

Research Paper

Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities

Jahnvi Chowdary Gutta^{1*}, Bismirty Bhuyan²

ABSTRACT

The use of ride-hailing apps has been on a rise and has transformed the experience of travel. In India, traditional auto-rickshaw drivers frequently depended on unions, like the Auto Rickshaw Drivers Unions to build community ties through routine gatherings and mutual assistance. Nonetheless, the increasing use of ride-hailing applications has transformed this model promoting independent work behaviors focused on enhancing their personal profits. This research examines how the use of ride-hailing applications affects social connectivity among auto drivers. A comparative study was performed between two groups: drivers utilizing traditional techniques and those using ride-hailing applications. By using convenience sampling, auto drivers between the ages of 20 and 60 were approached for this study. Social connectedness scale developed by Lee and Robbins was used to calculate the levels of social connectedness among auto drivers. A questionnaire was prepared in Telugu, English and Kannada languages with questions consisting of their demographic details and questions from social connectedness scale. Statistical methods such as Independent Samples t-test, Mann-Whitney U test, and Cohen's d were calculated to examine the connection between ride-hailing app usage and degrees of social connectedness. Results show that drivers utilizing ride-hailing applications demonstrate markedly reduced social connectedness highlighting possible social and psychological effects of app-based employment. These findings guide suggestions for ride-hailing services to add features that enhance a feeling of community and unity among their users.

Keywords: Ride hailing apps, Social connectedness, Auto drivers, Comparative study

In the era of digitalization, the use of ride-hailing apps has been on a rise and has transformed the experience of travel for both drivers and travelers ("Ride-hailing - Worldwide," 2024). These platforms started off being available as a website and are now available as mobile apps making it easier to connect drivers to customers based on their location, and time of the day (Chen et al., 2023). Notable examples of such services in India include Uber, Ola, and Rapido, which have reshaped how drivers interact with their work and the urban environment. Additionally, regional initiatives like Karnataka's Namma Yatri provide alternative platforms specifically for auto-rickshaw drivers, emphasizing local accessibility and economy.

¹Student, Dept. of Psychology, Amity Institute of Behavioural and Allied Sciences (AIBAS), Bengaluru
<https://orcid.org/0009-0008-1512-6737>

²Assistant Professor, Dept. of Psychology, Amity University, Bengaluru

*Corresponding Author

Received: December 25, 2024; Revision Received: February 08, 2025; Accepted: February 12, 2025

Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities

The adoption of ride-hailing applications has changed how drivers interact with one another, mainly with people who operate taxis and auto rickshaws. Traditionally, drivers in India focused on community bonds encouraged by unions like Auto Rickshaw Drivers Union to meet weekly or monthly at physical meeting spots to conduct regular meetings to address driver's concerns, and to educate them on their rights. These regular meetings indirectly fostered a sense of community engagement, creating more social bonds and a sense of togetherness (Shetty, 2021). Additionally, local auto stands located at various locations in the city provided a social space for drivers to frequently gather, take short breaks, and converse with each other, promoting feelings of togetherness and brotherhood. These gatherings and specific auto stands promote companionship, fellowship, brotherhood and a sense of social identity within the auto driver communities.

With the rise in the use of ride-hailing apps, these traditional practices are under deterioration. With the increase in ride-hailing apps, which promote economy and higher earnings based on the number of ride acceptance in a day, auto drivers are more focusing on maximizing their earning more than following traditional auto stand methods (Chaudhari et al., 2018). These digital platforms encourage them to work independently across various parts of the city instead of focusing on community auto stands. Ride-hailing apps work on an algorithm to scatter auto drivers based on the supply and demand model to match the demands of the customer and reach their maximum earnings forcing them to scatter across the city instead of gathering at familiar auto stands (Zhang et al., 2024). This scattering due to the algorithm interferes with their socializing opportunities causing them to feel lonely and isolated (Mohlmann & Henfridsson, 2019). Drivers are now experiencing fewer shared brakes and reduced participation in the informal meetings which once offered mutual aid, support and brotherhood. This emphasis on earning over community, driven by the app structure is further affecting their social bonds as drivers are forced to prioritize financial goals over social connections (Ramizo Jr & Chotib, 2020; Shetty, 2021).

