

## **BEHIND THE WHEEL: FEMALE GIG DRIVERS’ PERSPECTIVES ON AUTISM SPECTRUM DISORDER IN RIDE-SHARING TRANSPORTATION**

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### **ABSTRACT**

*The increasing reliance on e-hailing services by vulnerable populations highlights a gap in understanding the experiences of gig drivers who transport passengers with autism spectrum disorder (ASD). ASD is a neurodevelopmental condition associated with communication difficulties, sensory sensitivities, and repetitive behaviors, often requiring tailored support during transit. In Malaysia, Jom Makcik, a women-led social enterprise that provides travel companionship services for women, children, the elderly, and individuals with special needs. This qualitative study explores the lived experiences, challenges, and coping strategies of female gig drivers transporting both ASD and neurotypical passengers. Employing a Husserlian phenomenological approach, two online focus group discussions were conducted with ten Jom Makcik drivers, eight of whom had direct experience with ASD passengers. Thematic analysis revealed five themes: anticipating unpredictability, interpreting silence, navigating safety risks, maintaining routine, and managing emotional strain. Findings suggest that while drivers adapt through experiential learning and communication with parents, these measures remain inadequate without structured training and institutional support. The study emphasizes the need for inclusive policies and ASD-informed training tools to ensure safe, dignified, and equitable transport for all passengers within Malaysia’s gig economy.*

*Keywords: Autism spectrum disorder; gig drivers; ride-sharing transportation; challenges; qualitative study*

### **INTRODUCTION**

The emergence of e-hailing services has reshaped the transportation landscape worldwide, offering flexible, on-demand alternatives to traditional taxi and public transport systems (Mahayuddin, 2025). In Malaysia, platforms like Jom Makcik have carved a niche within this industry by targeting underserved populations, particularly women, children, the elderly, and people with disabilities, through a women-led network of gig drivers (Sazlina, 2024). As reliance on these services increases, particularly among vulnerable groups, there is an urgent need to investigate how service providers, especially female drivers, navigate the unique challenges of transporting

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neurodivergent passengers, including individuals diagnosed with autism spectrum disorder (ASD) (Dickerson et al., 2024; Shaheen et al., 2024).

Autism spectrum disorder is a lifelong neurodevelopmental condition characterized by persistent challenges in social communication, alongside restrictive and repetitive behaviors and heightened sensory sensitivities (Lord et al., 2018; Khalifeh et al., 2016). These characteristics make routine public transportation systems, which often involve loud environments, crowded spaces, and unpredictable conditions, unsuitable or even distressing for many individuals on the spectrum (Davidson & Henderson, 2010). Consequently, many individuals with ASD, particularly children and adolescents, depend heavily on caregivers or private transport services to maintain their daily routines. This dependence, however, imposes both logistical and emotional burdens on families and brings new responsibilities to transportation providers who may lack specific training in neurodiverse needs (Lubin & Feeley, 2016).

Despite growing discourse around inclusive mobility and accessible urban planning, the perspectives of transportation service providers, especially gig workers, remain vastly underrepresented in the academic literature. This is particularly true for drivers who engage with passengers with ASD (Sannon & Cosley, 2022). While the role of caregivers and educators in supporting individuals with ASD is well documented, the everyday practical experiences of e-hailing drivers, who often act as the first line of public interaction for neurodivergent individuals, are not well understood. This knowledge gap is significant, considering that gig drivers are increasingly relied upon to provide essential transport services, often without the benefit of formal education, institutional support, or standardized training in special needs care (Carey et al., 2024).

Jom Makcik, a women-led social enterprise, provides a unique context for such inquiry (Sazlina, 2024). The platform not only caters to passengers with special needs, including children with ASD, but also emphasizes safety and cultural appropriateness by assigning female drivers. However, this model places additional emotional and occupational burdens on drivers, who must manage behavioral unpredictability, non-verbal communication, sensory sensitivities, and legal concerns such as seatbelt compliance, all within the constraints of a moving vehicle. Furthermore, the gendered nature of gig work introduces additional dynamics, including emotional labor, personal safety, and cultural expectations, which may shape how female drivers interpret and perform their roles (James et al., 2022).

