

Factors Surrounding Child Seat Usage in Rideshare Services

September 2019 | Final Report



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Introduction

Ridesharing services have skyrocketed in popularity over the past several years, with estimates of usage in the U.S. growing from single-digit percentages in 2014 to at least 24% in 2018 [1]. In many cities, vehicle ownership is decreasing (e.g., [2]), and research has suggested that this ownership decrease may be causally associated with an increase in ridesharing [3]. The convergence of these trends may have serious implications for child passenger safety as families begin to use rideshares as means of family transportation. Properly used child restraints have been found to be highly effective at reducing injury and death in crashes [4], [5]; however, research has found that taxicabs are associated with substantially lower child seat usage than personally owned vehicles [6], and it is a reasonable supposition that rideshare vehicles may follow this trend. Complicating matters, in many localities, taxicabs are not required to have child seats, while rideshare vehicles are generally required to follow the same child passenger regulations as standard vehicles, as they are personally-owned.

Background

The issue of transporting children safely in rideshare vehicles raises questions regarding how parents/caregivers/guardians (the term “parent” is used as a collective generic term throughout), rideshare drivers, and rideshare companies deal with the practical aspects of child safety seat installation and use as this service increases. Car seats, especially infant seats and convertible seats designed for toddlers and small children, can be bulky, heavy, and challenging to handle outside of vehicles. Inside vehicles, the range of options and variables for proper installation can be as varied as the combined array of vehicles and car seats available, and parents may not be intimately familiar with installation options for their children’s seats (for example, when Lower Anchors and Tethers for Children [LATCH] anchoring system components are not available). When air travel is involved, which is often a reason for using rideshare vehicles, parents may not have their usual car seats available. In cases where multiple children need to be transported, complexity is magnified.

Child passenger safety laws are currently set on a state-by-state basis and are not controlled by the federal government. Thus, when parents travel to another state, they may not be familiar with the pertinent local laws. This is particularly relevant to travel in for-hire vehicles, as a number of states across the U.S. have child seat rule exemptions for taxicabs and other livery vehicles. These exemptions may not generally apply to rideshare vehicles, but this distinction may often be confusing for passengers and drivers alike.

This range of factors poses a significant challenge to keeping children safe when traveling in rideshare vehicles, whether in-town for daily travel or when traveling out of state. As a foundational step to address the safety issues posed by the convergence of increasing rideshare usage and family transportation, researchers from the Virginia Tech Transportation Institute

(VTI) and Texas A&M Transportation Institute (TTI) teamed to investigate how and when parents are currently transporting their children in rideshare vehicles, how rideshare drivers have transported and are willing to transport children, what barriers exist to safe child transportation in this changing transportation economy, and ways to improve outreach to the public, rideshare drivers, and lawmakers.

The project comprised three research tasks followed by several integral outreach activities. The research tasks included:

1. A state-by-state review of child passenger safety regulations.
2. A series of focus groups comprised of rideshare drivers or parents who had used rideshare services.
3. A nationwide internet-based survey of parents of young children.

The goal behind the selection of these three tasks was for them to combine to provide a comprehensive overview of how parents and drivers are currently transporting children and what information is needed to ensure child passenger safety in a changing mobility landscape. The three research tasks are described in more detail in the Method section below.

After the three research tasks were completed, the project team conducted several Tech Transfer and Education and Workforce Development activities to improve outreach and disseminate the project's findings and action items, including development of an outreach website, numerous media interviews, and working alongside a major rideshare company to publicize the results of the study.

Method

Task 1: Literature and Law Review

Task 1, the initial phase of the study, began with a literature review using several databases and key search terms to seek out existing research findings pertinent to rideshare and child occupant protection. All relevant data were sorted and compiled into a comprehensive matrix as well as added to smaller, more specific matrices for each variable assessed. The results were summarized in a stand-alone literature review document (see Appendix B: Literature Review Document). Additionally, online sources (e.g., chat groups, forums) were used to discover “real conversations” about this issue, which then informed the development of focus group discussion guides. These reviews were conducted by Texas A&M University graduate and undergraduate students.

Concurrently, an extensive review of child restraint laws in the U.S. was conducted, including the age and/or size of children covered, the responsible party for compliance, and the applicability to rideshare vehicles. The goals of the law review were threefold: (1) to provide a comprehensive understanding of regulations across the nation that would enable informed development of questions for the following focus groups and surveys; (2) to provide a standalone document to serve as a reference for the variety of regulations across the country; and (3) to provide the

backbone for the outreach website developed in Task 4. The approach was to use state law databases and, where these were not available, to tap additional resources such as national databases (e.g., National Highway Traffic Safety Administration). A matrix was constructed to provide key elements of the laws of each state, with citations. The matrix was then used to cross-reference applicable laws within each state. This was done to determine how laws define responsibility for proper securement, use, and transport of children in child safety restraint systems in rideshare vehicles. This task was performed by an attorney who was staffed on the project at TTI.

Task 2: Focus Groups Method

For Task 2, we conducted a series of focus groups to get in-depth, interactive responses to fundamental questions about how parents use rideshares with children and how, and under what conditions, rideshare drivers transport child passengers. The research team conducted six focus groups in three Texas cities with three groups of parents and three groups of drivers to learn more about attitudes and practices regarding child safety in rideshare vehicles. All focus group protocols were approved by the Texas A&M Institutional Review Board.

Participants were recruited by posting flyers on various social media websites and e-mail lists, and through personal contact and word-of-mouth. The criteria for rideshare drivers were that they either currently drove or had recently driven for a rideshare company. The initial criteria for rideshare users required that they (1) were parents to car-seat-aged children, and (2) had used or considered using a rideshare service with or without their child/children. After conducting the first rideshare users focus group, the inclusion criteria were revised to require that participants had experience using a rideshare service at least once, with or without their children, and may or may not have considered rideshare use with their children. The participants were invited to take part in a discussion, lasting a maximum of 2 hours, that focused on the topic of child safety seat use in rideshare vehicles, and were compensated for their time. The discussion guide included the following:

Rideshare Drivers' Discussion Topics

- Experiences with rideshare driving
- Opinions about rideshare services and companies
- Experiences and opinions on transporting children in rideshare vehicles
- Knowledge about rideshare companies' policies and state laws regarding transporting children
- Recommendations regarding transporting children in rideshare vehicles

Rideshare Users' Discussion Topics

- Rideshare use
- Opinions about rideshare services and companies
- Experiences and opinions on transporting children in rideshare vehicles
- Personal use of child safety seats

- Knowledge of state laws regarding child passenger safety
- Recommendations regarding transporting children in rideshare vehicles

The discussions from the six focus groups were taped, transcribed verbatim, and summarized. Transcripts and observational notes were analyzed for noteworthy ideas, commonalities, and consensus, or lack thereof, for each topic.

Task 3: Nationwide Survey Method

The third task was designed to obtain a nationwide perspective on understanding rider and driver behaviors and attitudes, which was accomplished through the use of an online survey. This task was spearheaded by the VTTI team in partnership with the VT Center for Survey Research (VT CSR)¹. Survey development was led by VTTI and VT CSR with input from TTI. The survey sample targeted approximately 1,200 people parents of children up to the age of five, the age at which many children transition from harness child seats into booster seats. The purpose of the survey was to determine child seat usage practices, preferences, and experiences when parents travel with their children and utilize ride share services.

To enable the efficient recruitment of respondents, the project team engaged a survey sampling company, Survey Sampling International, to identify and contact prospective respondents on the team's behalf. Participants were randomly selected in targeted geographic areas in which the UberFAMILY car seat program was available, along with other areas of the U.S. All participants voluntarily elected to complete the survey and the protocol was approved by the Virginia Tech Institutional Review Board.

The survey was designed to take approximately 10–15 minutes to complete in order to maximize the amount of data collected while also minimizing intrusiveness. The online questionnaire elicited information about reasons for using or not using rideshare services, types of trips using rideshare services, car seat use in rideshare vehicles, and details of use, including confidence of car seat installation correctness, reasons for non-use of car seats in rideshare vehicles, and familiarity with state laws requiring car seats. The complete survey may be found in Appendix A: Nationwide Internet Survey.

Task 4: Technology Transfer and Education/Workforce Development

The final project task and primary technology transfer product was the development of an outreach website to provide information on child seat rules and regulations to parents and rideshare drivers. The need for this website was identified from the outputs of the focus groups and survey, which found significant confusion about regulations among members of the target groups. This confusion was reinforced by the findings of the regulations review that found significant discrepancies among

¹ While the VT CSR was involved in the design and initial data collection of this task, CSR itself ceased operations during the project and the majority of data collection and all analyses were completed by the VTTI team.

child passenger safety regulations across the country regarding who is responsible for providing and installing child seats and for securing children within them.

The website was intended to be user-friendly to increase understanding and awareness among members of the public. In addition, an important component of this task was to use multiple modalities to raise awareness of the site, including engaging in media outreach as well as working with a prominent ride-sharing industry partner to promote the website among its drivers and customers.

Results

Task 1 Results: Review of Literature and Child Restraint Laws

Previous research studies focusing on the topic of rideshare transportation and child passenger safety are scarce. An online survey conducted by the Pew Research Center in 2016 provided a foundation for further exploration [1]. That study found that only 34% of rideshare users in general, and 30% of users who were parents, believed ride-sharing was a safe method of transportation for children. (See Appendix B: Literature Review Document for the entire literature review).

The rideshare industry is typically not held to the same regulatory standards as the taxi industry, which has been found to be a point of contention both for consumers and legislative entities in decision-making regarding rideshare regulation. In the U.S., taxicabs are held to underwhelming standards for passenger safety, particularly for young children. Therefore, background research included looking at company policies at the two largest U.S. rideshare companies. With Uber’s UberFAMILY service, riders can request a car seat in the Uber vehicle. Because this program had been launched in four cities at the time of this Safe-D study, its policies were reviewed. Drivers participating in the UberFAMILY program are provided with training, informational materials and videos for the seat they carry. Drivers can assist in securing children in the seats provided, but Uber’s terms of service state that the company is not responsible or liable for any improperly installed seats or improperly restrained children. Lyft’s company policy states that their drivers do not provide car seats for young children and parents are responsible for providing their own.

There is no question that local and state laws transcend company policies regarding child passenger safety. However, the examination of laws throughout the U.S. revealed a wide variety of differences in child restraint requirements and very little that directly and specifically relates to requirements for car seat use in rideshare vehicles. As of the review, only Georgia made a distinction between rideshare and other for-hire vehicles in its legislation. In other states, child passenger laws specify the vehicles they apply to, and in many cases for-hire vehicles are exempted. Gaps in child passenger safety laws result when states do not specify a distinction between for-hire and rideshare vehicles. Appendix C: Child Safety Laws by State presents a matrix of state laws. Key points of laws regarding child age ranges, driver liability, and for-hire exemptions are presented by state in Table 1, Table 2, and Table 3, respectively.

Table 1. Laws by State for Seats by Child Age Range

Age Ranges Specified for Child Restraint	Type of Seat	States	Total
< 1 year	Rear-facing	AL, AK, CO, CT, IA, LA, NM, OR, SC, TN, VT, WI	12
< 2 years	Rear-facing	CA, NJ, OK, PA	4
< 3 years	Child seat	AK, CO, HI, KS, LA, MS, MO, NY, OH, PA, TN, WI	12
< 4 years	Child seat	AL, AZ, NJ, NM, OK, SD	6
4–7 years	Child seat	AZ, CO, HI, KS, LA, MO, MS, NM, NY, OH, OK, PA, WI	13
< 7 years	Child seat	CA, DE, DC, GA, IL, IN, KY, MD, MA, MI, MN, NC, OR, RI, TX, UT, VA, WA, WV, VT	20
< 8 years	Child seat	ME, NJ, TN, WY	4

Table 2. Driver Liability Regulations by State

Driver Liable for Proper Restraint of Child?	States	Total
Yes	AK, CA, CT, FL, KS, KY, MA, MS, NJ, NC, ND, OR, PA, RI, SD	15
No	AL, AZ, AR, CO, CT, DE, DC, GA*, HI, ID, IL, IN, IA, LA, ME, MD, MI, MN, MO, MT, NE, NV, NH, NM, NY, OH, OK, SC, TN, TX, UT, VT, VA, WA, WV, WI, WY	36
	*In GA, rideshare drivers are liable but taxi drivers are not	

Table 3. For-Hire Exemptions by State

For Hire Vehicles Exempt from Child Restraint Laws?	States	Total
Yes	AL, AZ, AR, CO, DE, DC, HI, ID, IL, IN, LA, ME, MD, MI, MN, MO, MT, NE, NV, NH, NM, NY, OH, OK, SC, TN, TX, UT, VT, VA, WA, WV, WI, WY	34
No	AK, CA, CT, FL, GA, IA* KS, KY, MA*, MS, NJ, NC, ND, OR, PA, RI, SD	17
	*In IA, for hire vehicles are not exempt, but the guardian is liable *In MA, taxis are exempt if not equipped with child restraint devices	

Task 2 Results: Focus Groups

In general, the focus groups revealed parents’ desire to use car seats in passenger vehicles, as evidenced by daily use in their own vehicles and recommendations by many to make them available in rideshare vehicles. However, the impracticality of using their personally-owned seats,

the unavailability of previously installed seats in rideshare vehicles, and the view of rideshare service as comparable to taxis or public transportation and for limited situational purposes, resulted in failure to use car seats for rideshare trips. Detailed focus group results are presented in Appendix D: Focus Group Findings.

Rideshare driver focus group participants shared a general lack of knowledge regarding their responsibility in the car seat equation. For several drivers, the issue had not been considered. Four of the 16 drivers in the groups had never given rides to children young or small enough that they might require a car seat, and several said they would not do so. Some said they would or would not provide rides to children depending on factors such as the age and size of the child or the nature of the situation. Drivers indicated a preference for not advising parents how to secure their children in the vehicle, including allowing improper use of seat belts, non-use, and parents holding the child in their lap. One of the 16 drivers had her own policy of not transporting children due to the added responsibility and liability. Most of the focus group driver participants did not know the requirements of the Texas law on child safety seat use or if/how it pertained to them when transporting children. There was wide consensus among rideshare drivers that the training received from their service companies was minimal and the company policies unclear.

Task 3 Results: Nationwide Survey

A total of 1,168 valid survey responses were recorded. An additional 152 responses were excluded because respondents reported having no children under the age of 5 or completed less than half the survey. Note that response numbers to individual questions may vary depending upon how many participants elected to answer each question. Survey results are presented below based on question categories. Some survey questions were omitted from results presented in this report for the sake of space; however, they may be used for follow-on analyses in future projects.

Demographics

Age & Gender

The vast majority of respondents (90%) were aged 22–45. The number of respondents in each age category is presented in Table 4. Sixty-four percent of respondents reported being female, and 36% reported being male; one respondent reported being non-binary.

Table 4. Respondent Ages

Age Group	Number of Respondents
18-21	51
22-30	494
31-45	563
46-65	59
66+	1

Living Area & Education

Respondents were asked what phrase best described the area where they lived. A plurality of respondents reported living in the suburbs (34%), with the rest being relatively evenly divided across the four other descriptors (large city, medium-sized city, rural, or small town). Results are

presented in Figure 1. Participants were also asked about their level of education. Forty-four percent possessed college degrees, 22% had some college experience, 19% had an advanced degree, and 14% had a high school diploma.

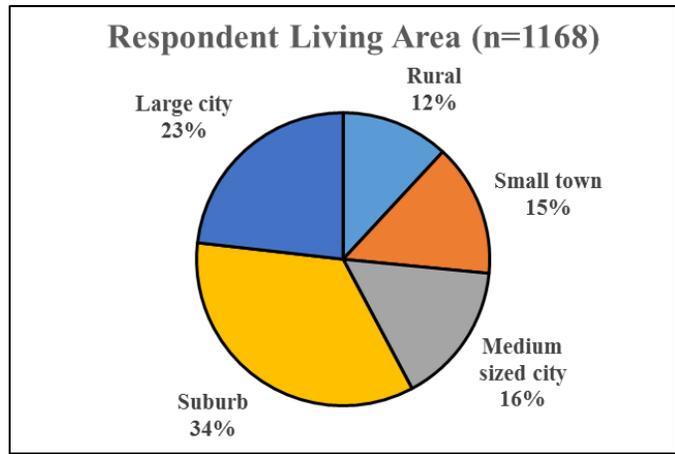


Figure 1. Respondent living area.

Information about Children Under Care

The largest number of participants had one or two children aged 2–4 years, with about one third of participants having one child under the age of 2 years (Figure 2). Smaller numbers of participants reported having older children; participants who reported only having children over the age of 5 were excluded from the survey.

