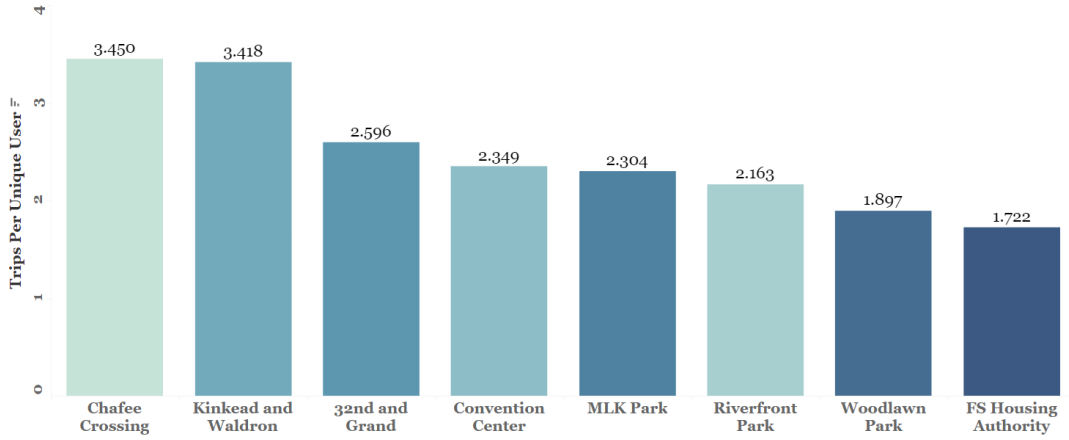

Figure 8: Trips per unique user at each station

8.2 Trip End Survey Data

The trip end survey dataset was analyzed to get an overview of the demographic characteristics of the users of RIDE 4 SMILIES. The analysis also led to some interesting insights into the travel behavior of the users from different demographic groups.

User demographics and trip share

We added this data collection option on the mobile application in the first quarter of 2023 and received responses for about 600 trips. These 600 survey responses were provided by 272 unique users/respondents. 58% of these users/respondents were female, 38% were male and 4% were from other genders. We found that a higher number of female users took the survey compared to male users. However, the smaller number of male survey respondents completed more trips than the female users. We also broke down the share of respondents and the trip share of users by income. We observed that 52% of respondents were from low-income households.

Travel behavior

The trip end survey asked the users about the purpose of the trip they completed. We aggregated their responses into six different categories namely, recreation, religious & others, shopping & dining, mixed, social, work. Among the 600 trips that got survey responses, the most common trips purposes were recreation (80.69%), religious & others (8.8%), shopping & dining (6.22%) (figure 11 left). This indicates that most of the users of the bike sharing system use the bikes for recreational trips, which is aligned with the reports from other small- and large-scale bike sharing programs. However, when the trip purpose of carless users was analyzed, it was found that their trips were more evenly distributed among different purposes **(figure 9 right)**. This signals that the bike sharing system was able to improve the accessibility of carless individuals and connect them to a wide range of amenities within the city.

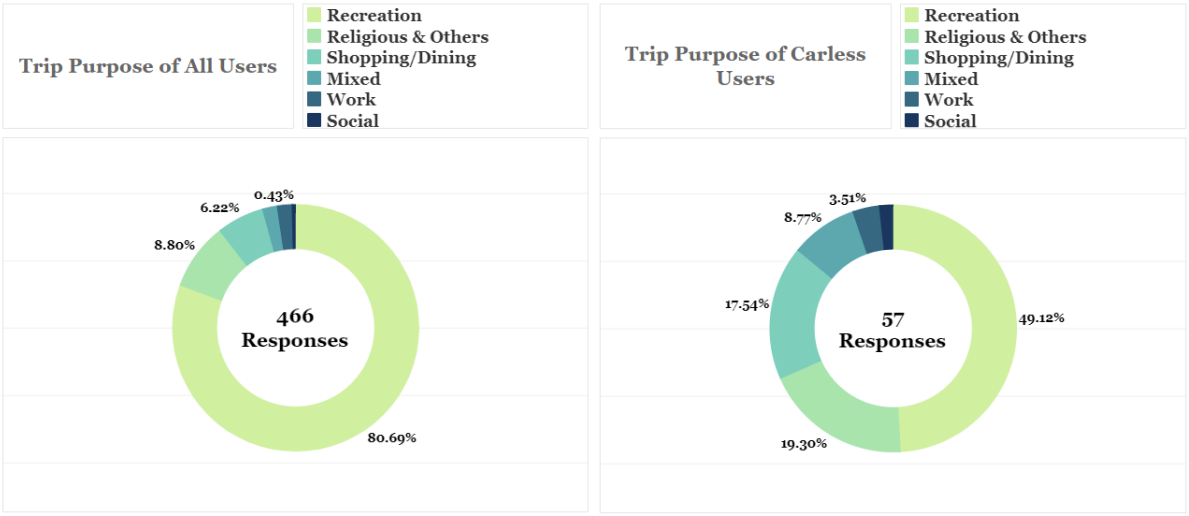

Figure 9: Distribution of trip purpose for all users (left) and carless users (right)

9. PHASE VI: REPORT

We intend to develop and publish a set of generalizable guidelines, tools, and curricula for international dissemination. The guidelines target community-based bike share systems that are equitable, sustainable, financially sound, and operate within a diverse transportation network. We are working with civic partners and citywide agencies to translate project lessons derived from pilot locations into the design, implementation, and deployment of bike share services in neighborhoods across the city.