Moreover, while much of the existing transport research focuses on operational efficiency, infrastructure, or passenger satisfaction, little attention has been paid to the cognitive, emotional, and behavioral adaptations made by drivers themselves, especially when transporting neurodivergent individuals (Olatona et al., 2024). Female gig drivers may face not only technical but also interpersonal and psychological challenges. These include managing anxiety when transporting unfamiliar passengers, interpreting non-verbal cues, responding to resistance or meltdowns, navigating communication breakdowns, and making real-time safety decisions, sometimes with limited information (Kwan et al., 2022).

This study addresses two major gaps in the literature: (1) the absence of data on the lived experiences and perceptions of female gig drivers who transport passengers with ASD, and (2) the lack of insight into the informal, experience-based coping strategies these drivers employ in the absence of structured training. The study is framed through a phenomenological lens to capture the essence of these lived experiences in the most authentic way possible.

Specifically, the study investigates the challenges experienced by Jom Makcik's drivers when transporting both ASD and neurotypical passengers, and the solutions or adaptations they have developed to manage those situations. By incorporating the voices of drivers with both direct and indirect experience of transporting ASD passengers, this research offers a more comprehensive understanding of preparedness, emotional readiness, and expectations among drivers (Rodier et al., 2020). It further highlights how informal strategies, such as environmental adjustments, communication with caregivers, or emotional self-regulation, can serve as immediate but insufficient substitutes for formal training (Olatona et al., 2024).

In doing so, this study contributes to a more inclusive vision of transportation planning, one that not only focuses on the needs of neurodivergent passengers but also recognizes and empowers the drivers who serve them. These findings have direct implications for platform design, policy development, training module creation, and broader advocacy for inclusive, sensory-aware, and safe mobility-assist services in Malaysia and beyond.

## METHODS

### Research Design

The study received ethical approval from the Universiti Kebangsaan Malaysia Research Ethics Committee (JEP-2024-1107). Additionally, formal permission was obtained from the Jom Makcik platform to conduct the study with their drivers. All participants were provided with detailed information about the research objectives, voluntary participation, confidentiality, and the right to withdraw at any point. Informed consent, both verbal and written, was obtained from all participants before the data collection sessions commenced.

### Research Population

This study adopted a qualitative research approach using a phenomenological design to explore the lived experiences of female gig drivers transporting passengers with autism spectrum disorder (ASD). Specifically, a Husserlian phenomenological lens was employed to capture the essence of the participants' subjective experiences, thoughts, and emotional responses. This approach was chosen due to its strength in uncovering complex human experiences and subjective perceptions, particularly in under-researched social phenomena such as neurodivergent transport services within the e-hailing sector (Hammarberg et al., 2016; Creswell & Poth, 2016).

### Participants and Sampling

Ten female drivers from Jom Makcik, aged between 32 and 55 years, were purposively selected to participate in this study. Purposive sampling was employed to ensure that the participants represented a range of driving experiences and levels of exposure to passengers with autism spectrum disorder (ASD), reflecting best practice in qualitative inquiry where participants are deliberately chosen for their relevance to the research aims (Ashenfelter et al., 2022).

Inclusion and exclusion criteria were established to ensure that participants were appropriate for the study's objectives. Drivers were eligible for inclusion if they: (i) were registered female drivers with Jom Makcik; (ii) had been actively providing driving or companion services for at least three months; and (iii) were able to communicate in Malay or English to participate in an in-depth interview. Drivers were included regardless of whether they had prior experience transporting passengers with ASD, as the study sought to examine both lived experiences and anticipatory perspectives. Drivers who were inactive at the time of data collection, had less than three months of service experience, or were unable to provide informed consent were excluded. These criteria ensured that the sample comprised participants with adequate operational familiarity while maintaining methodological rigour.

Of the ten participants recruited, eight reported having direct experience transporting passengers diagnosed with ASD, while two indicated that they had not yet encountered such passengers in their work. The inclusion of drivers without prior experience was intentional and theoretically meaningful, as their participation enabled the study to capture not only the real-world challenges faced by experienced drivers but also the expectations, assumptions, and perceived preparedness of those who had yet to transport neurodivergent passengers. Research in mobility and caregiving contexts highlights that anticipatory concerns, confidence, and emotional readiness can significantly influence the quality of service provided to neurodivergent individuals (Myers et al., 2019). Including this subgroup therefore offered a critical comparative perspective to identify potential training gaps and preparedness needs within the broader workforce.