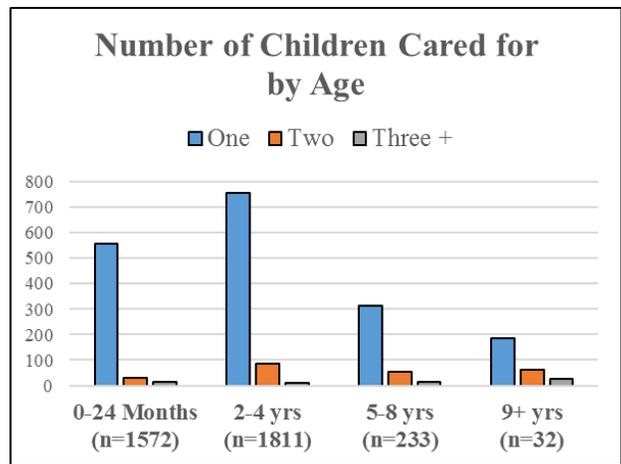


Figure 2. Number of children by age.

The majority of participants (63%) reported transporting a child or children daily, with the second highest amount (29%) reporting transporting children several times per week. Single-digit percentages of respondents reported carrying children once or twice a week, several times a month, or less.

Transportation & Children

Transportation modalities

Respondents were asked how often they typically used each of a number of transportation modalities with children (Figure 3). Two-thirds of respondents (67%) reported transporting a young child in their personal vehicle daily, while pluralities of respondents for all other modalities (rideshare, public transit, etc.) reported that those were never used. Thirty-six percent of respondents reported transporting children under the age of five using rideshare vehicles several times a month or more. Interestingly, this is more than the 24% who reported carrying children several times a month or more using mass transit (Bus/Train/Subway category).

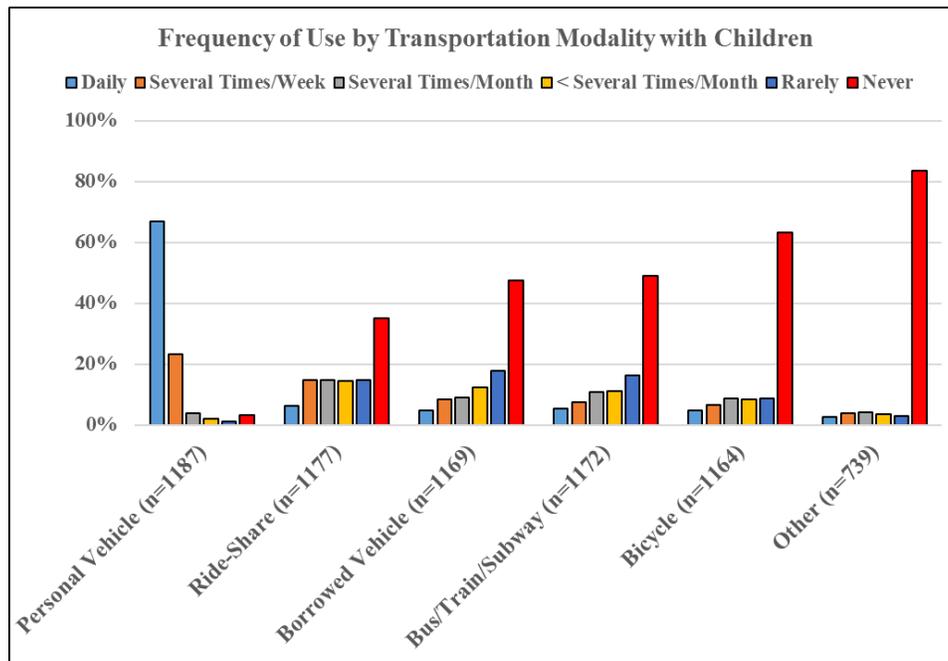


Figure 3. Frequency of use of various transportation modalities w/children. Sample sizes indicate # of participants who responded to each modality.

Reasons for not using rideshare

Participants who reported *not having used rideshare vehicles with children* (n = 413) did so for various non-exclusive reasons (respondents were allowed to check more than one option) (Figure 4). The largest proportion of respondents, 34%, reported that rideshare services were not convenient to use with children. Equal proportions of 31% reported not using rideshares *because* they were traveling with children and/or because they had concerns over driver safety.

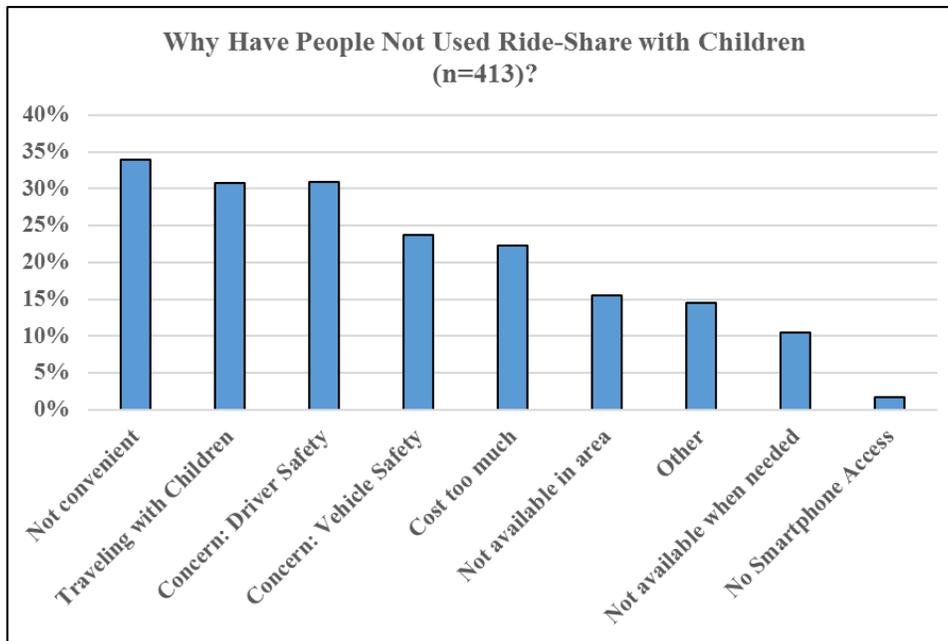


Figure 4. Reasons for not using rideshare with children.

Child-specific reasons for not using rideshare

To follow up the previous question in more detail, participants who reported not using rideshare services with children *because* they were traveling with children were asked a follow-up question. Of the 127 respondents who could have answered this question, 126 chose to do so. Again, respondents were free to choose more than one option. Nearly 60% of respondents cited not having child seats with them, with 44% saying that vehicles not being equipped with child seats was a barrier (Figure 5). Fifty percent believed rideshares were “not a practical option” with children and 45% and 42% claimed that rideshares are not “convenient” or “safe” options for use with children, respectively.

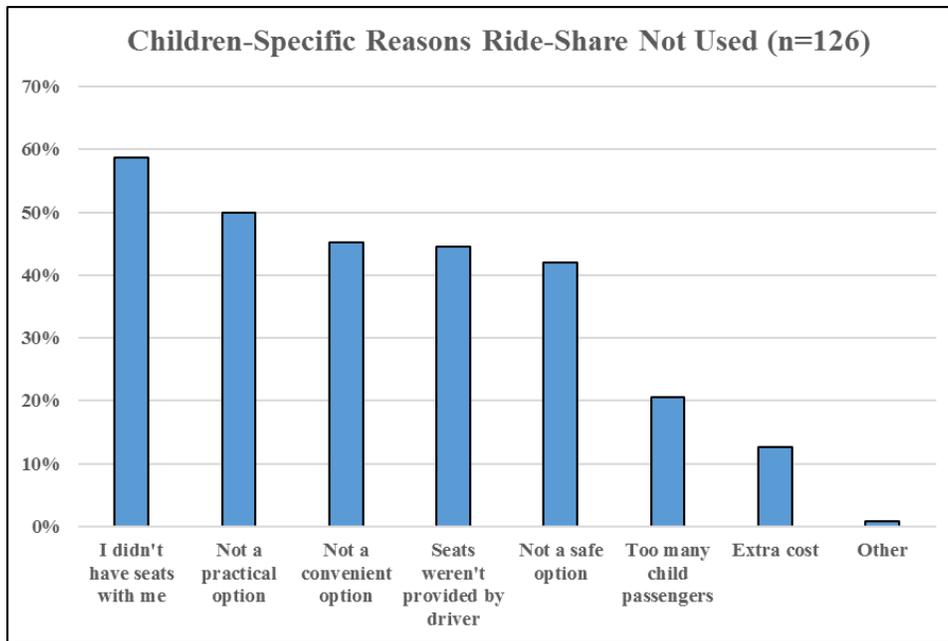


Figure 5. Child-specific reasons for not using rideshares.

Under what circumstances are child seats used?

The majority (59%) of respondents who had taken children in rideshare vehicles stated that they used a child seat every time they took a child, with 34% reporting that they sometimes used a child seat and 7% reporting they never used one (Figure 6).

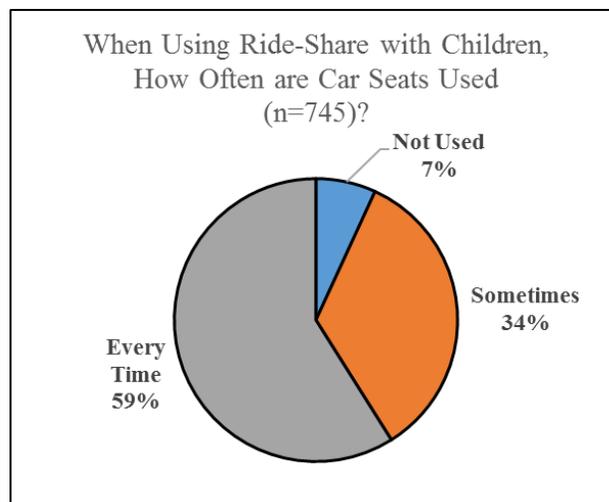


Figure 6. Frequency of usage of child seats in rideshares.

What were the reasons a car seat was not used?

Participants who reported transporting children in rideshare vehicles but never or only sometimes using a child seat in these situations were asked what the reason(s) were for lack of usage. The most frequent responses were that the driver did not have a seat available (50%) or the parent did not have a seat with them (46%) (Figure 7). Only 16% of parents reported not using a child seat because they believed one was not required.

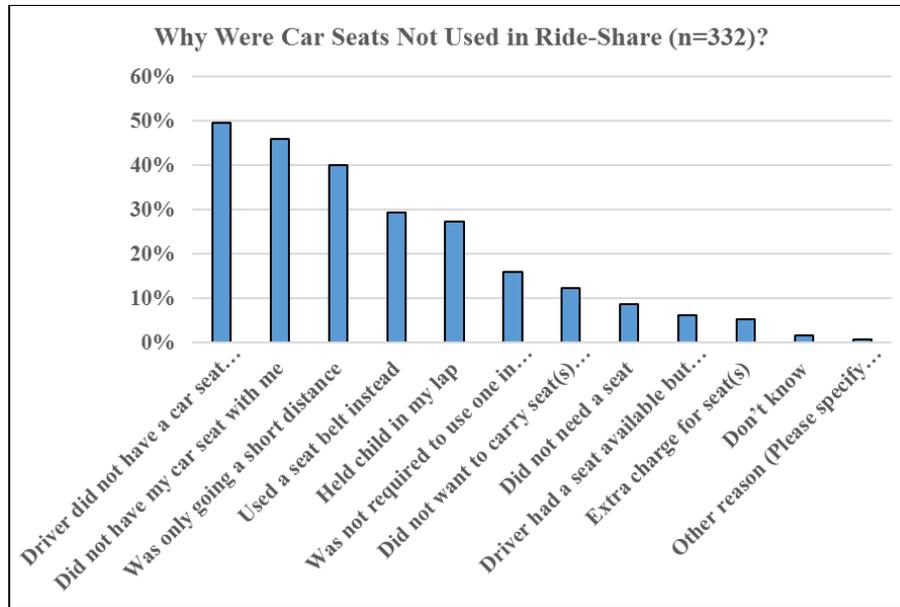


Figure 7. Reasons car seats were not used in rideshare vehicles.

Who provided the seat(s)?

Respondents who had used child seats in rideshare vehicles were asked who provided the seat that was used. The majority of respondents (79%) reported that they provided the seat, while the remaining 21% reported that the driver did so.

Who installed the child safety seat(s)?

Respondents were then asked who installed the safety seat in the rideshare vehicles when used. The majority (69%) reported that they had done so personally, while the other participants replied that the driver had done so (20%) or that some combination of parent(s) and driver (11%) had installed the seat.

Who adjusted child seat straps?

Similarly, respondents were asked who adjusted the seats to fit the child when used in a rideshare vehicle. A large majority (81%) reported that they adjusted the straps themselves, while smaller proportions reported that either the driver (11%) or both driver and parent/caregiver (8%) adjusted the straps.

Confidence in installation

Respondents were then asked how confident they were in how well the child seat was installed. Most participants reported being either very (62%) or somewhat (31%) confident in the installation correctness. However, it should be noted that child seats in personal vehicles are installed incorrectly or misused between 46% [7] and 95% [8] of the time. Accordingly, it is plausible that inadvertent errors in installation or adjustment could be more frequent or serious in an unfamiliar vehicle.

Transportation manner relative to personal vehicles

Finally, respondents were asked if they had ever transported a child differently in a rideshare vehicle than in a personal vehicle (Figure 8). Participants were free to choose more than one response in this question. A plurality of respondents (41%) reported that they had never transported children differently; however, 59% of participants reported doing one or more acts differently than they would in private vehicles, including holding a child on their lap (37%) and letting a child ride without an appropriate car seat (25%).

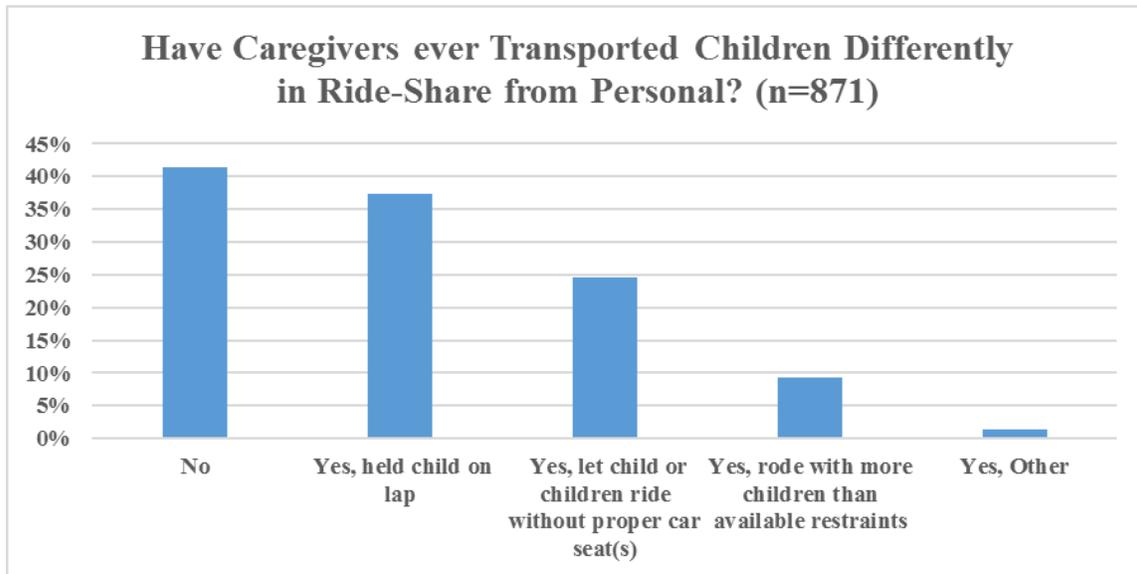


Figure 8. Transportation of children in rideshares relative to personal vehicles.

Use of Transportation Without Children

To gain a better baseline understanding of how respondents use rideshare vehicles, they were asked about their *use in the absence of their children*. Respondents were most likely to have used rideshare services without their children for local travel while out of town, with 37% of respondents reporting they did so “often” or “regularly.” “Never” was the highest response category for all other scenarios, with 33% reporting they have never used rideshares without their children for either routine or non-routine local travel, and 48% reporting never using rideshares without their children to make an out-of-town trip.