10. CONCLUSION

Fort Smith, AR posits unique characteristics to carry out the project including below national average per capital income, above national average share of carless households, weak connections between housing and transportation, limited but only public transit that run limited hours only on weekdays. All these make it difficult for many low-income and/or rural households to access jobs and services. Local employers also find it difficult to draw workers from the surrounding area. Our project is built on a Community-Based Participatory Action Research (CBPAR) approach that brings together academic researchers, community representatives, and industry partners. Bringing together all three groups is crucial for designing

and deploying a SMM system that serves the needs of our local communities. Our civic partners (the City of Fort Smith and Frontier MPO) have expressed a critical and urgent need to address context-specific integration of SMM, to develop a practical business model, design operational and system characteristics tailored to the needs of the community, and to determine the contexts under which existing, planned, and needed bike infrastructures affect the success of SMM systems.

A community transportation needs assessment survey, conducted during the initial phase of the project, found that more than 50% of respondents reported challenges accessing transportation to travel to work/places every day. For lower-income populations (Annual household income <$34,000), this rose to 65% with many reporting that they do not own a car or are challenged by limited public transportation option. Further, many of these communities are living in food deserts and have limited access to education and healthcare. Overall, the study area has above-average levels of at-risk, transportation-disadvantaged residents [38]. Moreover, our survey found that more than 70% of low-income (more than 50% overall) people are interested in using shared micro-mobility in Fort Smith. However, like other small- and mid-sized cities and rural communities, they are struggling to attract micromobility providers- which have traditionally scaled their operations and business models to larger metropolitan areas.

Capitalizing the grant received from the NSF, the goal of the project was successfully achieved by fostering enhanced collaboration with pertinent stakeholders, including community leaders, city officials, and civic partners. This was accomplished through a series of workshops, questionnaire surveys to gain insights into community needs, and Focus Group Discussions (FGDs) aimed at refining the operational aspects once the bike share program became available for public use. The "Ride 4 SMILIES" program commenced with an initial fleet of 40 traditional pedal-powered bicycles distributed across eight stations. These stations were strategically located in neighborhoods with limited transportation options and near frequently utilized transit stops, a decision informed by all the stakeholders from Fort Smith. As demand for the service grew, 20 of the traditional pedal bikes were replaced with 20 electric-assist bicycles, further enhancing the program's accessibility and functionality. FGDs involving both users and non-users prompted station relocation and the addition of virtual bike stations after a year of operation. They also contributed to pricing plan development, future expansion strategies, expanded social media marketing, and the introduction of Radio Frequency Identification (RFID) cards for residents without smartphones or traditional banking options. The bike share program empowered users to share real-time feedback through quick surveys after each trip. This feedback encompassed overall experiences, bike availability, electric-assist bike battery status, and station interactions. This user-centric approach extended from station selection to program operation and maintenance. To enhance accountability and sustainability, the City of Fort Smith collaborated closely with relevant stakeholders throughout the project and hired a mobility coordinator. The coordinator's role is to ensure that the program aligns with user needs and remains sustainable in the long term. The project acknowledges that a more robust initial marketing effort could have boosted user adoption during the program's early months. In 2024, "Ride 4 SMILIES" enters its third year of operation, successfully addressing the transportation needs of residents seeking alternative options. Presently, approximately 60% of trips are taken by residents from low-income communities, with 14% of them lacking access to private vehicles. The program plays a crucial role in catering to carless individuals, enabling them to fulfill various trip purposes,

including recreation, religious activities, grocery shopping, and commuting to work. A detailed evaluation of the project is currently underway highlighting changes in transportation habits and other direct and indirect benefits.

Leveraging CBPAR approach, we generated evidence from community-level, user-led initiatives that will inform cost-effective policies and strategies for small and mid-sized cities and planning agencies who seek to leverage bike share system while ensuring equitable distribution of these services. The lack of biking infrastructure in Fort Smith appeared as a barrier for shared bike share system deployment. Many of the communities are located on state and county roadways that were built to design standards that favor high-speed motorized traffic, resulting in a system that makes walking and cycling less safe and uncomfortable. To increase the appeal and usage of SMM services in small- and mid-sized cities, we emphasize the need for communities to focus on building safe infrastructure to support micromobility. Currently, cities use a top-down decision-making approach to prioritize infrastructure investment decisions. Since the current top-down decision-making approach to prioritize infrastructure decision mostly relies on the presuppositions of planners and city officials, the outcomes sometimes fail to balance the needs of vulnerable road users (e.g., active transportation users) with others (e.g., car-owners). Our approach acknowledges thoughtful adoption of novel community engagement methods that can address biases in existing infrastructure gap analysis and thereby produce roadway infrastructure that safely, effectively, and successfully accommodates all road users. Nevertheless, embarking on a project of this magnitude within a city such as Fort Smith, AR, presented its unique set of challenges. One of the primary hurdles we encountered was effectively marketing and promoting the bike share program to the local community. Despite our best efforts, reaching potential users and conveying the benefits of the program proved challenging, particularly in a small city where traditional marketing channels may have limited reach. Engaging with and reaching out to residents to raise awareness about the bike share program presented another obstacle. Building trust and enthusiasm within the community required extensive outreach efforts, including campaigns, community events, and partnerships with local organizations. The onset of the COVID-19 pandemic introduced unforeseen challenges and disruptions to our implementation efforts. Public health concerns and restrictions limited opportunities for in-person engagement and events, complicating our outreach strategies and delaying program launch plans. Securing local support and buy-in for the bike share program was essential for its success. However, gaining the support of key stakeholders, such as city officials, business owners, and community leaders, proved to be a complex process requiring extensive collaboration. Looking ahead, the program's sustainability will hinge significantly on the promptness of repair and maintenance work, with a growing reliance on local initiatives for its continued success.

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