Drivers with direct experience were able to share concrete accounts of the strategies they employed, the difficulties they encountered, and their emotional and practical responses in real-world contexts (Dirix et al., 2021). Meanwhile, the perspectives of those without direct exposure provided valuable insights into expectations, concerns, and perceived readiness when faced with the possibility of transporting passengers with ASD, echoing prior research that underscores the importance of preparation and emotional resilience in service settings involving neurodivergent individuals (Myers et al., 2019).

### Data Collection

Two online focus group discussions (FGDs) were conducted via Google Meet, each lasting approximately three hours to allow sufficient time for in-depth dialogue and participant reflection. The use of online FGDs has become increasingly common in qualitative research, offering flexibility, accessibility, and opportunities for participants to engage in a safe and familiar environment, while also requiring careful consideration of confidentiality and group dynamics (Halliday et al., 2021). A semi-structured discussion guide, consisting of five open-ended questions supplemented by probing prompts, was employed to provide structure while still allowing participants to express diverse perspectives freely, a strategy widely recognized as enhancing the richness of qualitative data (Gill & Baillie, 2018). Each discussion was audio-recorded, transcribed verbatim, and anonymized to ensure both accuracy of data representation and adherence to ethical principles of confidentiality, consistent with best practices in focus group methodology (Sim & Waterfield, 2019).

## Data Analysis

Thematic analysis was conducted manually, following Braun and Clarke's established six-phase framework, which emphasizes flexibility while maintaining systematic rigor in identifying and interpreting patterns of meaning within qualitative data (Braun & Clarke, 2023). The process began with open coding, where meaningful units of text were identified and labeled, before being iteratively clustered into broader themes that captured shared concepts and experiences. Reflexivity was integral throughout the analysis, requiring the researchers to critically reflect on their own assumptions and positionality in shaping interpretations, while peer review provided an additional layer of credibility by ensuring that codes and themes were consistently and transparently applied (Braun & Clarke, 2019). Furthermore, to enhance the interpretative depth of the analysis, attention was paid not only to the verbal content of transcripts but also to emotional tone and non-verbal cues noted during transcription, practices that strengthen contextual understanding and enrich the thematic narratives (Byrne et al., 2022).

## RESULTS AND DISCUSSION

The results of this study provide valuable insights into the lived experiences of female gig drivers working on the Jom Makcik platform, particularly in relation to transporting passengers with autism spectrum disorder (ASD). Thematic analysis, following Braun and Clarke's framework, enabled the systematic identification of patterns across narratives while allowing flexibility to capture both shared and unique perspectives (Braun & Clarke, 2006; Braun & Clarke, 2023). The analysis highlights not only the unique challenges encountered when transporting neurodivergent passengers but also the adaptive strategies drivers employ to ensure safety, comfort, and effective communication. Consistent with previous research that emphasises the importance of preparedness and caregiver-driver collaboration in disability transport (Bezyak et al., 2019), the findings also capture broader issues faced with neurotypical riders, offering a comparative perspective. To present these insights systematically, the findings are organised into five overarching themes: (1) pre-ride preparation and anticipating the unpredictable, (2) interpreting the silent and adjusting the environment, (3) driving on edge and safety risk management, (4) when routine is everything, and (5) reflective practice and emotional self-regulation.

Table 1. Descriptive Data of the Demographics

Participants	Age	Work experience as female gig worker	Experience with ASD passenger
P1	55	8 years	Yes
P2	32	7 months	Yes
P3	44	1 year 5 months	Yes

P4	50	3 years	Yes
P5	42	8 years	Yes
P6	49	1 year 15 days	No
P7	50	7 years	Yes
P8	47	4 years	Yes
P9	41	1 year 4 months	Yes
P10	43	3 years	No

Table 1 presents the demographic profile of the ten female gig drivers who participated in this study. The participants ranged in age from 32 to 55 years, reflecting a mid-adult cohort commonly engaged in care-related gig work. Their work experience as drivers varied considerably, from as little as 15 days to as long as eight years, highlighting a spectrum of novice and seasoned perspectives within the sample. Notably, eight of the drivers reported having direct experience transporting passengers with autism spectrum disorder (ASD), while two had not yet encountered such passengers. This distribution was intentional, allowing the study to capture both the practical realities of drivers with first-hand ASD transport experience and the expectations or concerns of those without. Such variation enriches the dataset by enabling comparative insights into preparedness, emotional readiness, and the perceived challenges of working with both neurodivergent and neurotypical passengers. Prior research has shown that socio-demographic factors such as age, gender, and driving experience significantly shape both transport behaviour and responses to passenger needs, reinforcing the importance of demographic context in interpreting qualitative findings (Muslim et al. 2021).