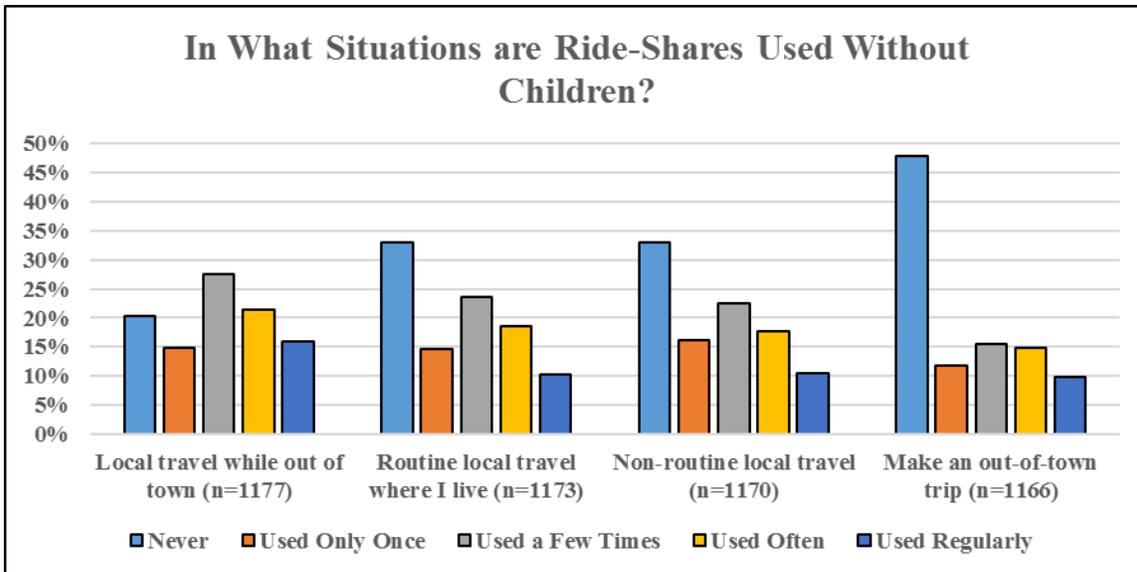


Figure 9. Situations in which parents used rideshares without children.

Familiarity with Child Passenger Safety Guidelines & Regulations

All respondents were asked a series of questions about their understanding of applicable guidelines and regulations. As this was a nationwide survey, and every state has different child passenger safety regulations, it was infeasible within the defined scope of this project to obtain objective information about actual familiarity with state regulations.

Familiarity with the recommended child seat guidelines

Nearly two-thirds of respondents (65%) reported being very familiar with *recommended guidelines* for child seats for their child/children’s age group(s) (Figure 10). Nearly one-third of respondents (31%) reported being somewhat familiar with the guidelines. Small minorities reported being unfamiliar (not at all, or a little familiar: 1% and 3%) with these guidelines. These findings suggest that, at least subjectively by their own assessment, most parents understand how they should be safely transporting their children.

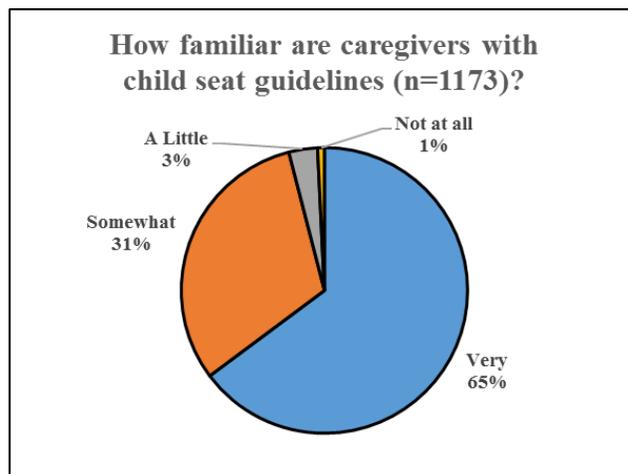


Figure 10. Familiarity with child seat guidelines.

Familiarity with state laws for child safety seats

A similar though somewhat smaller majority (60%) of respondents reported being very familiar with *their state's laws* regarding child seat use; and 39% had some level of uncertainty regarding these laws (Figure 11).

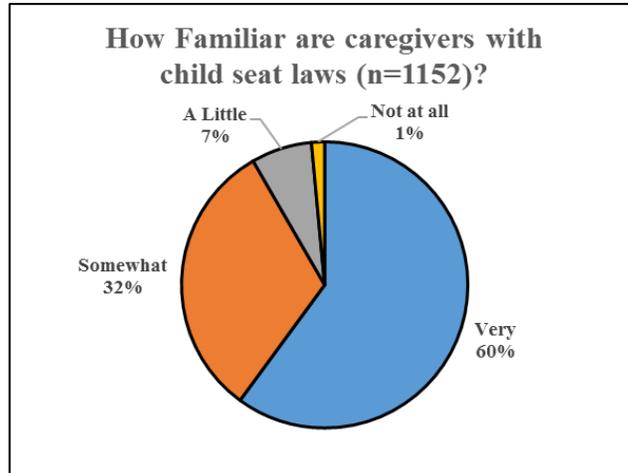


Figure 11. Familiarity with child seat laws.

Confidence in following child seat laws

Only half (50%) of the respondents who had taken their children in rideshare vehicles reported being very confident that they had followed state laws when doing so, with the other half reporting being “somewhat,” “not very,” or “not at all” confident (32%, 13%, 4%) that they had followed the law (Figure 12).

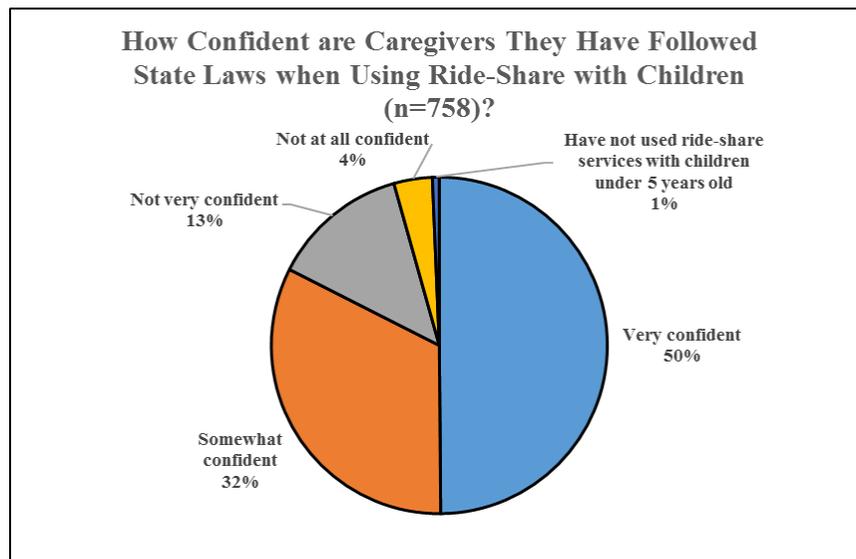


Figure 12. Confidence in following laws.

Legal responsibility for correct child seat use

Respondents had a divergence of interpretations about who is legally responsible for the correct usage of child seats in rideshare vehicles when presented with several options (Figure 13). Slightly more than half of the respondents (53%) thought that parents were legally responsible, while nearly

a quarter (23%) thought legal responsibility fell to the driver. The remaining participants were unsure (10%), thought the rideshare company was responsible (7%), thought that the responsibility depended on the circumstances (4%), or thought that it varied by state (3%).

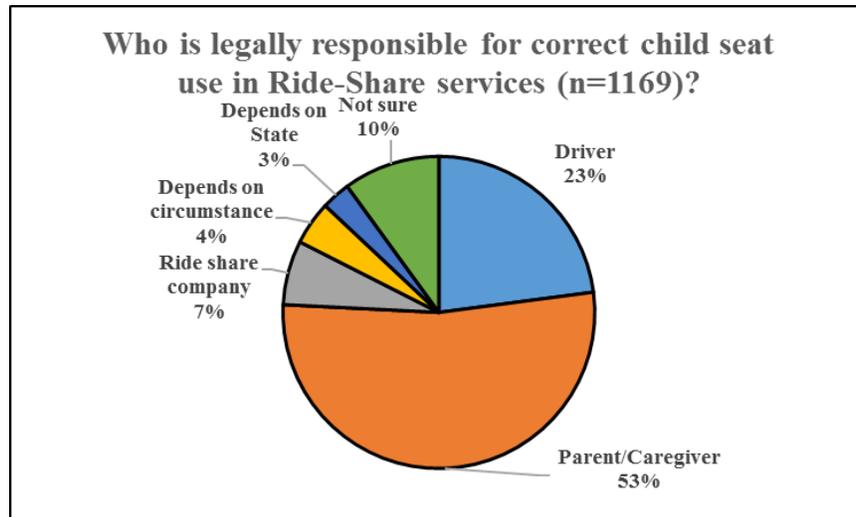


Figure 13. Legal responsibility for correct seat usage.

Sources of information about child seat regulations

Respondents reported obtaining travel information about child seat regulations from a wide variety of sources, including informational and department of motor vehicles websites (25% each), other transportation websites (16%), and blogs (10%) (Figure 14). Others assumed that regulations were the same everywhere (14%), reported not getting information (7%), or reported using other sources (3%). The results of this question suggested that an informational website would be an appropriate means of disseminating dedicated child seat information, particularly if awareness of the website could be increased via more traditional means (e.g., posters or handouts).

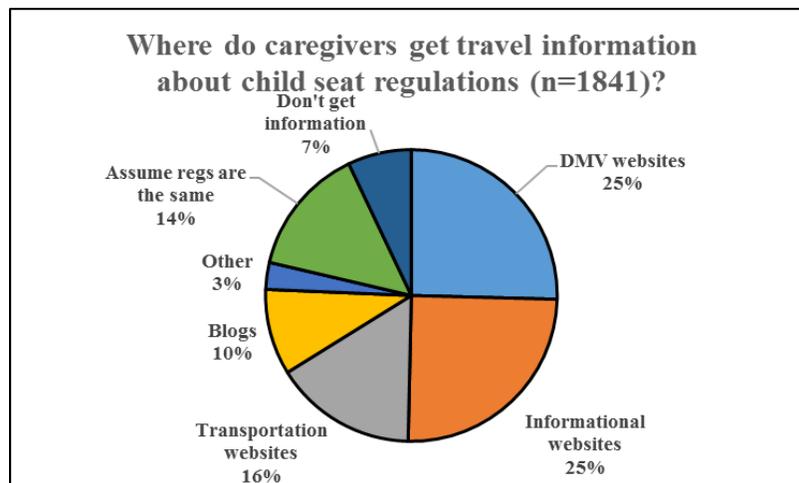


Figure 14. Sources of child seat regulation information.

Factors in use of rideshare services with children

Finally, respondents were asked to rate the importance of a variety of factors associated with using rideshare services with children (Figure 15). While all seven indicated factors were considered to be important, the driver safety record was most consistently rated as important, with 88% of respondents rating it “very” or “somewhat” important. Rear seat space was rated of next most importance, with 85% of respondents rating it “very” or “somewhat” important, followed by vehicle cleanliness. “Very” or “somewhat” important ratings also totaled 85% for vehicle cleanliness, but there were slightly fewer “very” important ratings than there were for rear seat space (57%). Interestingly, convenience of child seat installation (81% “very” and “somewhat” important) and having pre-installed child seats available (74%) were rated as having somewhat less importance than the preceding factors (although the majority of respondents did find them somewhat or very important).

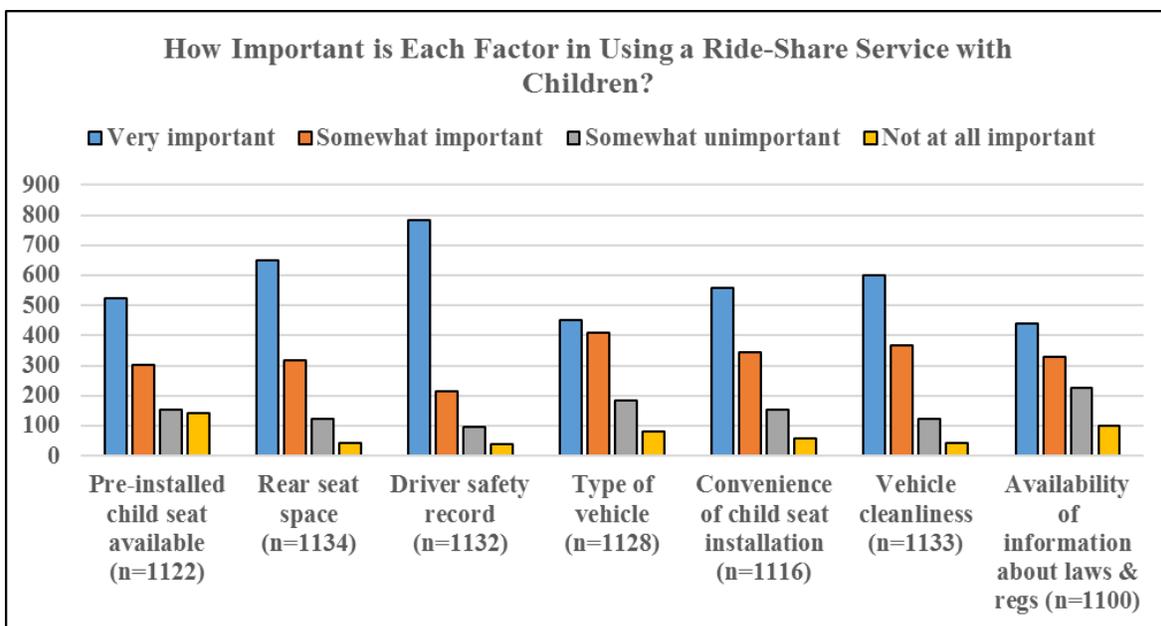


Figure 15. Importance of various factors in usage of rideshare services with children.

Task 4 Results: Technology Transfer & Education/Workforce Development

Development of the outreach website was led by the VTTI team using information gathered by the TTI team during the review of regulations. Web development was conducted in-house at VTTI, focusing on both desktop and mobile implementation, and the resulting website is hosted on Virginia Tech servers with a public-facing URL (<https://www.kidsridesafe.org>). To improve the efficacy of outreach activities, the principal investigator conducted a series of media interviews and the project team coordinated with a major ride-sharing industry partner to highlight the findings of this research and educate both drivers and riders on the importance of knowing and adhering to the applicable laws in each state. These outreach efforts will be described further in the Additional Products section.

Discussion

The results of this multimodal study led to a deeper understanding of how rideshare riders, drivers, and the general public view the issues surrounding the transportation of children in rideshare vehicles. Results highlight the need for, and importance of, educating the public on safety issues associated with using rideshare services with young children. Evidence from multiple phases of this study substantiates that parents, drivers, and legislative bodies view the rideshare trip as distinct from a personal vehicle trip, and therefore exceptions in occupant protection for children occur on a frequent basis. In addition to the immediate need for countering these views through education, this research makes obvious the need for legal clarity and outreach. In addition, this research confirms the pronounced need for rideshare-specific legislation with regard to child passenger transportation at the state level, where these definitions remain subject to interpretation.

This study also resulted in the development of a resource website designed to present information about state regulations regarding child passenger safety in rideshare vehicles to users and drivers (www.kidsridesafe.org). The website includes hyperlinks to regulations for each state (directly linking to .gov domains whenever possible), along with guidance on general child passenger safety with links to other sites that focus on topics such as child seat selection and installation. The website is highly accessible and easy to use across a broad population, and is compatible with portable devices. The VTTI/TTI research team has teamed with Uber to publicize this website through the company's social media and direct driver contacts.

Additional applications center on publicizing the study findings beyond the requisite research report. Media approaches such as press releases and radio, television, and online interviews have all been applied and will continue to be used to amplify the message that rideshare service users and providers must recognize the importance of securing children properly in all passenger vehicles.

Conclusions and Recommendations

This research study is a first step in identifying major issues surrounding child seat usage in rideshare services. As alternatives to traditional transportation grows in popularity, practical solutions for child passenger safety will need to keep pace. Child passenger safety advocates, traffic safety professionals, researchers, lawmakers and industry partners must continue to educate, regulate, advocate, and innovate for child safety in every vehicle.

Across all information-gathering and data-collection methodologies used in this study, legal review, focus groups, and nationwide survey—it became clear that there is substantial confusion on the part of both parents and rideshare drivers about when, where, and how to transport children safely in rideshare vehicles. This may be due in large part to the patchwork of regulations that exists in the U.S., where each state is responsible for developing and communicating its own child passenger safety regulations. As discovered in Task 1, these regulations are often difficult to find,

involve multiple statutes, are confusingly worded, vague, and/or unclear about the responsibilities incumbent upon riders and drivers of rideshare vehicles, particularly as related to established industries such as taxicabs or livery vehicles.

To address these issues, the project team developed an outreach website designed to put state-by-state regulatory information within easy reach of the general public, and embarked on a media campaign to publicize this website. The outreach website and education efforts developed in this project will continue to provide lasting benefit to members of the public, academics, the rideshare industry, and rulemaking bodies aiming to improve regulatory transparency.