Most of them are using multiple apps to get more customers and work over their physical and emotional limits to maximize their earnings. This is impacting their emotional and physical wellbeing. Research by Bartel and his colleagues found that drivers who choose to work for longer hours are at a risk of developing obesity as they lack physical activity (Bartel et al., 2019). Most of them choose to not rest, leading to extensive fatigue which in turn increases their chances of clashes and accidents on the road (National Academies of Sciences; Engineering; and Medicine et al., 2016). Most of them choose to drink less water to reduce their urinary breaks but it is increasing their risk of heart attacks and kidney problems along with short term effects like reduced alertness, and impaired cognition (Atsreh Nsiah-Asamoah & Baah Buxton, n.d.).

Ironically, one of the most effective ways to boost both physical and mental well-being is social connection, which is slowly deteriorating in auto driver communities due to their adaptation towards ride-hailing apps. Social connectedness is found to reduce distress, fatigue, and depressive symptoms which are some of the most common symptoms faced by auto drivers due to their lifestyle choices which focus on increasing their earnings (Jonas P. Nitschke et al., 2020; Martino et al., 2015).

Surie and Koduganti studied about the emergence of Ola and Uber platforms in India using in-depth qualitative interviews of Ola and Uber users. Drivers' narratives focused and revealed the diverse shift in terms of economy and employment experiences. Use of these

Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities

apps has given an opportunity for drivers to earn more income, increasing the economy of the drivers, but gig work promoted by these applications are reducing their collective decision making power and decreasing interactions between drivers on a daily basis (Surie & Koduganti, 2016).

Fleitoukh and Toyama conducted a study on taxi and auto-rickshaw drivers in Delhi by using mixed research methods to investigate the impact of applications like Ola and Uber on drivers. It is highly known that these applications provide independence and flexible working hours but participants in this study mentioned dissatisfaction as most of them have to work for extra hours to earn the same amount of money they used to earn by using traditional methods. Most of them prefer picking up customers on the road as it is more convenient than finding pick up points of customers through applications. Drivers are also facing problems with the amount of cancellation done after reaching the pick up point as compensation for diesel is not done by the applications (Fleitoukh & Toyama, 2020).

A study done by Rahman and Mahmud in 2021 pointed out the facts that these applications offer constant customers but drivers lack control over their choice of destination or customers. Their high dependency on these applications will increase their economic sustenance on only these platforms while weakening their traditional practices of sharing resources, referrals and supporting each other in hard times (Abdul Rahman et al., 2021).

While some studies focus on fostering brief social connections between drivers and passengers which lasts for a few minutes to a few hours, there is very little attention given to the importance of developing social connectedness and a sense of community among the drivers themselves as this bond can last for a lifetime which is often overlooked (Berger et al., 2022; Berger et al., 2023).

Thus, it is essential to consider how ride-hailing apps are reshaping social connectedness among auto drivers. This shift from community based working to individualized working has led many drivers to feel more fatigue, isolation and loneliness while disrupting their social time and bonds.

This research explores how ride-hailing apps are impacting the sense of social connectedness among auto drivers and their local communities, as this is an important aspect of social and emotional well-being.

Null hypothesis:

There is no statistically significant difference in social connectedness levels between auto drivers who use ride-hailing applications to obtain customers and those who do not.

Alternative hypothesis:

Auto drivers who do not use ride-hailing applications to obtain customers will exhibit significantly higher levels of social connectedness compared to those who rely on ride-hailing applications.