### Theme 1: Pre-Ride Preparation and Anticipating the Unpredictable

Participants emphasised the importance of preparation before transporting passengers with autism spectrum disorder (ASD). Many drivers described contacting parents or caregivers in advance to gather essential information about a child's habits, triggers, and preferred modes of communication. This proactive step reduced uncertainty and allowed drivers to mentally rehearse potential scenarios, thereby fostering a sense of readiness. Such anticipatory communication not only helped drivers manage their own anxiety but also enabled them to develop personalised strategies for managing passenger needs.

“Before pickup, I’ll ask questions like, ‘can he talk?’, ‘what’s his habit?’ I’ll mentally prepare myself so I won’t get shocked.” (P1)

“Before the ride, I’ll review in my head what to expect ... like if the child has certain triggers, I plan how I’ll respond.” (P4)

Despite these efforts, unpredictability remained a central challenge, with drivers frequently encountering sudden outbursts, agitation during traffic stops, or restlessness caused by even minor environmental changes. This highlights the tension between preparation and the inherent behavioural variability characteristic of ASD.

“He throws a tantrum if the car is stopped for too long... even a minute is a long time for him.” (P9)  
“From the back seat, he suddenly jumped forward. I was surprised.” (P4)

Prior studies similarly demonstrate that access to pre-journey information supports both preparedness and reduced stress when working with individuals with disabilities (Bezyak et al., 2019), while research on ASD transport confirms that behavioural unpredictability, such as resistance to routine disruptions or environmental stimuli, is a common challenge requiring continuous adaptation from service providers (Lubin & Feeley, 2016).

## Theme 2: Interpreting the Silent and Adjusting the Environment

A recurring challenge described by participants was the difficulty of interpreting non-verbal or atypical communication patterns among passengers with autism spectrum disorder (ASD). Several drivers noted that their passengers often used incomplete sentences, unclear speech, or offered minimal verbal reciprocity, which limited opportunities for conventional interaction. As one driver observed, “The whole journey, the child was silent... if you asked, they would just say ‘umm’ or ‘aaa’.” (P2). In such situations, drivers had to rely heavily on interpreting emotional cues such as body language, tone, or subtle behavioural shifts, to gauge passenger comfort and needs. This aligns with Davidson and Henderson’s (2010) findings that neurodivergent individuals often communicate through alternative, less verbal channels, requiring heightened sensitivity from caregivers and service providers.

To mitigate these challenges and create a more supportive travel environment, drivers developed informal strategies of environmental adjustment. Many chose to reduce sensory stimulation by lowering noise levels, avoiding unnecessary conversation, or maintaining smooth and predictable driving patterns. These adjustments aimed to minimise stressors that might otherwise escalate into distress. As one driver explained, “If the passenger wants a quiet ride, I’ll drive calmly and not play music.” (P1). Another driver adopted proactive sensory regulation by providing familiar comfort objects: “I put soft toys in the car, and the child just played quietly.” (P2). Such practices echo the work of Williams et al. (2024), who demonstrated that small environmental modifications, such as controlling sound, light, and tactile inputs that can significantly enhance emotional regulation passengers with ASD. Furthermore, these strategies are consistent with literature on inclusive mobility, which highlights the role of low-stimulation environments in reducing travel anxiety for individuals with sensory sensitivities (Falkmer et al., 2004).

Overall, the drivers' accounts reveal how micro-level environmental adaptations, though informal and improvised, are crucial in bridging communication gaps and fostering a sense of safety and comfort for neurodivergent passengers. Yet, these practices also highlight the absence of formal training or guidelines, leaving drivers to rely primarily on empathy, observation, and trial-and-error strategies.