Additional Products

The Education and Workforce Development (EWD) and Technology Transfer (T2) products created as part of this project can be downloaded from the Safe-D website [here](#). The final project dataset is located on the Safe-D Collection of the VTTI [Dataverse](#).

Education and Workforce Development Products

The project team completed several education and workforce development products under this project:

- 1) The project team at TTI included two undergraduate students and one graduate student. The graduate student, Laura Barowski, took a leadership role during the focus group process, presented the team's research in a lectern session at the Lifesavers 2018 national conference [7], and is an author on this report.
- 2) The team developed an outreach website (detailed below) that was designed to educate the general public, including rideshare customers and drivers, about the current state of child passenger safety regulations by state as well as to provide useful links to external websites with further information about child safety. In support of this website, the principal investigator conducted a series of interviews (detailed in Appendix E: Media Appearances to Support Outreach) with local and national media, including television, radio, and newspapers, to further educate the public and increase awareness of the website.

Technology Transfer Products

The project's primary technology transfer product was an outreach website located at <https://www.kidsridesafe.org>. This website was designed to be usable by the general public, with a large amount of information easily accessible with just a few clicks. Illustrations of the website are presented in Appendix F: Outreach Website Screenshots.

Key information includes an overview of the site (Figure F1), a clickable map (Figure F2) that leads to summaries of state-by-state rules regarding child passenger safety in rideshare vehicles (Figure F3), which in turn link to external official websites detailing state regulations (Figure F4).

Finally, the site contains a resources page (Figure F5) that provides helpful links to reputable external sites concerned with child passenger safety.

This website was designed to be functional and usable on both desktop and portable devices, and is hosted on Virginia Tech servers with an outward-facing URL to enable ease of identification and discovery by end users. We anticipate updating this website and its content regularly, but this is contingent upon available funding.

To help promote the website, the project team collaborated with Uber, Inc., a major ridesharing company. Uber promoted the site to both their drivers, in a blog piece entitled “Tips and guidance on car seats and underage customers” (<https://www.uber.com/blog/driver-uber-for-families/>), and to customers, in a piece entitled “Tips for putting family safety first” (<https://www.uber.com/blog/familysafety/>).

Data Products

The datasets uploaded to Dataverse include the following, which can be found at <https://dataverse.vtti.vt.edu/dataset.xhtml?persistentId=doi:10.15787/VTT1/HRG9CK>:

- 1) Summarized focus group data, including summaries for each focus group conducted in .docx format. Data are presented in a cleaned format to enable easy comprehension of discussion topics and perspectives.
- 2) Raw survey data in Excel format, along with a copy of the survey serving as a data dictionary. Data are presented in a single tab with columns for each survey question.

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Appendices

Appendix A: Nationwide Internet Survey

Virginia Tech is conducting research with parents across the nation to learn more about their usage of ride share services such as taxis, Uber and Lyft. Specifically, this research is designed to gather more information about child seat usage in ride share services. Thank you for your participation in this important project. Please note the following points before you begin the survey:

- 1) To be eligible to complete this survey you must be 18 years or over and a parent of a child under the age of five.
- 2) Your participation is voluntary and confidential.
- 3) This survey is expected to take approximately 10-15 minutes to complete.
- 4) The overall results of the survey may be published in a research paper.
- 5) Your consent to participate is indicated with submission of the survey.
- 6) All data collected by this project will be uploaded and archived in a data repository maintained by Virginia Tech Transportation Institute. A dataset may also be made publicly available. The public dataset will not contain any information that might lead to the identification of an individual participant.
- 7) Should you have any questions or concerns about your rights as a research subject, you may contact the Virginia Tech IRB Chair, Dr. David M. Moore at moored@vt.edu.

1. How many children in each age group do you care for on a regular basis? Please leave blank if zero.

- Newborn – 24 months ____
- 2 years – 4 yrs ____
- 5 yrs – 8 yrs ____
- 9+ years ____

2. How often do you transport a child or children under your care?

- Daily
- Several times per week
- Once or twice a week
- Several times a month
- Less than several times a month

3. How do you typically use each of the transportation types below when transporting the child or children under the age of 5 under your care?

	Daily	Several Times Per Week	Several Times A Month	Less Than Several Times a Month	Rarely (Once a year or less)	Never
-----Please Click One Response Option----- ----						
a. Your personal vehicle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
b. A borrowed vehicle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
c. Bus/train/subway	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
d. Bicycle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
e. Ride share (e.g., Uber or Lyft)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
g. Other (Please specify transportation type: _____)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

4. [ASK ONLY IF 3e= 'NEVER'] What are the reasons you have not used a ride share service for children under the age of 5 in your care? (Please Click All Response Options That Apply)

- Not available when I needed it
- Not convenient
- Not available in my area
- Cost too much
- Concern over driver safety
- Concern over vehicle safety
- No smartphone access
- Traveling with children
- Other (Please specify other reason: _____)

5. [ASK ONLY IF 4 'Traveling with children' SELECTED] What are the reasons you felt you could not use a ride share service while traveling with children?

- Child or children required car seat(s) and I didn't have seat(s) with me
- Child or children required car seat(s) and seat(s) weren't provided by driver
- Too many child passengers for rideshare service vehicle
- Extra cost for child(ren) with car seats too expensive
- Not a safe option when traveling with children
- Not a convenient option when traveling with children
- Not a practical option when traveling with children
- Other (Please specify other reason: _____)

SKIP to 17

6. In what situations and how frequently have you used a ride share service such as Uber or Lyft when transporting a child or children under your care?

	Never	Have Used Only Once	Used a few times (2 -5)	Used Often (6-10 times)	Used regularly (more than 10 times)
a. For local travel while on an out-of-town trip (Examples: airport to hotel, hotel to restaurant, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. For routine local travel where I live (Examples: daily activity, school, shopping, social activities etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. For non-routine local travel where I live (Examples: usual vehicle not available, emergencies, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. To make an out-of-town trip.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. When you have used Uber/Lyft or a similar rideshare service while traveling with a child or children under 5 years old in your care, how often was a car seat used?

- Not used
- Used sometimes but not every time
- Used every time rideshare service was used [GO TO 9]

8. What was/were the reasons a car seat was not used? (Please Click All Response Options That Apply)

- Was only going a short distance
- Did not have my car seat with me
- Driver did not have a car seat available
- Was not required to use one in this situation

- Used a seat belt instead
- Held child in my lap
- Driver had a seat available but preferred not to use it
- Did not need a seat
- Extra charge for seat(s)
- Did not want to carry seat(s) around at destination point
- Other reason (Please specify reason: _____)
- Don't know

GO TO 16 IF 7=NOT USED

9. What type of child safety seat(s) was used?

- Rear facing infant seat
- Rear facing convertible seat
- Forward facing convertible seat
- Forward facing booster with a harness
- Booster seat
- More than one type seat was used

10. What was the position of the child safety seat(s) used?

- Rear side
- Rear center
- Front
- More than one position was used

11. How was the child safety seat attached to the vehicle?

- Seat belt
- Latch
- Not attached
- More than one attachment method used
- Don't know

12. Who provided the seat(s)?

- Brought seat(s) yourself
- Driver provided seat(s)

13. Who installed the child safety seat(s)?

- Self
- Driver
- Both self and driver
- Other (Please specify: _____)

14. Who adjusted the straps in the child safety seat?

- Self
- Driver
- Both self and driver
- Other (Please specify: _____)

15. How confident overall were you in the correctness of the installation of the child safety seat(s) used in the Uber/Lyft service(s)?

- Very confident
- Somewhat confident
- Not very confident
- Not at all confident

16. Have you ever transported a child in a rideshare vehicle in a manner different from your personal vehicle? (Please Click All Response Options That Apply)

- Yes, held child on lap
- Yes, let child or children ride without proper car seat(s)
- Yes, rode with more children than available restraints
- Yes, Other (Please specify the manner that was different with ride share: _____)
- No

17. In what situations and how often have you used a ride share service such as Uber or Lyft *without* a child or children?

	Never	Have Used Only Once	Used a few times (2 -5)	Used Often (6-10 times)	Used regularly (more than 10 times)
For local travel while on an out-of-town trip					
a. (Examples: airport to hotel, hotel to local destination, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Have Used Only Once	Used a few times (2 -5)	Used Often (6-10 times)	Used regularly (more than 10 times)
b. For routine local travel where I live (Examples: daily activity, work, shopping, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. For non-routine local travel where I live (Examples: usual vehicle not available, emergencies, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. To make an out-of-town trip.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. In what situations and how often have you used a taxi when transporting a child or children under your care?

	Never	Have Used Only Once	Used a few times (2 -5)	Used Often (6-10 times)	Used regularly (more than 10 times)
a. For local travel while on an out-of-town trip (Examples: airport to hotel, hotel to local destination, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. For routine local travel where I live (Examples: daily activity, school, shopping, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. For non-routine local travel where I live (Examples: usual vehicle not available, emergencies, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. To make an out-of-town trip.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. When you have used a taxi while traveling with a child or children under 5 years old in your care, how often was a car seat used?

- Not used
- Used sometimes but not every time
- Used every time rideshare service was used [GO TO 21]

20. What was/were the reasons a car seat was not used? (Please Click All Response Options That Apply)

- Was only going a short distance
- Did not have my car seat with me
- Driver did not have a car seat available
- Was not required to use one in this situation

- Used a seat belt instead
- Held child in my lap
- Driver had a seat available but preferred not to use it
- Did not need a seat
- Extra charge for seat(s)
- Did not want to carry seat(s) around at destination point
- Other reason (Please specify reason: _____)
- Don't know

21. How familiar are you with the recommended child seat guidelines for the age or ages of your children?

- Very
- Somewhat
- A little
- Not at all

22. How familiar are you with your state's laws for child safety seat use for the age or ages of your children?

- Very
- Somewhat
- A little
- Not at all

23. How confident are you that you have followed state laws when using rideshare services such as Uber and Lyft with children under 5 years old?

- Very confident
- Somewhat confident
- Not very confident
- Not at all confident
- Have not used rideshare services with children under 5 years old

24. How confident are you that you have followed state laws when using taxi services with children under 5 years old?

- Very confident
- Somewhat confident
- Not very confident
- Not at all confident
- Have not used taxis with children under 5 years old

25. Who is legally responsible for correct child safety seat use for children under 5 years old as passengers in rideshare services such as Uber or Lyft?

- The driver
- The parent, guardian, or caregiver
- The ride share company
- Depends on the circumstances

- Depends on the State
- Not sure

26. Who is legally responsible for correct child safety seat use for children under 5 years old as passengers in taxis?

- The driver
- The parent, guardian, or caregiver
- Depends on the circumstances
- Depends on the State
- Not sure

27. When you travel, how do you get information about child seat regulations? (Please Click All Response Options That Apply)

- DMV websites
- Informational websites (AAA Foundation, IIHS, safecar.gov, etc.)
- Transportation websites (Taxi, Uber, Lyft, etc.)
- Blogs
- Other
- I assume regulations are the same throughout the U.S.
- Don't get information

28. How important are each of the factors below in your decisions about using a rideshare service with a child or children under the age of 5?

	Very important	Somewhat important	Somewhat unimportant	Not at all important	Don't know
-----Please Click One Response Option-----					
a. Pre-installed child seat available	1	2	3	4	5
b. Rear seat space	1	2	3	4	5
c. Driver safety record	1	2	3	4	5
d. Type of vehicle	1	2	3	4	5
e. Convenience of child seat installation in vehicle	1	2	3	4	5
f. Vehicle cleanliness	1	2	3	4	5
g. Availability of information about child seat laws and regulations	1	2	3	4	5

29. Are there any other factors that would influence your decision to use a rideshare service with a child or children under the age of 5?

- Yes (Please specify factors: _____)
- No

30. Are you a driver for a rideshare vehicle?

- Yes
- No [GO TO 36]

31. Do you provide child seats as part of a formal family-focused rideshare service such as Uber Family?

- Yes
- No

32. Do you provide child seats when you are driving for the ride share?

- Yes
- No

33. Have you transported passengers with children under the age of 5?

- Yes
- No [GO TO 35]

34. Have any of those riders installed their own child seats?

- Yes
- No

35. Have you allowed children under 5 years old to ride in your vehicle without an appropriate child seat?

- Yes
- No

36. Which best describes the area where you live?

- Rural
- Small town
- Medium sized city
- Suburb
- Large city

37. Which age group are you in?

- 18-21 years
- 22-30 years
- 31-45 years
- 46-65 years
- Over 65 years

38. What is your education level?

- Less than high school
- High school
- Some college
- College degree
- Advanced degree

39. What is your gender?

- Male
- Female
- Non-binary

39. Please share your comments on using rideshare services such as Uber/Lyft and/or taxi services with children under 5 years old and how you think the rideshare experience could be improved for riders who want to use these services with children under the age of 5.

Thank you for your help with our study. Please click “submit” to end the survey.

Appendix B: Literature Review Document

Introduction

The ride-sharing industry is expanding at a rapid rate as the frequency of ride-sharing utilization is exponentially increasing worldwide. In 2015, the percentage of adults in the United States who reportedly used ride-sharing as a method of transportation reached 15% (Pew Research Center, 2016). Prominent rideshare companies such as Uber and Lyft have extended their reach across the country, with Uber present in 48 states and Washington D.C. and Lyft present in 45 states and Washington D.C. (Lyft, 2017; Uber, 2017). Ride-sharing is perceived to be a cheaper, safer, and more convenient alternative for public transportation than traveling by taxicab. These perceptions significantly impact the transportation industry as ride-sharing becomes increasingly popular and more appealing than taxicabs (Certify.com, 2015).

Additionally, the ride-sharing industry is typically not held to the same regulatory standards as the taxi industry, which has served as a point of contention for both consumers and legislative entities in trying to decide how ride-sharing should be regulated. The societal shift in consumer preference for transportation ushers in a new wave of implications, specifically for transportation safety. Nationwide, taxicabs are held to underwhelming standards of passenger safety, particularly for young children. The issue of child passenger safety is becoming a growing cause for concern among consumers as ride-sharing begins to dominate the public transportation industry. The purpose of this literature review is to identify three central aspects: (1) existing literature and/or data regarding child safety within ride-sharing, (2) rideshare companies' policies and regulations regarding child passenger safety, and (3) state-by-state variations in legislation on child restraint.

Methodology

The Elton B. Stephens Company (EBSCO) and LexisNexis databases were searched using key search terms such as child restraint, rideshare, ride-source, for hire, regulation, and legislation. Data from the Insurance Institute for Highway Safety (IIHS) and National Highway Traffic Safety Administration (NHTSA) was also extracted. All relevant data was sorted and compiled into a comprehensive matrix as well as smaller, more specific matrices for each variable that was assessed, which are provided in a separate document.

Results

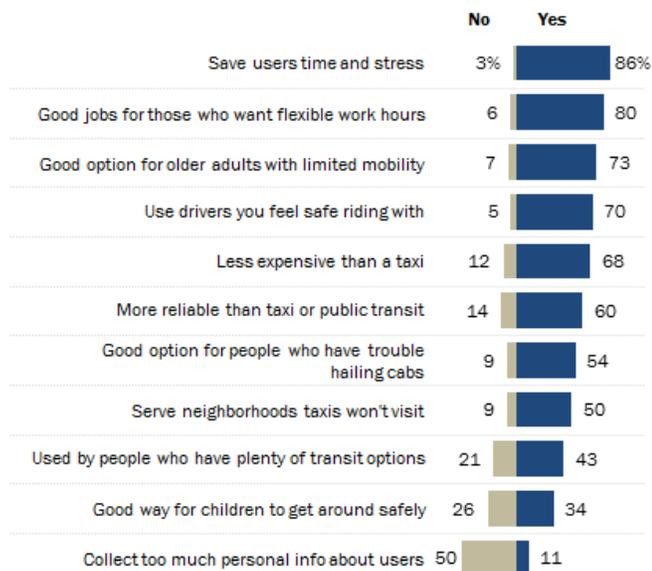
Existing Literature

Studies on child safety and ride-sharing are scarce. The Pew Research Center conducted a survey of online shared platform users in 2016 and asked several questions pertaining to users' perceptions of ride-sharing services (Figure 1). Of the respondents who indicated they were rideshare users, 57% thought that rideshare companies should not be obligated to follow taxi company rules and regulations. However, a large majority of users believed that a significant degree of responsibility should come with this autonomy; 68% held the opinion that drivers and service providers should be mutually responsible for ensuring proper driver training, and 62% thought drivers and service providers should be mutually responsible for ensuring the safety of the vehicles. Though the vast majority of sentiments regarding ride-sharing were positive, there

was one topic in particular that users’ perceived as an inherent weakness of these services (see Figure 1). Survey respondents were asked whether or not they believed that ride-sharing was an adequate option for parents to safely transport their children. Only 34% of users and 30% of users who were parents indicated that they believed ride-sharing was a safe method of transportation for children (Pew Research Center, 2016).