Sample population

The target population for this study comprises two groups of auto drivers: those who use ride-hailing apps and those who do not. Bengaluru was considered to collect data from auto drivers as this city was a diverse group of auto drivers from various parts of India who came

Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities

in search of work. The sample consists of drivers aged between 20 and 60 years. Using convenient sampling as the selection method, Each participant was approached in person and asked if they were willing to participate in the study. For data collection among ride-hailing app users, drivers were approached either after finishing their booked rides or while they waited for customers. For non-app users, data was gathered by selecting random auto stands within close proximity.

METHODOLOGY

This study uses a mixed-method research design to understand the effect of ride hailing apps on the social connectedness among auto drivers. Mixed method research was used as qualitative and quantitative methods as a standalone would not give a whole picture to analyze and collect data but mixed methods as a medium will use both the research methods to provide a complete picture of the variables by integrating benefits of both the methods. Quantitative data collects numerical data and analyses to find averages, and patterns whereas qualitative methods collect information about why people chose a certain platform to hire customers.

Two different questionnaires were created for ride-hailing app users and non ride-hailing app users to collect their demographic information, social connectedness and a few open ended questions to collect both quantitative and qualitative data. Questions collecting qualitative data were kept optional as many drivers were not willing to answer those questions.

The questionnaire commonly included questions on demographic data and the Social Connectedness Scale developed by Lee and Robbins in 1995. It was created to identify emotional distance and feeling of closeness to self and others. Participants were specifically asked to respond to these questions based on their feelings and experiences with the auto driver communities. This was done to make sure their responses avoided the influence of irrelevant personal life experiences and instead concentrated on professional connections and social connectivity. This scale measured three constructs: connectedness (4 items), affiliation (3 items), and companionship (1 item). Ratings are made on a 6-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). Total score will include the sum of all 8 items which can range from 8 to 48. A greater score will indicate a high social connectedness of a person (Lee & Robbins, 1995). Only questions that differed between the two questionnaires are qualitative questions which were optional for the participants to answer.

To make questionnaires easily available for auto drivers, questions were asked in Telugu, Kannada and English. For drivers who cannot read, questions were read out and their reply was noted manually.

Statistical analysis:

Since both the variables are independent to each other, to check if these two variables are statistically different to each other, an Independent samples t-test was used. This test will help to check the difference between social connectedness among the ride hailing app drivers group and the non ride-hailing app drivers group.

Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities

Jamovi Version 2.6.2 was used to statistically analyze data by conducting independent samples t-test. Along with this, Mann-Whitney U scores and Cohen's d were calculated to determine the statistical difference between two independent variables.

Ethical considerations:

Confidentiality and anonymity of the participant was maintained by collecting first letters of their names and data was stored securely in a password protected file, only accessed by the researcher and the supervisor. No harm was done to the participants during this study and the participant's right to withdraw was explained to the participants at the start of the experiment. Questions which required quantitative data were kept optional and many of the participants chose to not answer these questions as they were not comfortable with answering. Data was collected on a voluntary basis and the permission to use this data in this experiment was collected from the participants.

RESULTS

The study included a total of 100 auto drivers from Bengaluru. The participant's ages ranged from 18 to 60 years, with the majority falling between 45 and 55 years. Demographic data revealed that 80% of the auto drivers in the study were from Karnataka, 19% from Andhra Pradesh and Telangana, and the remaining 1% from other regions of India.

Table 1 represents the results of an independent sample t-test performed on the scores of social connectedness among two independent groups of auto drivers in ride-hailing application users and ride-hailing application non users.

Table 1. Independent samples t-test comparing social connectedness scores of auto drivers who use ride-hailing applications versus those who do not.

| Variables | Categories | N | Mean | Std. Dev. | Mean diff. | t | df | P-value |
|----------------------|------------------|----|------|-----------|------------|------|------|---------|
| Social connectedness | Non-ride hailing | 50 | 36.5 | 8.22 | 6.1 | 4.03 | 98.0 | < 0.001 |
| | Ride hailing | 50 | 30.4 | 6.86 | | | | |

Independent samples t-test results revealed, Non-ride-hailing drivers (M = 36.5, SD = 8.22) had significantly higher social connectedness scores than ride-hailing drivers (M = 30.4, SD = 6.86), $t(98)=4.03$, $p<.001p$.