### Theme 3: Driving on Edge - Safety Risks and Techniques

Ensuring passenger safety emerged as one of the most pressing concerns for drivers when transporting passengers with autism spectrum disorder (ASD). A recurring issue was seatbelt resistance, which often placed drivers in a difficult position between meeting legal requirements and avoiding passenger distress. As one participant expressed, "Wearing a seatbelt is mandatory, but what should we do with this autistic child who has difficulty accepting instructions?" (P4). To address these situations, drivers employed precautionary measures such as activating child locks, securing windows, and maintaining heightened vigilance throughout the journey. Such practices reveal the constant negotiation between compliance with traffic laws and the need to protect the emotional well-being of neurodivergent passengers.

In addition to these structural safety strategies, drivers also described using behavioural monitoring techniques to reduce risks. They carefully observed body language and subtle shifts in mood to anticipate agitation or resistance before it escalated. One driver recounted, "I lock the doors in advance...one child once tried to open the door in the middle of the road." (P5). Proactive measures such as these highlight the drivers' reliance on situational awareness and quick adaptation to prevent accidents. Research has shown that children with ASD are more likely to struggle with safety practices, including resistance to seatbelt use and increased impulsivity during travel, which underscores the need for enhanced vigilance from caregivers and transport providers (Falkmer et al., 2004). Similarly, Lubin & Feeley (2016) noted that successful transport of passengers with ASD often requires a combination of environmental control and behavioural anticipation to minimise risk.

Overall, these findings illustrate the precarious balance female gig drivers must maintain: complying with legal safety standards, preventing potential harm, and simultaneously avoiding emotional escalation. Without formalised training or support, these drivers rely heavily on intuition, experiential learning, and self-taught techniques to navigate safety risks in unpredictable circumstances.

### Theme 4: When Routine is Everything - Navigating Change

Participants consistently described the centrality of routine in supporting the comfort and stability of passengers with ASD. Many drivers observed that their passengers relied heavily on predictable routes, becoming anxious or distressed when even minor deviations occurred. This was reflected in comments such as, "If I take a different road, they get uncomfortable. So I stick to the same path." (P4). In such cases, drivers adopted a strategy of maintaining route familiarity wherever possible and proactively informing parents about any necessary changes in advance to reduce



passenger anxiety. As one participant explained, “I always take the same road, and if I need to change, I’ll tell the parent first.” (P8).

The sensitivity of ASD passengers to environmental and situational change was further illustrated by accounts of seemingly small deviations provoking disproportionate reactions. For example, one driver recalled, “‘Red stop’—he kept saying it until we reached home.” (P1). This highlights how heightened attention to detail and adherence to routine can shape the travel experience for neurodivergent individuals. Prior research has demonstrated that disruptions to routine or changes in expected patterns can trigger behavioural distress and repetitive responses in passengers with ASD, underscoring the need for predictability in mobility contexts (South et al., 2005). Similarly, Lubin & Feeley (2016) reported that route consistency and advance communication with caregivers are crucial strategies for reducing anxiety and improving cooperation during travel for individuals on the autism spectrum.

These findings highlight the adaptive role of female gig drivers in recognising and respecting passengers’ reliance on routine. By actively adjusting their driving practices and communication strategies, drivers were able to mitigate distress, though often at the expense of flexibility in route choice or efficiency. This reliance on informal strategies underscores both the resilience of drivers and the need for institutional frameworks that can better support neurodivergent mobility needs.

### Theme 5: Reflective Practice and Emotional Self-Regulation

A central theme that emerged was the emotional labour involved in transporting passengers with autism spectrum disorder (ASD). Many drivers described experiencing significant emotional strain, particularly during their initial encounters when they lacked prior ASD-specific experience. Feelings of anxiety and fear of mishandling situations were commonly reported, as drivers worried about inadvertently triggering distress or being unable to respond appropriately. Over time, however, repeated exposure helped drivers to build confidence, enabling them to learn through observation and trial-and-error. As one driver explained, “Every trip is a lesson. I remember what worked and what didn’t, then I adjust.” (P9).

Reflective practice became a vital mechanism for coping, allowing drivers to critically evaluate their past experiences and adapt their strategies in subsequent rides. This iterative process helped them move from rigid, pre-planned responses to more flexible, child-led approaches that aligned better with the needs of individual passengers. Another participant emphasised the importance of managing one’s own reactions, noting, “You must control your own emotions first. If we panic, they’ll sense it too.” (P7). Such reflections underscore the interdependence between the driver’s emotional regulation and the passenger’s comfort, suggesting that self-control plays a critical role in maintaining a calm and safe travel environment.