Users’ views of ride-hailing services are largely positive

% of U.S. ride-hailing users who feel that the following statements describe these services well, or not



Note: Don't know responses not shown.
 Source: Survey conducted Nov. 24-Dec. 21, 2015.
 "Shared, Collaborative and On Demand: The New Digital Economy"

PEW RESEARCH CENTER

Figure B1. Rideshare users’ perceptions of ride-sharing services. Retrieved from <http://www.pewinternet.org/2016/05/19/on-demand-ride-hailing-apps/>

Rideshare Provision of Car Seats

In 2014, Uber launched a new service called UberFAMILY that allows riders to request a car seat in their Uber vehicle. The service was initially launched in New York City, Philadelphia, and Washington D.C.; recently, Orlando was added to the list (Uber, 2017). UberFAMILY drivers universally provide one IMMI Go car seat in their vehicles that they install prior to picking up patrons. Drivers in Orlando are the exception to this policy and have the option to provide car seats of their choosing that meet criteria specified by Uber. UberFAMILY policy states that children secured in the IMMI Go seat must be at least 12 months old, weigh 22 pounds, and measure 31 inches tall. The policy defines children weighing more than 48 pounds and/or measuring taller than 52 inches as too big to use the seat. UberFAMILY drivers are required to meet with child passenger safety (CPS) technicians that have been certified by Safe Kids Worldwide and demonstrate their ability to properly install the IMMI Go seat in their

vehicle and safely restrain a child in the seat. The drivers are also provided with written informational materials and instructional videos on how to properly use and maintain the car seat. Though the guardians are responsible for securing their child in the seat, UberFAMILY drivers are allowed to assist in the securing process. Uber’s terms of service clearly state that the company is not responsible or liable for any improperly installed car seats or improperly restrained children (Uber, 2017).

The UberFAMILY service is still very new and only available in four cities in the United States. Uber policies for all other services encourage parents to secure their children in seat belts and to follow local/state seat belt laws. Lyft’s company policy states that their drivers do not provide car seats for young children and that parents are responsible for providing their own. The policy also clarifies that car seats provided by parents must meet the legal requirements according to state or local legislation, meaning the seat must be appropriate for the child’s age, weight, and height as defined by the law (Lyft, 2017). The company’s website does not explicitly refer to seat belt laws for any other passengers.

State Legislation Regarding Child Restraint

Child restraint laws vary widely in specificity and several other variables from state-to-state. The legislation differs in ages covered, types of car seats required, seat location specificity, types of enforcement, and exemptions from the law. The variations amongst these variables are summarized in a comprehensive matrix as well as individual matrices for each and provided in a separate document. This analysis examined legislation from all 50 states as well as Washington D.C..

Exemptions from child restraint legislation. A total of 34 states exempt taxis and/or for-hire vehicles from their child restraint laws. The legislation terminology used to refer to vehicles that offer these services differed by state, and variations and frequencies of each term were compiled in a matrix. Terminology used included taxi, for-hire, livery, commercial, and public transportation (not including buses). Currently, Georgia is the only state that uses the term “rideshare” in its legislation when referring to vehicles and drivers that are not exempt from state child restraint laws. Understanding and clarifying how each state defined these services was essential when collecting and analyzing the data.

In all states that exempted these types of vehicles, the laws also exempted for-hire drivers from the responsibility and associated liability of ensuring that child passengers were properly restrained in their vehicles. Of the 17 states that do not exempt for-hire vehicles from child restraint laws, two states exempt taxi drivers from liability associated with properly restraining children. In Iowa, child restraint laws apply to taxis but the child’s guardian is liable for any infractions of the law (NHTSA, 2013). In Massachusetts, taxi drivers are exempt of liability if their taxi is not equipped with child restraint devices (citation needed).

Seat location laws. Only 17 states’ laws specify requirements that children meeting certain criteria sit in the rear seat of a vehicle. The majority of these laws state that children under a specific age must sit in rear seats when available; however, North Carolina’s and Vermont’s legislations allow children within the specified age ranges to sit in the front seat if the passenger airbags are deactivated (IIHS, 2017). In New Jersey and Virginia, the seat location limitations apply to children who are in rear-facing seats as opposed to specific age ranges. Both

of these states' legislations permit rear-facing children to sit in the front seat as long as the passenger airbags are deactivated (IIHS, 2017).

Discussion

The amount of available literature, legislation, and research surrounding the topic of child seat usage in ride-sharing vehicles is minimal. Though launched 3 years ago, Uber's car seat service is currently only available in four major cities in the country: New York City, NY; Washington D.C.; Philadelphia, PA; and Orlando, FL. To date, Lyft does not offer any car seat services. The review of literature resulted in only one form of data collection that measured perceptions of rideshare safety for children in the survey conducted by the Pew Research Center in 2016. Upon reviewing the laws of all 50 states and Washington D.C., Georgia was the only state identified as having legislation that addresses and mandates child restraint in ride-sharing vehicles. Reviewing the relevant literature and legislation revealed key aspects that are central to understanding the complexity of the issue.

Rideshare Driver Liability. The question of to whom to assign liability when providing rideshare services to parents with car-seat-aged children has gone largely unanswered. Uber's terms of service regarding their provision of car seats state that (1) the guardian is responsible for checking the installation of the car seat and for securing the child in the seat and (2) the company is not liable for improperly installed seats or improperly secured children (Uber, 2017). These statements insinuate, but do not explicitly state, that the driver is not responsible or liable for the safety of the child when providing this service. Moreover, there is no question that local and state laws transcend company policies and regulations regarding child passenger safety. In the 15 states where drivers of for-hire vehicles are liable for ensuring proper restraint of child passengers, Uber drivers' indemnity becomes non-applicable. To further complicate the issue, drivers are independently contracted with rideshare companies, meaning they are not considered company employees. The absence of an employment contract allows rideshare drivers to reserve the right to refuse rides to passengers, particularly parents who do not have car seats for their children. This freedom of choice enables rideshare drivers to protect themselves from incurring unwanted liability. The interactions of these factors contribute to the uncertainty of which party to assign liability to in the case of an incident while providing or using rideshare services.

Rideshare User Perceptions. To date, little research has been done to assess rideshare users' satisfaction with specific components of rideshare services. The Pew Research Center study was one of the first to measure these variables, and the results provided shallow but useful insight into users' perceptions of the safety of rideshare transportation for young children. The survey reported that a vast majority of users hold both rideshare drivers and companies responsible for ensuring proper driver training and vehicle safety; however, the terms "training" and "safety" are not clearly defined. Additionally, two-thirds of respondents indicated that they were either unsure (40%) or did not agree (26%) that ride-sharing is a safe method of transportation for young children. The survey did not further explore the causes for these opinions or what users might perceive to be a better transportation alternative. These gaps in knowledge highlight the need for more in-depth analysis of rideshare users' perceptions of specific attributes of ride-sharing services.

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Appendix C: Child Safety Laws by State

State	Primary Enforcement	Who is covered? In what seats?	Must be in child safety seat	Adult Belt Permissible	Preference for Rear Seat	Child restraint laws as applied to taxicabs	Taxicab driver liable?	Law Wording	Source
AL	yes; effective 12/09/99	15+ years in front seat	younger than 1 or less than 20 pounds in a rear-facing child restraint; 1 through 4 years or 20 - 40 pounds in a forward-facing child restraint; 5 but not yet 6 in a booster seat	6 through 14 years	law states no preference for rear seat	exempt	no	"Every person transporting a child shall be responsible for assuring that each child is properly restrained pursuant to this section. The provisions shall not apply to taxis and all motor vehicles with a seating capacity of 11 or more passengers."	http://dps.alabama.gov/Documents/Documents/ChildPassengerRestraintLaw.pdf
AK	yes; effective 05/01/06	16+ years in all seats	younger than 1 or less than 20 pounds in a rear-facing child restraint; 1 through 3 years and more than 20 pounds in a child restraint, 4 through 15 years who are either shorter than 57 inches or who weigh more than 20 but less than 65 pounds in a booster	4 through 7 years who are at least 57 inches or 65+ pounds; 7 through 15 who are shorter than 57 inches or weigh less than 65 pounds	law states no preference for rear seat	not exempt	yes	"The use of either seat belts or child passenger safety devices does not apply to: (1) passengers in school buses unless such buses are required by the U.S. Department of Transportation to have such belts for passengers; (2) vehicle operators who are either delivering mail or newspapers; (3) persons or classes of persons who have been exempted via regulations because of either physical or medical reasons; and (4) persons riding in motor vehicles that are not required to have safety belts."	NHTSA Vehicle Occupant Protection Laws

AZ	no	8+ years in front seat; 8 - 15 in all seats	4 years and younger; children 5 - 7 who are 57 inches or shorter	5 - 7 who are taller than 57 inches	law states no preference for rear seat	exempt	no	"Exemptions: A motor vehicle operator does not have to comply with the mandatory child restraint provisions under the following circumstances: (1) the operator is driving a vehicle that was not manufactured with passenger restraint systems; (2) the operator is driving a recreational vehicle (3) the operator is driving a commercial motor vehicle"	NHTSA Vehicle Occupant Protection Laws
AR	yes, effective 06/30/09	15+ years in front seat	5 years and younger and less than 60 pounds	6 through 14 years or 60+ pounds	law states no preference for rear seat	exempt	no	"While operating a motor vehicle on a public road, street, or highway of this state, a driver who transports a child under fifteen years of age in a passenger automobile, van, or pickup truck, other than one operated for hire, shall provide for the protection of the child by properly placing, maintaining, and securing the child in a child passenger restraint system properly secured to the vehicle and meeting applicable federal motor vehicle safety standards in effect on January 1, 1995."	http://www.lexisnexis.com/hottopics/arcod/Default.asp

CA	yes; effective 01/01/93	16+ years in all seats	younger than 2 years and less than 40 pounds and less than 40 inches in a rear-facing infant seat (effective 01/01/2017); 7 years and younger who are less than 57 inches must be in an appropriate child passenger restraint system	8 through 15 years or at least 57 inches	children 7 years and younger who are less than 57 inches must be in the rear seat	not exempt	yes	"The operator of a limousine for hire or the operator of an authorized emergency vehicle shall not operate such vehicle unless the operator and front seat passengers who are 6 years old and older or who weigh at least 60 lbs., are restrained by safety belts. (2) No person shall operate a taxicab unless front-seat passengers who are 6 years old and older or who weigh at least 60 lbs., are restrained by safety belts."	NHTSA Vehicle Occupant Protection Laws
CO	no	16+ years in front seat	younger than 1 year and less than 20 pounds in a rear-facing child restraint; 1 through 3 years and 20-40 pounds in a child restraint; 4 through 7 years in a booster seat	8 through 15 years	1 year and younger and less than 20 pounds must be in the rear seat if available	exempt	no	"These types of vehicles [taxi cabs, shuttle vans, commercial buses] are exempt from Colorado's child passenger safety laws."	https://www.codot.gov/safety/seatbelts-carseats/carseats/frequently-asked-questions.html#collapseNine
CT	yes; effective 01/01/86	7+ years in front seat	younger than 1 year or less than 20 lbs. in a rear-facing child restraint; 1- 6 years less than 60 lbs. in a child restraint or booster seat (booster seats may only be used in a seating position with a lap and shoulder belt)	7 through 15 years and 60+ pounds	law states no preference for rear seat	not exempt	yes	"A person who transports a child 6 years old or younger or weighing under 60 lbs. in a motor vehicle shall provide and require that such child be secured in an approved child restraint system; A "motor vehicle" does not include a bus having tonnage rating of 1 ton or more."	NHTSA Vehicle Occupant Protection Laws

DE	yes; effective 06/30/03	16+ years in all seats	7 years and younger and less than 66 pounds	8 through 15 years or 66+ pounds	children 11 years and younger and 65 inches or less must be in rear seat if passenger airbag is active	exempt	no	"The requirement to use a child passenger restraint system does not apply if the child is being transported in a motor bus, limousine, or taxicab."	NHTSA Vehicle Occupant Protection Laws
DC	yes; effective 10/01/97	16+ years in all seats	7 years and younger	8 through 15 years	law states no preference for rear seat	exempt	no	"This requirement does not apply to children who are being transported in vehicles used for livery, sightseeing, taxi, ambulance, funeral, or farm purposes, or who are being transported in a motor vehicle with a seating capacity of more than 8 passengers not including the driver."	NHTSA Vehicle Occupant Protection Laws
FL	yes; effective 6/30/09	6+ years in front seat; 6 through 17 years in all seats	5 years and younger	not permissible	law states no preference for rear seat	not exempt	yes	"This requirement does not apply to children riding in the following types of vehicles: (1) a bus used to transport persons for compensation; (2) a farm tractor or implement of husbandry; (3) a truck having a gross weight of greater than 26,000 lbs.; and (4) motorcycles, mopeds or bicycles. Note: State law does not specifically exempt vehicles that are not required to have safety belts under Federal law"	NHTSA Vehicle Occupant Protection Laws

GA	yes; effective 07/01/96	8 through 17 years in all seats; 18+ years in front seat	7 years and younger and 57 inches or less	more than 57 inches	7 years and younger must be in rear seat if available	taxis exempt, rideshare not exempt	taxis exempt, rideshare not	"...all rideshare services must properly restrain front seat occupants 18 and older and each child regardless of seating position. Failure to do so may result in a fine and the record of court disposition being sent to Department of Driver Services, resulting in points assessed to the ride share driver's license.; For purposes of this requirement, motor vehicle includes a passenger automobile, a van, or a pickup truck. However, this term does not include a taxicab or public transit vehicle."	http://www.gahighwaysafety.org/campaigns/child-passenger-safety/car-seat-laws-and-rideshare-services/
HI	yes; effective 12/16/85	8+ years in all seats	3 years and younger in a child restraint; 4 years through 7 years must be in a child restraint or booster seat	4 - 7 years taller than 4'9"; 4 - 7 years at least 40 lbs. seated in a rear seat if there are no available lap/shoulder belts, may be restrained by a lap belt	law states no preference for rear seat	exempt	no	"Operators of emergency, commercial and mass transit vehicles are exempt from the child safety seat requirement."	NHTSA Vehicle Occupant Protection Laws
ID	no	7+ years in all seats	6 years and younger	not permissible	law states no preference for rear seat	exempt	no	"No noncommercial motor vehicle operator shall transport a child who is six (6) years of age or younger in a motor vehicle manufactured with seat belts after January 1, 1966, unless the child is properly secured in a child safety restraint that meets the	http://legislature.search.idaho.gov/search?IW_FIELD_TEXT=seat+belt&IW_DATABAS E=idaho+statutes

								requirements of federal motor vehicle safety standard no. 213."	
IL	yes; effective 07/03/03	16+ years in all seats	7 years and younger	8 through 15 years; children who weigh more than 40 pounds seated in the rear where only a lap belt is available	law states no preference for rear seat	exempt	no	"A person transporting a child under the age of 8 in a motor vehicle shall secure such child in a federally approved child restraint system; For the purposes of this requirement, a "motor vehicle" means: a non-commercial motor vehicle of the first division..."	NHTSA Vehicle Occupant Protection Laws
IN	yes; effective 07/01/98	16+ years in all seats	7 years and younger	8 through 15 years	law states no preference for rear seat	exempt	no	"Additional exemptions include vehicles manufactured without safety belts, a school bus, taxi, public passenger bus, motorcycle, ambulance or other emergency vehicle."	http://www.wcsheriff-in.us/seat_belt_laws.pdf
IA	yes; effective 07/01/86	18+ years in front seat	younger than 1 year and less than 20 pounds in a rear-facing child restraint; 1 through 5 years in a child restraint or a booster seat	6 through 17 years	law states no preference for rear seat	taxicabs/transportation network company vehicles not exempt, but parents/guardian are liable	no	"If a child is being transported in a taxicab in a manner that is not in compliance with requirements, the parent, legal guardian or other responsible adult traveling with the child shall be served with a citation for a violation in lieu of the taxicab operator."	NHTSA Vehicle Occupant Protection Laws