Table 2. Mann-Whitney U test result score

| Variables | Categories | Median | Mann-Whitney U | Rank Biserial Correlation |
|----------------------|------------------|--------|----------------|---------------------------|
| Social connectedness | Non-ride hailing | 39.0 | 560 | -0.552 |
| | Ride hailing | 31.0 | | |

A Mann-Whitney U-test revealed a significant difference in social connectedness scores between non-ride-hailing drivers (Mdn=39.0) and ride-hailing drivers (Mdn=31.0), $U=560$, $p<.001$, with non-ride-hailing drivers reporting higher scores.

Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities

Table 3. Cohen's d Scores

| Cohen's d | Effect size |
|-----------|-------------|
| | 0.806 |

The effect size, as measured by Cohen's *d*, is $d=0.81$, indicating a large effect size and a substantial practical difference in social connectedness scores between the two groups.

DISCUSSION

An independent-samples *t*-test was conducted to establish the means of social connectedness scores of auto drivers who use the ride-hailing application versus those who do not. Table 1 results show that the non-users of ride-hailing application drivers ($M = 36.5$, $SD = 8.22$) scored remarkably higher in social connectedness compared to the ride-hailing application drivers ($M = 30.4$, $SD = 6.86$). The mean difference found between the two groups is 6.1, indicating a significant difference in their levels of social connectivity. The significant *t*-test yielded a *t*-value of 4.03, with the degrees of freedom being 98, and was statistically significant with $p < .001$. This result means that the difference in social connectivity between the two groups is unlikely to have been due to random chance.

These results imply that using ride-hailing applications is likely to be associated with reduced levels of social connectedness for auto drivers by highlighting the potential social and psychological impact of using ride-hailing applications.

The *t*-value (4.03) indicates a notable separation between the two groups in terms of their social connectedness scores, and the very low *p*-value ($< .001$) provides strong evidence that such a difference is unlikely to be due to chance variation. With $df = 98$, $N = 50$ per group, the observed effect size is large enough to be practically significant, well beyond mere statistical significance.

The two independent groups' score distributions are compared using a non-parametric test called the Mann-Whitney U test. This score was calculated as this data is assumed to not follow normality. As presented in Table 2, The results of the Mann-Whitney U test showed a statistically significant difference between the non-ride-hailing and ride-hailing auto driver groups ($U = 560$, $p < .001$). These results indicate that the scores of the non-ride-hailing auto driver group were significantly higher than those of the ride-hailing auto driver group which are consistent the descriptive statistics, where the non-ride-hailing group had a higher mean and median ($M = 36.5$, median = 39.0) when compared to the ride-hailing group ($M = 30.4$, median = 31.0). The rank biserial correlation (-0.552) further supports this finding by suggesting a moderate to large effect size. This negative correlation suggests an inverse association where more frequent positive scores are present in the non-ride-hailing groups. These results indicate a large difference between the two groups and need further assessment.

Further, Cohen's *d* was calculated to measure the effect size between two groups. As presented in Table 3, Cohen's *d* effect size is 0.806 which represents a large effect size. A large effect size indicates that the difference in scores between the non-ride-hailing application group and ride-hailing application group is not only statistically significant but also practically meaningful. Higher difference in mean scores between the two groups is further supported by Cohen's *d* effect size.

Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities

These results imply that drivers using ride-hailing applications to obtain customers are likely to be associated with reduced levels of social connectedness for auto drivers while potentially highlighting their social and psychological impact of using ride-hailing applications.