This reliance on reflective learning resonates with Fusch and Ness (2015), who argue that experiential practice and self-reflection are essential in building competence in service roles. Moreover, these findings echo the broader disability transport literature, which highlights how providers often compensate for the lack of formal training by developing adaptive, empathy-driven strategies in real time (Bezyak et al., 2019; Lubin & Feeley, 2016). The drivers’ accounts, therefore, illustrate not only their resilience but also the structural gaps in institutional support,

reinforcing the need for formalised training and policy frameworks that prepare drivers to navigate the emotional and behavioural complexities of transporting neurodivergent passengers.

### Further Discussion

This study explored the lived experiences of female gig drivers on the Jom Makkik platform, focusing on their interactions with passengers with autism spectrum disorder (ASD). The findings show that drivers developed a range of adaptive strategies to manage safety, comfort, and communication, despite limited formal training. Their accounts reflect a balancing act between meeting legal obligations, responding to unpredictable behaviours, and maintaining emotional composure, highlighting both the challenges and resilience inherent in this work.

A central thread running across the five themes is the drivers' reliance on informal, experience-based strategies. While prior studies emphasise the value of obtaining pre-journey information to reduce anxiety and improve preparedness (Bezyak et al., 2019; Lubin & Feeley, 2016), drivers in this study demonstrated that information alone was insufficient. Instead, they combined anticipation with real-time adjustments, such as modifying environmental stimuli (Davidson & Henderson, 2010; Williams et al., 2024) or deploying safety measures like child locks when risks emerged (Falkmer et al., 2004). These findings reinforce the view that flexibility and vigilance are indispensable when working with neurodivergent passengers.

At the same time, the emotional labour described by participants, ranging from nervousness to reflective learning. This illustrates the importance of self-regulation and iterative adaptation. As (Fusch and Ness, 2015) argue, experiential reflection can substitute for formal instruction, but it also places the burden of skill acquisition on individual drivers. This resonates with broader critiques of gig work, where workers often fill institutional gaps with personal resilience rather than structured support (Sannon & Cosley, 2022).

Notably, drivers also reported challenges with neurotypical passengers, underscoring that the emotional and logistical demands of gig driving extend beyond disability contexts. This broadens the implications of the study: female gig drivers operate within a system that requires constant adjustment yet provides few resources to support such work. Without systemic interventions, reliance on empathy-driven, informal strategies risks both driver burnout and inconsistent passenger care.

In line with prior research on inclusive mobility (Lubin & Feeley, 2016; Bezyak et al., 2019), this study underscores the urgency of institutionalising support mechanisms. These could include ASD-specific training modules, caregiver-driver communication features within ride-hailing platforms, and policy frameworks that acknowledge the unique demands of transporting neurodivergent individuals. As highlighted by Ma et al. (2025), gig work design must move beyond short-term adaptability and incorporate structural safeguards that empower workers to meet diverse passenger needs sustainably.

## CONCLUSION

This study provides important insights into the lived experiences of female gig drivers on the Jom Makcik platform when transporting passengers with autism spectrum disorder (ASD). The findings highlight the dual reality of significant challenges—such as communication barriers, behavioural unpredictability, safety concerns, and emotional strain—alongside the resilience and adaptability drivers display through informal strategies like mental preparation, caregiver communication, environmental adjustments, and reflective practice. These experiences underscore both the potential and the limitations of experiential learning in the absence of structured training, and they point to the urgent need for formalised ASD-specific modules, in-app caregiver-driver communication features, and institutional recognition of the emotional labour performed by drivers.

This study is not without limitations. The small sample size and focus on a single platform restrict the generalisability of findings, and the reliance on self-reported experiences may have introduced bias. Future research could expand to include male drivers, cross-platform comparisons, or perspectives from caregivers and ASD passengers themselves to enrich the understanding of inclusive mobility. Longitudinal or intervention-based studies testing the impact of structured training or platform-level policy changes would further strengthen evidence for practice. By addressing these gaps, future work can move beyond documenting lived experiences to actively shaping safer, more supportive, and inclusive transport systems for neurodivergent communities.

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