KS	yes; effective 6/10/10 (secondary for rear seat occupants >18)	14+ years in all seats	all children 3 and younger must be in a child restraint; children 4 through 7 who weigh less than 80 pounds and children 4 through 7 who are less than 57 inches tall must be in a child restraint or booster seat	all children 8 - 13 years; children 4 - 7 years who weigh more than 80 pounds, and children 4 - 7 years who are taller than 57 inches	law states no preference for rear seat	not exempt	yes	"A driver of a passenger car who transports a child under the age of 8 shall properly secure such child in a child safety restraint system; A "passenger car" for purposes of the safety belt use act, is defined as a motor vehicle (including vans) manufactured or assembled after January 1, 1968, or a motor vehicle manufactured or assembled prior to 1968 which was manufactured or assembled with safety belts, designed to carry 10 passengers or fewer."	NHTSA Vehicle Occupant Protection Laws
KY	yes; effective 07/20/06	7 and younger and more than 57 inches in all seats; 8+ in all seats	40 inches or less in a child restraint; 7 and younger who are between 40 and 57 inches tall in a booster seat	taller than 57 inches	law states no preference for rear seat	not exempt	yes	"When transporting a child 40 inches in height or less, a driver of a motor vehicle shall secure such child in a federally approved child restraint system. When transporting a child under the age of 7 who is between 40-55 inches in height, a driver of a motor vehicle shall secure such child in a child booster seat."	NHTSA Vehicle Occupant Protection Laws

LA	yes; effective 09/01/95	13+ years in all seats	younger than 1 year or less than 20 pounds in a rear-facing child restraint; 1 - 3 years or 20-39 pounds in a forward-facing child restraint; 4 - 5 years or 40-60 pounds in a booster seat	6 - 12 years or greater than 60 pounds	law states no preference for rear seat	exempt	no	"The term 'motor vehicle' as used in this Section shall not mean the following: bicycle; farm tractor; motorcycle or motor-driven cycle; truck of manufacturer's rating carrying capacity of over 2,000 pounds; ambulance or other emergency vehicle; school bus as defined in R.S. (a) and (b); church bus, private bus, or recreational vehicle which has a passenger capacity of over ten persons; or commercial truck, van, or taxi."	http://legis.la.gov/Legis/Law.aspx?d=88231
ME	yes; effective 09/20/07	18+ years in all seats	less than 40 pounds in a child restraint; 40-80 pounds and less than 8 years in a child restraint or booster seat	8 - 17 years or less than 18 years and more than 4'9"	11 years and younger and less than 100 pounds must be in rear seat if available	exempt	no	"The operator of a taxicab or a limousine is not responsible for securing in a seat belt a passenger transported for a fee..."	http://www.mainelegislature.org/legis/statutes/29-A/title29-Asec2081.html
MD	yes; effective 10/1/97 (secondary for rear seat effective 10/1/13)	16+ years in all seats	7 years and younger and less than 57 inches	8 - 15 years; children who are at least 57 inches	law states no preference for rear seat	exempt	no	"Currently, taxis are exempt from the law. They are not required to transport children using car seats."	mva.maryland.gov
MA	no	13+ years in all seats	7 years and younger and less than 57 inches	8 - 12 years; children who are at least 57 inches tall	law states no preference for rear seat	not exempt	yes(?), but cannot be fined if there is no car seat	"An operator of a motor vehicle who violates the provisions of this section shall be subject to a fine of not more than 25 dollars; provided, however, that said 25 dollar fine shall not apply to an operator of a motor vehicle licensed as a taxi cab not equipped with a	https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90/Section7AA

								child passenger restraint device."	
MI	yes; effective 04/01/00	16+ years in front seat	7 years and younger and less than 57 inches	8 through 15 years; children who are at least 57 inches tall	3 years and younger must be in the rear seat if available	exempt	no	"This section does not apply if the motor vehicle being driven is a bus, school bus, taxicab, moped, motorcycle, or other motor vehicle not required to be equipped with safety belts under federal law or regulations."	http://www.legislature.mi.gov/(S(1105n3dxntwqynfd1yywymav))/mileg.aspx?page=GetObject&objectname=mcl-257-710d
MN	yes; effective 06/09/09	7 and younger and more than 57 inches in all seats; 8+ in all seats	7 years and younger and less than 57 inches	not permissible	law states no preference for rear seat	exempt	no	"EXEMPTIONS: Children riding in a motor vehicle for hire, including a taxi, airport limousine or bus, but excluding a rented, leased or borrowed motor vehicle."	https://dps.mn.gov/division/s/ots/laws/Pages/child-passenger-safety.aspx
MS	yes; effective 05/27/06	7+ years in front seat	3 years and younger must be in a child restraint; 4 through 6 years and either less than 57 inches or less than 65 pounds must be in a booster seat	6 years and younger who either weigh 65 lbs. or more or are 57 inches or taller	law states no preference for rear seat	not exempt	yes	"Every person transporting a child under the age of 4 shall secure such child in a federally approved child passenger restraint device or system."	NHTSA Vehicle Occupant Protection Laws

MO	no (yes for children <16)	16+ years in front seat	all children who are 3 years and younger and all children who weigh less than 40 lbs. must be in a child restraint; 4 - 7 years who weigh at least 40 lbs. but less than 80 lbs. and are 4'9" or shorter must be in either a child restraint or booster seat; children 4 years and older who weigh at least 80 lbs. or are at least 4 feet and 9 inches tall must be in either a booster seat or safety belt	all children 8 -16 years; all children 4 years and older who weigh 80 pounds or more or who are taller than 4'9"	law states no preference for rear seat	exempt	no	"This requirement does not apply to a public carrier for hire, or to students age 4 or older who are passengers on a school bus designed for carrying 11 passengers or more..."	NHTSA Vehicle Occupant Protection Laws
MT	no	6+ years in all seats	5 years and younger and less than 60 pounds	not permissible	law states no preference for rear seat	exempt	no	"The term "motor vehicle" does not include motorbus, school bus, taxicab, moped, quadricycle, motorcycle, any vehicle that is not required to have a safety belt under Federal law..."	NHTSA Vehicle Occupant Protection Laws
NE	no	18+ years in front seat	5 years and younger	6 through 17 years	law states no preference for rear seat	exempt	no	"These requirements do not apply to persons who are operating taxicabs, mopeds, motorcycles, or motor vehicles manufactured as a 1963 or earlier model year."	NHTSA Vehicle Occupant Protection Laws
NV	no	6+ years in all seats	5 years and younger and 60 pounds or less	not permissible	law states no preference for rear seat	exempt	no	"This section does not apply: To a person who is transporting a child in a means of public transportation, including a taxi, school bus or emergency vehicle."	http://www.leg.state.nv.us/nrs/nrs-484B.html#NRS484BSec157

NH	no law	no law	6 years and younger who are less than 57 inches	7 - 17 years; younger than 7 and at least 57 inches tall	law states no preference for rear seat	exempt	no	"The driver of the motor vehicle is responsible to assure that all children are properly restrained, except in the following: In a vehicle regularly used to transport passengers for hire..."	http://www.nh.gov/safety/divisions/dmv/forms/documents/nhdm.pdf
NJ	yes; effective 05/01/00 (secondary for rear seat occupants; effective 1/20/11)	7 years and younger and more than 57 inches; 8+ in all seats	younger than 2 years and less than 30 lbs. in a rear-facing infant seat; younger than 4 years and less than 40 lbs. in a rear-facing child safety seat until child outgrows manufacturer's top height or weight recommendations or in a forward-facing child safety seat; younger than 8 years and less than 57 inches in a forward-facing child safety seat until child outgrows manufacturer's top height or weight recommendations of booster seat	not permissible	children 7 years and younger and less than 57 inches must be in the rear seat if available, no child shall be secured in a rear facing infant seat in a front seat of any motor vehicle which is equipped with a passenger-side airbag that is not disabled	not exempt	yes	"Every person operating a motor vehicle, other than a school bus, equipped with safety belts or a Lower Anchors and Tethers for Children system (LATCH) who is transporting a child on roadways, streets or highways of this State, shall secure the child in a child passenger restraint system or booster seat..."	http://www.njleg.state.nj.us/2014/Bills/PL15/50_.PDF
NM	yes; effective 01/01/86	18+ years in all seats	younger than 1 year in a rear-facing child restraint; 1 - 4 years or less than 40 lbs. in a child restraint; 5 - 6 or less than 60 lbs. in a booster seat	7 through 17 years	children younger than one year in a rear-facing child restraint must be in the rear seat if available	exempt	no	"A person shall not operate a passenger car, van or pickup truck in this state, except for an authorized emergency vehicle, public transportation or a school bus, unless all passengers less than 18 years of age are properly restrained."	http://law.justia.com/codes/new-mexico/2006/nmrc/jd_66-7-369-1866f.html

NY	yes; effective 12/01/84	16+ years in front seat	3 and younger unless they weigh more than 40 pounds and are seated where there is no available lap/shoulder belt; 4 through 7 years unless they are seated where there is no available lap/shoulder belt	8 - 15 years; children who weigh more than 40 lbs. or children 4 - 7 years in a seating position where there is no available lap/shoulder belt	law states no preference for rear seat	exempt	no	"The term 'motor vehicle' does not include a bus, a school bus (except when carrying children under 4 years old), an authorized emergency vehicle, a taxi or liveries."	NHTSA Vehicle Occupant Protection Laws
NC	yes; effective 12/01/06 (secondary for rear seat occupants)	16+ years in all seats	7 years and younger and less than 80 pounds	8 through 15 years + children 40-80 lbs. in seats without shoulder belts	children 4 years and younger who weigh less than 40 lbs. must be in the rear seat unless the front passenger airbag is deactivated or the restraint is designed for use with airbags	not exempt	yes	"A person who is transporting a person younger than 16 years old shall properly secure such persons in either a federally approved child passenger restraint system or safety belt."	NHTSA Vehicle Occupant Protection Laws
ND	no	18+ years in front seat	6 years and younger and less than 57 inches or less than 80 pounds	7 - 17 years; 6 years and younger and at least 57 inches tall and at least 80 lbs.; 6 years and younger and at least 40 lbs., if there are no available lap/shoulder belts, may be	law states no preference for rear seat	not exempt	yes	"If a child, under seven years of age, is present in any motor vehicle, that motor vehicle must be equipped with at least one child restraint system for each such child."	http://www.legis.nd.gov/cencode/t39c21.pdf#nameddest=39-21-41p2

				restrained by a lap belt					
OH	no	8 - 14 in all seats; 15+ years in front seat	3 years and younger or less than 40 lbs. in child restraint; 4 through 7 years who weigh 40 lbs. or more and who are shorter than 57 inches in a child restraint or booster seat	8 - 14 years	law states no preference for rear seat	exempt	no	"When any child who is in either or both of the following categories is being transported in a motor vehicle, other than a taxicab or public safety vehicle...that is required by the United States department of transportation to be equipped with seat belts at the time of manufacture or assembly, the operator of the motor vehicle shall have the child properly secured in accordance with the manufacturer's instructions in a child restraint system..."	http://codes.ohio.gov/orc/4511.81
OK	yes; effective 11/01/97	9+ years in front seat	younger than 2 years or until a child outgrows the manufacturer's top height or weight recommendations in a rear-facing child restraint; younger than 4 years in a child restraint; 4 - 7 years, if not taller than 4 feet 9 inches, in a child restraint or booster seat	8 years; children who are taller than 4 feet 9 inches	law states no preference for rear seat	exempt	no	"The provisions of this section shall not apply to: The driver of a school bus, taxicab, moped, motorcycle, or other motor vehicle not required to be equipped with safety belts pursuant to state or federal laws..."	http://www.oklegislature.gov/osStatuesTitle.aspx

OR	yes; effective 12/07/90	16+ years in all seats	younger than 1 year, regardless of weight, or 20 lbs. or less must be in a rear facing child restraint; 7 or younger: 40 lbs. or less must be in a child restraint; more than 40 lbs. but 4 feet and 9 inches or less must be in a booster seat	taller than 4 feet and 9 inches; 8 through 15	law states no preference for rear seat	not exempt	yes	"A child under one year of age, regardless of weight, or a person who weighs 20 lbs., or less shall be properly secured with a rear-facing child safety system."	NHTSA Vehicle Occupant Protection Laws
PA	no (yes for children <18 years)	18+ years in front seat	younger than 2 years in a rear facing child restraint until a child outgrows the manufacturer's top height or weight recommendations; 2 - 3 years in a forward-facing child safety seat; 4 - 7 years in a booster seat	8 through 17 years in all seats	law states no preference for rear seat	not exempt	yes	"Any person who is operating a passenger car, Class I truck, Class II truck, classic motor vehicle, antique motor vehicle or motor home and who transports a child under four years of age anywhere in the motor vehicle, including the cargo area, shall fasten such child securely in a child passenger restraint system..."	http://www.legis.state.pa.us/WU01/LI/LI/CT/PDF/75/75.PDF
RI	yes; effective 6/30/11	18+ years in all seats	7 years and younger and less than 57 inches and less than 80 pounds	7 years and younger who either weigh 80 lbs. or more or are at least 57 inches tall; 8 - 17	children 7 and younger must be in rear seat if available	not exempt	yes	"A child under the age of 8 years, less than 57 inches in height and less than 80 lbs., shall be secured in a federally approved child passenger restraint system in the rear seat."	NHTSA Vehicle Occupant Protection Laws

SC	yes; effective 12/09/0517	6+ years in all seats	younger than 1 year or less than 20 pounds in a rear-facing child restraint; 1 through 5 years and 20-39 pounds in a forward-facing child restraint; 1 through 5 years and 40-80 pounds in a booster seat secured by lap-shoulder belt (lap belt alone is impermissible)	1 - 5 years and 80+ lbs. or any child 5 years and younger if the child's knees bend over the seat edge when sitting up straight with his/her back firmly against the seat back	children 5 years and younger must be in rear seat if available	exempt	no	"The requirement to wear a child restraint system does not apply to: taxi drivers..."	NHTSA Vehicle Occupant Protection Laws
SD	no	18+ years in front seat	5 years and younger and less than 40 pounds	5 through 17 years; all children 40+ pounds, regardless of age	law states no preference for rear seat	not exempt	yes	"Any operator of a passenger vehicle transporting a child under the age of 5 shall secure the child in a child passenger restraint system; A "passenger vehicle" is defined as any self-propelled vehicle intended primarily for use and operation on the public highways including passenger cars, stations wagons, vans, taxicabs..."	NHTSA Vehicle Occupant Protection Laws
TN	yes; effective 07/01/04	16+ years in front seat	younger than 1 year or 20 lbs. or less in a rear-facing child restraint; 1 - 3 years and 20+ lbs. in a forward-facing child restraint; 4 - 8 years and less than 4'9" in a booster seat	9 through 15 years or any child 12 or younger who is 4'9" or taller	children 8 years and younger and less than 4'9" must be in rear seat if available; rear seat recommended for children 9 - 12	exempt	no	"No person shall operate a passenger motor vehicle unless the driver and all front seat passengers age 4 years or older are restrained by safety belts...;The term 'passenger motor vehicle' means a vehicle...not used as a public or livery conveyance for passengers."	NHTSA Vehicle Occupant Protection Laws

TX	yes; effective 09/01/85	7 years and younger, 57 inches or taller; 8+ years in all seats	7 years and younger and less than 57 inches	not permissible	law states no preference for rear seat	exempt	no	"These requirements do not apply to: (1) children who are being transported in emergency or law enforcement vehicles; (2) children being transported in passenger for hire vehicles..."	NHTSA Vehicle Occupant Protection Laws
UT	yes; effective 05/12/15 - 07/01/18	16+ years in all seats	7 years and younger and shorter than 57 inches	8 - 15 years; all children 57 inches or taller	law states no preference for rear seat	exempt	no	"Exemptions: These requirements do not apply to: (1) children being transported as passengers for hire"	https://le.utah.gov/xcode/Title41/Chapter6A/41-6a-S1803.html
VT	no	18+ years in all seats	younger than 1 year or less than 20 lbs. in a rear-facing child restraint; 1 - 7 and more than 20 lbs. in a child restraint or booster seat	8 - 17 years and more than 20 lbs.	children 1 year and younger or less than 20 lbs. must be in the rear seat unless the front passenger airbag is deactivated	exempt	no	"These requirements do not apply to: children being transported as passengers for hire..."	NHTSA Vehicle Occupant Protection Laws
VA	no	18+ years in front seat	7 years and younger	8 - 17 years	children in rear-facing devices must be in a rear seat if available; if not available, they may be placed in front only if front passenger airbag is deactivated	exempt	no	"Nothing in this section shall apply to taxicabs, school buses, executive sedans, or limousines..."	http://law.lis.virginia.gov/vacode/46.2-1095

WA	yes; effective 07/01/02	16+ years in all seats	7 years and younger and less than 4'9"	8 - 15; 7 years and younger and 4'9" or taller; children who weigh more than 40 lbs. in a seating position where only a lap belt is available	12 years and younger must be in rear seat if practical	exempt	no	"These requirements do not apply to: for hire vehicles..."	NHTSA Vehicle Occupant Protection Laws
WV	yes; effective 07/1/2013	8+ years in front seat; 8 through 17 years in all seats	7 years and younger and less than 4'9"	7 years and younger and 4'9" or taller	law states no preference for rear seat	exempt	no	"Every driver who transports a child under the age of eight years in a passenger automobile...other than one operated for hire shall...provide for the protection of the child by properly placing, maintaining and securing the child in a child passenger safety device system..."	http://www.legis.state.wv.us/WVCODE/ChapterEntire.cfm?chap=17c&art=15&section=46#15%2315
WI	yes; effective 06/30/09	8+ years in all seats	children younger than 1 and all children who weigh less than 20 lbs. required to be in a rear-facing child restraint; children 1 - 3 years who weigh at least 20 lbs. but less than 40 lbs. required to be in a rear-facing or a forward-facing child restraint; children 4 - 7 who both weigh at least 40 lbs. but less than 80 lbs. and are less than 57 inches tall required to be in a forward-facing child	8 years and younger and more than 80 pounds and 57 inches or taller	children 3 and younger must be in a rear seat, if available	exempt	no	"This subsection does not apply if the motor vehicle is a taxicab or is not required to be equipped with safety belts..."	http://wisconsindot.gov/Documents/safety/education/child-safety/347.pdf

			restraint or booster seat						
WY	no	9+ years in all seats	8 years and younger	not permissible	children 8 years and younger must be in the rear seat if available	exempt	no	"'Child safety restraint system' means any device which is designed to protect, hold or restrain a child in a privately owned, leased or rented noncommercial passenger vehicle..."	http://legisweb.state.wy.us/LSOWEB/StatutesDownload.aspx

Appendix D: Focus Group Findings

Introduction

Research Objectives

The use of ride-sharing services such as Uber and Lyft is becoming an increasingly popular method of transportation. Related to the increased use, a growing concern for rideshare users who are parents of young children is how to safely transport their children when using these services. With the exception of a car seat provision program being piloted by Uber in four major U.S. cities, rideshare vehicles do not generally provide child safety seats. Combined with the increasing size and weight of child safety seats that improve safety but reduce portability, this poses a serious concern for caregivers who want to protect their children during day-to-day travel and in travel situations such as during vacations. Moreover, policies and regulations regarding the transportation of children in rideshare vehicles are minimal and unclear. This research project was undertaken to explore the feasibility and challenges experienced by rideshare drivers and users when using child safety seats in rideshare vehicles.