Lower scores of social connectedness among ride hailing app users is likely due to the solitary notion of their jobs provided by a set algorithm which spreads drivers across the city to meet customer demands. This solitary nature of the app in turn reduces their chances of social interaction with the same auto drivers to improve their social connections. These applications provide flexible working hours and places but at the same time provide isolative working environments limiting their social interactions. On the other hand, drivers who do not use ride-hailing apps work in auto stands which encourages them to interact with the other members of the community resulting in a strengthened feeling of togetherness and social belongingness. These applications provide chances for high financial earnings by giving flexibility for the drivers but unintentionally, these applications are causing social isolation and diminishing a sense of belonging among same community members.

CONCLUSION

Present study found a relationship between the use of ride hailing apps and social connectedness among auto drivers. As presented earlier, Social connectedness among auto drivers using ride-hailing apps to obtain customers is much less than auto drivers who do not use ride-hailing apps. Based on these results, it is evident that the use of ride-hailing apps are unintentionally causing social isolation among auto drivers communities which can be prevented using certain strategies.

Future studies can investigate the effects of different factors affecting the scores of social connectedness among auto drivers. Some of the factors could be the amount of work hours, place of work, driving distance, and differences among migratory workers. Further, sample collection can be selected from different cities in India to generalize the results with a higher sample size.

To mitigate the unintended effects of ride-hailing apps, these applications can include locations of auto stands where auto drivers can choose to go to the nearest one to rest and socialize with other auto drivers, which will reduce their fatigue and improve a sense of community and strengthen the feeling of brotherhood. Along with this, certain meetings can be conducted every month to provide a space for the auto drivers to meet, relax and share their problems with each other and solve for a better working environment. Another algorithm can be included, where the app constantly monitors that amount of time a person is continuously driving and after reaching a certain level of continuous driving hours, the app automatically stops to provide customer ride requests to promote and provide some time for the driver to rest and relax which will help improve their physical and psychological health.

REFERENCES

- Bartel, E., MacEachen, E., Reid-Musson, E., Meyer, S. B., Saunders, R., Bigelow, P., Kosny, A., & Varatharajan, S. (2019). Stressful by design: Exploring health risks of ride-share work. *Journal of Transport & Health*, 14, 100571. <https://doi.org/10.1016/j.jth.2019.100571>

Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities

- Berger, M., Dey, D., Dandekar, A., Barati, B., Bernhaupt, R., & Pfleging, B. (2022). Together in the car: A comparison of five concepts to support driver-passenger collaboration. *Proceedings of the 14th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, 183–194. <https://doi.org/10.1145/3543174.3544940>
- Berger, M., Dey, D., Dandekar, A., Barati, B., Pfleging, B., & Bernhaupt, R. (2023). Empowering driver-passenger collaboration: Designing in-car systems with a focus on social connectedness, fairness, and team performance. *International Journal of Human-Computer Interaction*, 39(16), 3180–3202. <https://doi.org/10.1080/10447318.2023.2205769>
- Chaudhari, H. A., Byers, J. W., & Terzi, E. (2018, February 2). Putting data in the driver's seat: Optimizing earnings for on-demand ride-hailing. *ACM Digital Library*. <https://dl.acm.org/doi/abs/10.1145/3159652.3159721>
- Chen, J., Li, W., Yu, Q., Shibasaki, R., & Zhang, H. (2023, March 3). Chapter two - Improvement of an online ride-hailing system based on empirical GPS data. *ScienceDirect*. <https://www.sciencedirect.com/science/article/abs/pii/B9780323958929000024>
- Fleitoukh, A., & Toyama, K. (2020, December 10). Are ride-sharing platforms good for Indian drivers? An investigation of taxi and auto-rickshaw drivers in Delhi. *IFIP Joint Working Conference on the Future of Digital Work: The Challenge of Inequality (IFIPJWC)*. <https://inria.hal.science/hal-03450697v1>
- Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The Social Connectedness and the Social Assurance Scales. *Journal of Counseling Psychology*, 42(2), 232–241. <https://doi.org/10.1037/0022-0167.42.2.232>
- Martino, J., Pegg, J., & Frates, E. P. (2015). The connection prescription: Using the power of social interactions and the deep desire for connectedness to empower health and wellness. *American Journal of Lifestyle Medicine*, 11(6), 466–475. <https://doi.org/10.1177/1559827615608788>
- Mohlmann, M., & Henfridsson, O. (2019, August). What people hate about being managed by algorithms, according to a study of Uber drivers. *ResearchGate*. https://www.researchgate.net/publication/336347030_What_People_Hate_About_Being_Managed_by_Algorithms_According_to_a_Study_of_Uber_Drivers
- National Academies of Sciences, Engineering, and Medicine. (2016). Fatigue, hours of service, and highway safety. In *Commercial motor vehicle driver fatigue, long-term health, and highway safety: Research needs*. National Academies Press. <https://www.ncbi.nlm.nih.gov/books/NBK384974/>
- Nitschke, J. P., Forbes, P. A. G., Ali, N., Cutler, J., Apps, M. A. J., Lockwood, P. L., & Lamm, C. (2020, October 25). Resilience during uncertainty? Greater social connectedness during COVID-19 lockdown is associated with reduced distress and fatigue. *British Journal of Health Psychology*, 26(1), 268–284. <https://doi.org/10.1111/bjhp.12485>
- Nsiah-Asamoah, C. N. A., & Buxton, D. N. B. (n.d.). Hydration and water intake practices of commercial long-distance drivers in Ghana: What do they know and why does it matter? *PMC*. Retrieved from <https://pmc.ncbi.nlm.nih.gov/articles/PMC8022146/>
- Rahman, M. I. A., Rahman, R. A., & Mahmud, M. (2021). Applying theory to empirical phenomena: Love-hate relationship of E-hailing driver-platform provider in the sharing-economy services. *International Journal of Business and Technology Management*, 3(4). <https://doi.org/10.55057/ijbtm.2022.3.4.10>

Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities

- Ramizo Jr, G., & Chotib, C. (2020). The social impact of ride-hailing technologies: The experience of passengers and drivers in Jakarta. *Proceedings of the 3rd International Conference on Strategic and Global Studies (ICSGS 2019)*, 6–7 November 2019, Sari Pacific, Jakarta, Indonesia. <https://doi.org/10.4108/eai.6-11-2019.2297263>
- Ride-hailing - Worldwide. (2024). *Statista*. <https://www.statista.com/outlook/mmo/shared-mobility/ride-hailing/worldwide>
- Shetty, O. (2021, November 3). Auto-rickshaw unions: Who's in them? What do they do? *Medium*. <https://medium.com/@ojas2501/auto-rickshaw-unions-whos-in-them-what-do-they-do-28de803c78bc>
- Surie, A., & Koduganti, J. (2016). The emerging nature of work in platform economy companies in Bengaluru, India: The case of Uber and Ola cab drivers. *E-Journal of International and Comparative Labour Studies*, 5. https://ejcls.adapt.it/index.php/ejcls_adapt/article/view/224
- Zhang, Z., Yang, L., Yao, J., Ma, C., & Wang, J. (2024). Joint optimization of pricing, dispatching and repositioning in ride-hailing with multiple models interplayed reinforcement learning. *IEEE Transactions on Knowledge and Data Engineering*, 36(12), 8593–8606. <https://doi.org/10.1109/TKDE.2024.3464563>

Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Jahnavi, C.G. & Bismirty, B. (2025). Impact of Using Ride Hailing Apps on the Social Connectedness Between Auto Drivers in Auto Driving Communities. *International Journal of Indian Psychology*, 13(1), 753-761. DIP:18.01.071.20251301, DOI:10.25215/1301.071