State laws, rideshare company policies, and user and driver perceptions are factors surrounding the issue. Understanding drivers' and users' knowledge and interpretation of child passenger safety laws and rideshare companies' policies provide insight into potential barriers and facilitators to transporting children in rideshare vehicles. Additionally, inquiring into drivers' and users' general perceptions of the rideshare industry and its potential capabilities of providing child safety seats can assist in identifying a current or future need for these types of services. To better understand these influencing factors, the research team conducted multiple focus groups with rideshare drivers and users in several Texas cities.

As a precursor to the focus groups, researchers conducted a comprehensive review of online discussion forums where rideshare drivers and users exchanged questions and experiences regarding the transportation of children in rideshare vehicles. Forum participants raised questions about liability issues surrounding transporting children in rideshare vehicles. Drivers and users alike inquired about whether rideshare companies have child passenger safety policies in place and how viable it is for users to bring their own child safety seat in a ride. The conversations also provided anecdotal information regarding drivers' and users' previous experiences in transporting or attempting to transport children in rideshare vehicles. The forum review indicated that there is widespread uncertainty about the applicability of state child passenger safety laws to rideshare vehicles as well as questions about the feasibility of car seat use in these vehicles. The conversation threads in these forums helped inform the research team of specific issues to raise during the focus group sessions.

Study Method

Group Locations

Six focus groups were conducted in three Texas cities – College Station, Houston, and Dallas. In College Station and Houston, the groups were held in conference rooms of office buildings at Texas A&M Transportation Institute (TTI). The group in Dallas was held in the private home of parents who had used rideshare services while traveling. All of the groups were held in the evening on weekdays to give participants ample time to arrive after work.

Pilot Group

A pilot focus group was conducted with TTI staff members to refine the formatting and verbiage of the discussion guide and to ensure that timing of the discussion was appropriate. Outcomes of the pilot group included adjusting the order of discussion topics, re-phrasing some language in the discussion guide, and confirming that discussion topics were salient to participants.

Recruiting

Participants were recruited by posting flyers on various social media websites and e-mail lists, and through personal contact and word-of-mouth. The criteria for rideshare drivers were that they either currently drove or had recently driven for a rideshare company. The initial criteria for rideshare users required that they (1) were parents to car seat-aged child/children, and (2) had used or considered using a rideshare service with or without their child/children. After conducting the first rideshare users focus group, the inclusion criteria was revised to require that they had experience using a rideshare service at least once, with or without their children. The participants were invited to take part in a discussion lasting no longer than two hours that focused on the topic of child safety seat use in rideshare vehicles and were compensated for their time.

Of the 35 total participants, 19 were male and 16 were female. Separate focus groups were conducted with drivers and users in College Station. The focus group in Houston consisted of rideshare drivers and the group in Dallas consisted of parents of car seat-aged children.

Conducting the Groups

As participants arrived, they were seated at a conference table and asked to read over required Institutional Review Board (IRB) forms that described the study protocol and asked for their consent to be involved in the research. Once consent was obtained, the discussions began.

Each group was facilitated by a moderator and an assistant. The moderator led the discussion and the assistant prepared the room, took notes, operated the audio recording equipment, and distributed the compensation to participants.

After introductory comments, the following topics were introduced and discussed:

Rideshare Drivers Discussion Topics

- Experiences with rideshare driving
- Opinions about rideshare services and companies

- Experiences and opinions on transporting children in rideshare vehicles
- Knowledge about rideshare companies' policies and state laws regarding transporting children
- Recommendations regarding transporting children in rideshare vehicles

Rideshare Users Discussion Topics

- Rideshare use
- Opinions about rideshare services and companies
- Experiences and opinions on transporting children in rideshare vehicles
- Personal use of child safety seats and knowledge of state laws regarding child passenger safety
- Recommendations regarding transporting children in rideshare vehicles

Analysis

The discussions from the six focus groups were taped, transcribed verbatim, and summarized. Transcripts and observational notes were analyzed for noteworthy ideas, commonalities, and consensus, or lack thereof, for each topic.

Participant Warm Up Discussion

Drivers

To introduce the topic of rideshare services before discussing the specifics of car seat use, the conversation began by asking drivers general questions about their reasons for driving for rideshare companies, their experiences while driving, and their opinions of the rideshare industry as a whole.

Driver participants drove for both Uber and Lyft and the amount of time they had been driving for the companies ranged from about two weeks to more than two years. When asked what their motives were for driving for rideshare companies, the most frequent responses given were that it served as a source of supplemental income and it was ideal because of the schedule flexibility. The drivers' professions varied and included college students, professionals with day jobs, self-employed individuals, and retirees. All drivers expressed that having autonomy over their driving schedules made rideshare driving an ideal way to make money during their free time. Several drivers also claimed to enjoy meeting and interacting with new people and that driving for rideshare gave them the opportunity to do so.

There was a notable difference in responses from College Station and Houston drivers regarding the most common types of rides they provided. The nature of the rides that College Station drivers provided was largely influenced by the college town culture associated with Texas A&M University. Drivers in College Station indicated that the majority of the rides they provided were to college students partaking in social activities such as going to and from bars and college football games. Additionally, some College Station drivers reported that they gave rides to airport travelers, out-of-town visitors who were unfamiliar with the city, and college students traveling across campus or the town. Conversely, drivers in Houston indicated that they provided

a more evenly distributed array of ride types. Houston drivers claimed that several of their clients were people traveling to and from the airports but that they also gave rides to people partaking in social activities, running errands around the city, college students traveling across campus at the University of Houston, and also to children for after-school or other activities.

The moderator asked drivers to describe how they perceived themselves as rideshare company drivers. All responded that they considered themselves to be better than average drivers, some even using the word “professional.” The drivers indicated that they are generally safer and more defensive while driving and that they become more efficient as they learn to navigate new areas of their cities. Several also expressed that they always strive to be courteous and exercise patience with customers. All drivers agreed that they adopted these behaviors while driving to improve their customer ratings, be conscientious of passengers’ safety, and give their passengers overall pleasant experiences.

The drivers had overwhelmingly positive opinions about the concept of rideshare as a service. They expressed their view that they were doing their part in providing a public service by helping to keep drunk drivers off the road. Several described it as “innovative,” “brilliant,” and “revolutionary” in changing how people use public transportation. To add to this sentiment, many also claimed that ride-sharing was a highly preferable service to using taxis.

“For the consumer, it is a great idea. It is a revolutionary idea.”

“In every other way, rideshare is better [than taxis] because you are in the loop with the riders. You can see on the map on the phone where the rider is and where they are coming from.”

“I think Uber and rideshare is great for mid- to small-sized towns like College Station. It does not have the population to justify a full-time cab service. Before Uber...some people would drive drunk or walk to their friend’s dorm. Now there is a much better way to do that.”

“Once I was parked waiting for a ride, and this cop said ‘We appreciate what you all are doing. You all are saving so many lives. And you all are making our jobs easier.’”

We learned from these introductory conversations that rideshare drivers have overall very positive perceptions of the rideshare industry and their roles within it. Driving provides them with a convenient source of supplemental income and their enjoyment in interacting with people seems to contribute to high job satisfaction. The drivers appeared to be in consensus that rideshare has had a largely positive influence on society due to its contribution in revolutionizing the public transportation industry.

Users

Parent participants were asked similar introductory questions at the start of their discussions regarding their experiences using rideshare services and their perception of the industry as a whole. This opening conversation encouraged participants to answer the questions from the perspective of rideshare users rather than parents.

Users had the same reasons for using rideshare services, regardless of their location. The most common form of rideshare usage was out of town commuting, whether for business or personal travel. This entailed transport between airports, hotels, and vacation destinations. Another common reason for use was for social purposes, particularly when alcohol was involved. A few users also mentioned the fact that it was an ideal method of transportation when a personal vehicle was unavailable.

“I like it. You can never be stuck anywhere and you do not have to bug someone to leave whatever they are doing to come take me where I need to go.”

“Not every town has taxis available, or enough...especially in a small town with a university... It is a great way to keep people from drinking and driving. It has become embedded in the culture.”

The conversation then shifted to inquiring about users’ opinions of rideshare services based on their experiences. The users unanimously agreed that ride-sharing is a convenient and relatively cheap method of transportation. Some compared them to taxicabs and expressed their preference for rideshare. Perceptions of rideshare drivers were overall positive, though a couple of users recalled specific incidences when they had a negative encounter with a driver. In general, the users felt that most drivers were ordinary people who were often helpful, friendly, and kept their vehicles clean. In each discussion, one or more participants would point out that user rating systems held rideshare drivers to a certain standard of accountability, and many felt that this was a very positive aspect of rideshare services. Users in Dallas added that they thought this sense of accountability made rideshare drivers safer and more responsible when driving. However, users in College Station challenged this sentiment in saying that driving for a rideshare company did “not necessarily” cause drivers to be safer.

Though users had overall positive perceptions of rideshare services, there was a caveat that came up in one of the discussions. A few users in Dallas made the argument that although rideshare was cheap and convenient to use when traveling, it was not feasible to use when traveling with family and particularly children. These warm-up conversations set the stage for transitioning the discussions to the topic of transporting children in rideshare vehicles.

Results

Rideshare Driving With Car Seat-Aged Children

Twelve of the 16 driver participants had provided rides to children. The ages of the children varied from infants to elementary-aged. Of the 12 who had provided rides to children, six said that the children were not secured in seats and five said that the parents brought their own seats. One in College Station who had young children of his own said that he carried his children’s seats in his vehicle and installed them for two of the rides he provided to parents with young children. For all of the rides where parents provided their own child safety seats, the drivers said that the parents installed the seats themselves. Four of the drivers said that they offered to assist the parents with the installation, and three said they double checked the installation. These drivers also indicated that the time taken to install the seats did not exceed five minutes and that

waiting for the parents to install the seats did not cause them any inconvenience. They also said that they did not experience any compatibility issues between the child safety seats and their vehicles.

Drivers that had experienced providing rides to children without child safety seats were asked how the children were secured during the ride. The majority of children transported in these rides were secured in a seatbelt in the back seat of the vehicles. One driver in Houston stated that he gave a ride to a parent who held their toddler in their lap for the duration of the ride. When asked how he felt about the parent holding the child in their lap, the driver indicated that he was comfortable with the situation and assumed that a car seat was not a viable option for that ride.

The majority of drivers who had no experience providing rides to children said they would not do so. Some said they may or may not provide rides to children depending on factors such as the age and size of the child or the nature of the situation.

When all drivers were asked if they had ever declined rides to users with children, none responded that they had done so. When asked if they would transport a child without a car seat, the majority of drivers responded that they would not. Several claimed that it depended on the age of the child. Drivers who expressed this opinion stated that they would feel comfortable letting a child ride in their vehicle without a car seat if the child appeared old enough to sit in a booster. One Houston driver expressed that she would not provide a ride to any child regardless of their age or size due to uncertainties regarding liability.

“No, I do not want to take on more responsibility. To worry about a child, the car seat, how old they are, should they be in a booster, I do not want that responsibility.”

The moderator asked drivers to indicate if they were familiar with Texas child restraint laws. Regarding age/size specifications of the law, only two drivers claimed to definitively know. Some believed they knew and tried guessing the law’s specifications, while most admitted to not know at all. The participants were then asked if they believed the law allowed children under the age of eight to use a seatbelt in the backseat. A few drivers said they did not believe this was legal, while most were unsure. Lastly, the moderator asked the drivers to indicate if they believed the state child restraint laws applied to them as rideshare drivers. The majority believed that the laws did apply to them and the remainder were unsure.

Using Rideshare with Car Seat-Aged Children

Only seven of the 19 rideshare users who were parents to car seat-aged children had used rideshare services with their children; four of these parents resided in Dallas and three in College Station. Four of these responded that they brought and installed their own personal child seats for the rides, one of which was a belt-positioning booster seat. While none of the drivers assisted, they were described as being very friendly and patient while the parents installed and uninstalled the seats. One mother said that her driver offered assistance. Most of the parents claimed that time was not an issue and that the seat installation process took no more than a few minutes. However, another claimed that the process was stressful for her because she and her family had

been in a hurry to board a flight at the airport. The other three parents who had used rideshare with their children opted to not bring their own car seats; two secured their children in seatbelts and one held the child in their lap for the duration of the ride.

The remaining 12 parents who participated in the focus groups had never used rideshare with their car seat-aged children, and their reasons for not having done so varied. Some mentioned that even if they were carrying their own car seat with them, they would have no way of knowing whether the Uber vehicle they requested could accommodate them. Several said they had multiple car seat-aged children and carrying multiple car seats was a hassle and not a viable option.

“It was six people, four adults, two kids [in car seats]. Any Uber car would not fit all of us. So, obviously it makes more sense to rent a car.”

“My sister has a kid, so three kids, and installing the car seats, would be too much. So we rented the car which is much more expensive than Uber...”

“Three or four of mine are in car seats. I am not carrying around those car seats. Having to install all the seats is a lot...”

The majority of parents agreed that they had never used rideshare with their children because they did not know if it was even an option or what the logistics of those scenarios would be. Some of these expressed their belief that rideshare drivers were not allowed to provide rides to children. Others claimed that the uncertainty and unfamiliarity of the situation was their biggest obstacle.

“...I would not put my kids in a car without a car seat if they needed one. I was in a terrible accident around the corner from my house. You cannot be like ‘oh it’s just right there’ or ‘it’s just around the corner.’ That is why I have never taken my kids, because I would not know how to deal with that.”

A couple of parents also voiced their uneasiness about allowing their child to be transported in a stranger’s vehicle, one saying, “I am self-conscious about putting my kids in cars with strange people.” The parents offered opinions as to their uncertainties about driver cleanliness, driving habits, and behaviors. One example of an undesirable behavior that parents did not want their children exposed to was a driver smoking in his/her vehicle.

The discussion was guided toward parents’ personal usage of child safety seats. All of the parents claimed to always, or almost always, secure their children in child safety seats on a daily basis. When asked how many seats they had per child in the household, the majority of parents claimed that they kept a seat permanently installed in each family vehicle. Parents with children in booster seats said that they only owned one booster seat, as it is easy to move from vehicle to vehicle. The handful of parents who only had one seat per child stated that the seat stayed installed in one vehicle and rarely switched vehicles.

The moderator asked parents if there were any existing and/or hypothetical situations in which they did not or would not secure their children in child safety seats. A handful of parents said the few times they had not used child safety seats included scenarios in which they were driving short distances, there were too many children to transport, and when they were traveling and did not want to transport a seat in addition to their luggage. Many of the parents seemed hesitant to say that they would transport their children without child safety seats and responded that the only scenario in which they might do so was in the event of an emergency. One parent described this type of situation as “life or limb... It would have to be a dire emergency.” Several parents also noted that their decision to not use a seat depended on the age of the child and agreed that if their child was old enough to sit in a booster, they felt more comfortable letting them sit in a vehicle without a seat.

While on the topic of personal usage of child safety seats, the participants were asked if there were any methods of public transportation in which they did not use their car seats. A couple of parents reported they use their seats on airplanes. Some parents responded that their children did not use car seats on school and public buses. Others referred to shuttles, such as those used to transport airport passengers to terminals, and said their children either did not sit in car seats or that some shuttles provided car seats upon request. For other methods of public transportation, such as trollies, ferries, or subways, parents said their children either sat in their own seats, on the parent’s lap, or remained in their strollers.

The last segment of the discussion focused on parents’ knowledge of Texas child safety seat laws. Participants were asked to indicate if they knew the age and size requirements of the Texas child passenger safety law. None in College Station indicated they knew and approximately half of the Dallas participants claimed to know. When asked how many were sure that children must be in car seats while sitting in the backseat, all participants in Dallas raised their hands while none in College Station were sure. When asked how many thought the law allowed children less than eight years of age to use seatbelts while sitting in the backseat, none in Dallas said yes, one in College Station said yes, and the others in College Station were uncertain or said that it would depend on the size of the child. According to Texas state law, children under the age of eight who are shorter than 57 inches should be restrained in an appropriate child safety seat. However, the law does not specify preference for the rear seat of a vehicle.

The parents were then asked if they thought the Texas child seat laws applied to rideshare vehicles and/or taxis. Among the Dallas participants, most thought the laws applied to taxis while none were sure whether they applied to rideshare vehicles. However, all in Dallas agreed that these services should not be exempt from child passenger safety laws. One participant defended this sentiment by saying, “I feel like the law should apply [to rideshare]. A car is a car and an accident is an accident.” In College Station, only one participant thought the laws applied to both rideshare vehicles and taxis. Some in College Station assumed the laws applied to both but were not sure, while the remaining College Station participants did not think the laws applied to either but that they should. Child passenger safety laws do not apply to taxicabs in the state of

Texas; however, the legislation does not define nor make any mention of whether these laws are applicable to rideshare vehicles.

Opinions on Rideshare Policies

The moderator asked the drivers if the rideshare companies they were employed by had policies regarding the transportation of children. The large majority of drivers were unaware of whether any such policies existed. One respondent in each group made a comment that they either knew or assumed that there were such policies in place but that they were buried in the companies' vast terms of service and therefore difficult to find.

“When you sign up, or have [to review] updates to their policies, it is 50 pages. All you have to do is select ‘agree’. You aren’t going to go through all that paperwork to accept your next ride. I am sure it is buried in there somewhere.”

When asked if the rideshare companies had ever brought the topic of transporting children to their attention, all drivers responded that they had not. Each group made note of how the introductory videos provided by Uber and Lyft were very short and made no mention of children.

There was an overwhelming consensus from all of the rideshare drivers who participated in the focus groups that the training received from their respective companies was minimal and their policies were unclear. Drivers in each discussion alluded to rideshare companies' massive terms of service guidelines and how difficult it was to comb the documents in order to find information. All drivers agreed that rideshare companies' rules and policies, specifically those regarding the transport of children, should be more easily accessible and brought to drivers' attention upon signing up with the service. Several drivers also thought that training videos regarding the handling of child passenger situations would be beneficial for the companies to provide to their drivers.

Parents agreed that policies and regulations regarding the transportation of children in rideshare vehicles need to be developed and implemented. Many believed state legislation should address rideshare vehicles in their CPS laws, and all agreed that rideshare companies should establish clearer policies about the transportation of children.

Opinions on Seat Provision in Rideshare Vehicles

Driver participants were able to provide recommendations on what they thought a functional rideshare car seat service would look like, regardless of whether or not they believed that they would participate in providing such a service. All drivers agreed that providing car seats in their vehicles should be optional for rideshare drivers and that those who opted to provide this service should be able to collect an extra fee. Of the drivers who said they would consider providing this service, all believed that the rideshare companies should provide the seats to the drivers and that the drivers should be allowed to decide when they wanted to provide the seats. Drivers mentioned that one of the factors to consider related to providing car seats was space needed in their vehicle to store the seats when they were not installed.

The drivers proposed that rideshare companies incorporate features into their mobile applications that would facilitate the process of providing and requesting car seats in rideshare vehicles. Commonly recommended features included that drivers carrying car seats be distinguishable on the mobile applications and that users would be able to request these drivers. All drivers also agreed that drivers providing the car seat service should receive extra training in car seat provision/installation and that these credentials be displayed in their driver profiles on the mobile apps.

Parent participants held opinions similar to the drivers' regarding the provision of child safety seats in rideshare vehicles and agreed that providing car seats should be optional for rideshare drivers. The majority of parents said they would consider using rideshare with their children if car seats were pre-installed or provided, but there were some contingencies that would affect their decision to do so. They agreed that drivers should have some sort of training prior to providing car seats. Opinions on how comprehensive the training should be varied among parents; some felt that drivers should be trained in CPS knowledge and practices, while others felt that simply training drivers on CPS legislation would suffice.

“They need to know how to drive correctly and safely, making certain stops. They need to know how to drive when the kids are crying and making a lot of noise. Sometimes as a parents when kids are crying you get a little unfocused on the driving cause you pay attention to the kids.”

“If [the rideshare vehicles] don't have car seats parents would know how to install, they might need [the] driver's help.”

Several parents also favored the idea of the drivers' credentials being displayed on their rideshare profiles for users to see. The parents unanimously agreed that the mobile app should enable them to specify how many and what type of child safety seat(s) they need when requesting a ride and to see the type of seat(s) and vehicle that their driver provides when a ride is accepted.

Opinions on Liability

All participants were asked to share their perceptions on who would assume responsibility and liability in the scenario where children are transported in rideshare vehicles. Drivers held the unanimous opinion that the caretaker is primarily responsible for ensuring that the child is properly and safely secured in the vehicle. A few believed that they as drivers would also assume secondary responsibility for ensuring the child's safety. However, almost all of the drivers believed they would be held liable in the event that a child was injured while riding in their vehicle. About half of these thought that their liability would be contingent upon whether or not the incident was their fault. Two drivers thought they should be able to claim ignorance of the law and be exempt from liability due to their lack of knowledge about child restraint requirements. This sentiment was largely disagreed with by their fellow drivers.

Half of the parent participants believed that both driver and parent should be held responsible for ensuring a child is properly restrained in a rideshare vehicle but were uncertain as to who would actually be held liable in the event of a crash. They explained that the caretaker is primarily

responsible but that the driver should assume responsibility of ensuring the child is properly restrained if the caretaker fails to do so. A few of these parents questioned whether rideshare drivers' right of refusal played a role in determining who was to be held liable. The remaining half of parents was evenly split in their views on who should be held liable. One group believed that, according to the law, drivers are responsible for the safety of any passengers under 18 years of age and thus should be held liable if a child was injured in their vehicle. A parent defended this sentiment by stating, "If it's their vehicle, they make the rules." The other parents held starkly oppositional views and believed that caretakers should be the only party held liable for the safety of their children in rideshare vehicles. They claimed that drivers' only responsibilities should be to educate themselves on child restraint laws and refuse rides to children without car seats so as to keep everyone safe.

Recommendations

The results of the focus group discussions lead to several recommendations. First, clarification of policies regarding the transport of children should be a priority for rideshare companies. Relatedly, drivers and users alike would benefit from more readily accessible terms of service documents that are simpler to navigate when searching for organizations' rules regarding the specific topic of children and car seats. Rideshare companies should also be more proactive in communicating requirements by state for transporting children. This can be accomplished by incorporating relevant training materials and providing them with resources that summarize the child passenger safety laws of each state. Providing this type of information to drivers and users would encourage overall adherence to the law and facilitate better understanding of regulations pertinent to child passenger safety in rideshare vehicles.

Rideshare companies are also recommended to continue developing and piloting car seat provision programs in hopes that these services will one day be available in cities across the United States. The discussions in this study indicated that parents of children of various ages would be willing to use a child safety seat provided by a rideshare service, given that the seat met the age and size requirements of their child. This range of potential clients warrants rideshare companies' provision of various child seats as well as incorporation of mobile app features that would facilitate more specific seat requesting by users. Discussions with driver participants in this study revealed that drivers should be given the option to provide such car seat services and that many would likely participate if incentivized.

Conclusions

Results from the focus groups suggest that child passenger safety in rideshare vehicles is a dawning issue for both drivers and users that will increase in prominence should rideshare services continue to grow in popularity as a method of transportation. Gaps in the knowledge and policies surrounding this topic were identified, and a few potential solutions to address them were posed. In preparation for the focus group discussions a review of policies and regulations found them to be inadequate in their mention of child occupant protection in rideshare vehicles. All but one state in the country do not include rideshare services in their child passenger safety

laws. Moreover, rideshare companies' terms of service policies briefly mention that their drivers are expected to adhere to their state's child passenger safety laws. State laws and rideshare company policies lack sufficient clarity and specificity regarding the issue, and this has led to a growing level of uncertainty amongst rideshare drivers and users alike.

Lack of knowledge and insufficient regulation of child passenger safety in rideshare vehicles are contributing factors to the gap in drivers' and users' awareness of the overall issue. Inexperience in transporting children using rideshare as well as lack of knowledge about state laws resulted in several drivers and parents having little to no perception of the topic. Additionally, unclear company and political policies regarding the topic have led to a range of vastly different interpretations of their meanings being drawn by the public. Drivers and users in the focus groups had varying opinions on the legality of transporting children in rideshare vehicles. There was also much uncertainty about the feasibility and logistics of using a child safety seat in a rideshare vehicle, which several parents perceived as a barrier to using rideshare with their children.

Finally, the research confirmed that there could be a potential need for child seat provision services in the rideshare industry in the future. One-third of the parents in this study had used rideshare services with their children, while those who had not admitted that were inhibited from using rideshare with their children by the uncertainty or infeasibility of the situation. The majority of parents who had not used rideshare with their children confirmed that they would likely use a rideshare car seat provision service given that the ride requesting process met their needs. These results support the conclusion that rideshare companies should continue to develop and expand services that would provide child safety seats to users with children. Additionally, the evidence strongly suggests that state laws be examined for appropriate means of addressing rideshare services and the protection of children using them.

Appendix E: Media Appearances to Support Outreach

- January 11, 2019 With Good Reason Radio: “Keeping Kids Healthy – Riding in Cars with Kids.” <https://www.withgoodreasonradio.org/episode/keeping-kids-healthy/?t=00:21:01>
- November 27, 2018 Collegiate Times Newspaper: “Recent study fuels awareness of child car seat use in rideshare vehicles.” http://www.collegiatetimes.com/news/recent-study-fuels-awareness-of-child-car-seat-use-in/article_ac7256da-f0f2-11e8-8f8f-37695c9c98b5.html
- November 19, 2018 NBC4 TV News, Washington, DC: “Who is Responsible for Providing Car Seats in Rideshare Vehicles?” https://www.nbcwashington.com/news/local/Who-Is-Responsible-for-Providing-Car-Seats-in-Rideshare-Vehicles-500885491.html?_osource=SocialFlowTwt_DCBrand
- November 15, 2018 WUSA9 TV News Washington DC: “It’s a very big mistake’ | Study shows parents skipping proper car seats in rideshares.” <https://www.wusa9.com/article/news/local/its-a-very-big-mistake-study-shows-parents-skipping-proper-car-seats-in-rideshares/65-614837127>
- November 5, 2018 Various CBS Affiliates across the US: “Does Your Child Need a Car Seat in a Cab, Uber or Lyft Car?” <https://newyork.cbslocal.com/2018/11/07/does-your-child-need-a-car-seat-in-a-cab-uber-or-lyft-car/>
- November 2, 2018 WJLA 24/7 TV News Washington: “Car Seat Use Study, Justin Owens, Lead Researcher” <https://cision.criticalmention.com/app/#/clip/public/faebd9aebb4-47a0-ad5c-446cdc5e5363>
- November 2, 2018 WSET News TV 13 Lynchburg: “VT study finds many parents don't use child safety seats in rideshare vehicles” <https://wset.com/news/local/vt-study-finds-many-parents-dont-use-child-safety-seats-in-rideshare-vehicles>
- November 1, 2018 WTOP Radio Washington DC, “Uber-ing with a child: Site details various seat laws around DC, nation” <https://wtop.com/dc-transit/2018/11/uber-ing-with-a-child-site-details-various-seat-laws-around-dc-nation/>

Appendix F: Outreach Website Screenshots

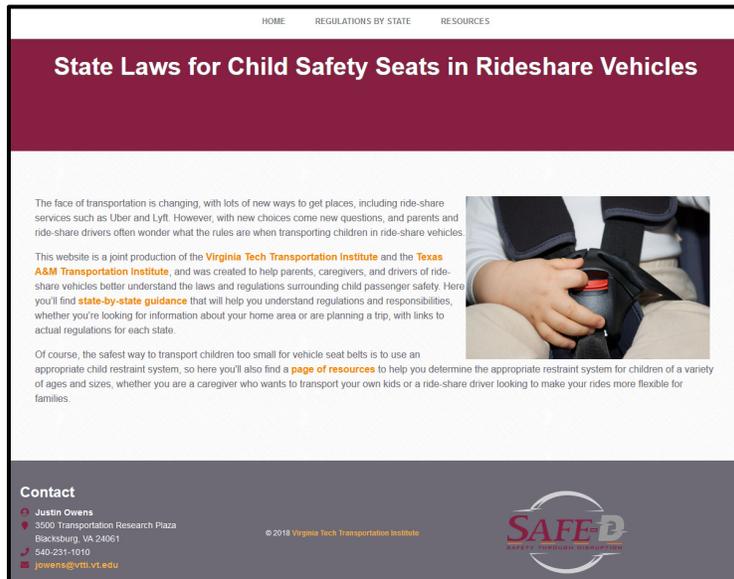


Figure F1. Introduction page for www.kidsridesafe.org.



Figure F2. Clickable map interface.

Virginia

Who is responsible for child safety seat use? The law is unclear. It states that drivers transporting child passengers under the age of 18 must ensure that those children are properly restrained. However, the law does not specify who must provide and install the restraint equipment, or who must secure the child in it. Neither does the law specify whether these requirements apply to rideshare drivers or not.

Restraint requirements by age:

- Under 8: restraint system
- 8-18: seat belt
- Requirements may vary for undersized children

Parents should:

- Provide a federally approved child restraint system that is appropriate to Virginia, as well as the state you may be traveling to;
- OR
- Allow driver to provide federally approved child restraint system;
- AND
- Install or confirm proper installation of seat in vehicle;
- AND
- Secure or confirm that child is secured in restraint.

Drivers should:

- Provide a federally approved child restraint system;
- OR
- Allow parent to provide federally approved child restraint system;
- AND
- Install or confirm proper installation of seat in vehicle;
- AND
- Secure or confirm that child is secured in restraint.

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Figure F3. Summary of information for an example state with link to regulations.

The screenshot shows the Virginia Law website. The main heading is "Code of Virginia". Below it, there is a table of contents and a search bar. The main content area displays the text of § 46.2-1095, which states: "Child restraint devices required when transporting certain children; safety belts for passengers less than 18 years old required." The text includes two subsections, A, detailing the requirements for child restraint devices in motor vehicles.

Figure F4. Example external state .gov site with child passenger safety information.

The screenshot shows a webpage titled "State Laws for Child Safety Seats in Rideshare Vehicles". The page has a dark red header and a white main content area. Below the title, there is a "Resources" section with a list of links to various websites and documents, including "Federal Seat Certification", "Seat Type and Location", "IIHS Child Safety Guide", "Consumer Reports - Car Seat Buying Guide", "Safe Kids Worldwide child seat guidance", "Federal child passenger safety laws", and "NHTSA Traffic Safety Marketing campaigns". At the bottom, there is a "Contact" section with the name Justin Owens, address (3500 Transportation Research Plaza, Blacksburg, VA 24061), phone number (540-231-1010), and email (jowens@vt.edu). The page also features the logo for the Virginia Tech Transportation Institute and the SAFE-D logo.

Figure F5. Page with external links to reputable websites concerning child passenger safety.