



Beyond the pedals: Challenges and resilience strategies of pedicab drivers in Tangub City, Philippines

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Abstract

Aim: This study examined the challenges encountered by pedicab drivers in Tangub City, Philippines, and explored the resilience strategies they employ to sustain their livelihoods. The study also sought to identify opportunities for local government intervention that may contribute to the welfare and economic sustainability of pedicab drivers as an important sector of community-based transportation.

Methodology: Using a phenomenological research design, the study explored the lived experiences of fifteen (15) purposively selected pedicab drivers in Tangub City. Data were gathered through a researcher-developed interview guide validated by experts. Interviews were conducted until data saturation was achieved, and the collected data were analyzed using thematic analysis.

Results: The findings revealed three major challenges faced by pedicab drivers: low income, intense competition from gasoline-powered motor cabs, and a declining number of passengers. To address these challenges, participants employed two primary resilience strategies: seeking alternative sources of income through part-time or temporary employment and practicing financial discipline by saving money to support essential family needs. These strategies enabled drivers to cope with economic uncertainty and sustain their daily living requirements.

Conclusion: The study highlights the vulnerability of pedicab drivers to economic instability and changing transportation dynamics. Findings underscore the need for targeted local government programs, including livelihood assistance, skills development training, infrastructure support, and social protection initiatives. Such interventions may enhance the economic resilience, social welfare, and livelihood sustainability of pedicab drivers while recognizing their contribution to local transportation services and community development.

Keywords: *Pedicab drivers, public transportation, livelihood challenges, resilience strategies, income instability, local governance, community development*

INTRODUCTION

Informal transportation systems continue to play an important role in many developing countries by providing affordable, accessible, and flexible mobility services for communities. Non-motorized transport modes such as pedicabs, cycle rickshaws, and tricycles remain important sources of livelihood for workers who have limited access to formal employment opportunities. Despite their contribution to local mobility and economic activity, informal transport workers often experience income insecurity, occupational vulnerability, limited social protection, and increasing competition from modern transportation systems. Recent discussions on sustainable urban mobility have emphasized the need for inclusive transportation policies that consider not only passengers but also the welfare of informal transport workers who depend on these services for daily survival.

Globally, rapid urbanization, transportation modernization, and the expansion of digital transport platforms have affected traditional transport sectors. Studies show that informal transport workers face declining passenger demand, unstable earnings, occupational health risks, and limited government support (Amodu et al., 2024; Roy et



al., 2024; Sifa et al., 2023). At the same time, scholars emphasize the importance of resilience among workers in the informal economy, particularly the ways individuals combine available assets, social networks, and adaptive strategies to cope with uncertain income and changing market conditions (Nilakusmawati et al., 2024).

In the Philippines, informal transportation remains a critical component of local mobility, particularly in small cities and rural communities where public transportation options are limited. However, transportation modernization, motorcycle-based services, and shifting passenger preferences have intensified competition among traditional transport operators. While these developments have improved mobility options for passengers, they have also created livelihood challenges for conventional transport workers, including pedicab drivers (Cobol et al., 2025).

Pedicab drivers in Tangub City represent one of the many groups affected by these transportation and economic changes. Their work provides affordable transportation for residents while serving as a source of income for households with limited employment opportunities. However, pedicab drivers frequently experience declining passenger demand, uncertain daily earnings, increasing competition from motorized transportation, and physical fatigue associated with their occupation. Despite these challenges, many remain in the industry and develop coping mechanisms that allow them to sustain their livelihoods.

Previous studies have examined pedicab transportation, tourism support services, occupational health concerns, transportation modernization, and economic competition within the transport sector (Jaydarifard et al., 2024; Rizal et al., 2021; Sidel, 2020; Sifa et al., 2023). However, limited attention has been given to how pedicab drivers respond to livelihood challenges through resilience strategies within local government contexts in the Philippines. This study addresses this gap by examining the challenges encountered by pedicab drivers in Tangub City and the resilience strategies they employ to sustain their livelihoods. The findings contribute to the literature on informal labor, livelihood resilience, and transportation sustainability, and provide evidence for LGUs, transportation planners, and social welfare agencies in designing responsive interventions.

Theoretical Framework

This study is anchored on Social Vulnerability Theory, Resilience Theory, and the Sustainable Livelihoods Framework (SLF). Social Vulnerability Theory explains how social and economic conditions increase exposure to risk. Resilience Theory explains how individuals adapt, recover, and continue functioning despite adversity. The Sustainable Livelihoods Framework explains how people draw from livelihood assets such as human, financial, social, physical, and natural capital to pursue livelihood strategies and sustain well-being (Chambers & Conway, 1992; Cutter et al., 2003; DFID, 1999; Scoones, 1998; Ungar, 2018). Together, these perspectives provide an integrated lens for interpreting the experiences of pedicab drivers.

Social Vulnerability Theory posits that vulnerability is shaped by economic status, resource access, social position, and institutional support, which influence people's exposure to risks and capacity to respond (Cutter et al., 2003). Pedicab drivers are vulnerable because they operate in an informal sector characterized by daily income uncertainty, limited employment benefits, exposure to transportation changes, and limited access to social protection. Recent literature on marginalized and informal workers similarly shows that exclusion from protection systems and weak institutional support heighten livelihood insecurity (Ebon, 2025; Painter et al., 2024; Li & Wang, 2022).

Resilience Theory complements this view by emphasizing that vulnerable workers are not passive recipients of hardship. They adapt through resourcefulness, work persistence, income substitution, and household-level coping strategies (Masten, 2001; Ungar, 2018). For pedicab drivers, resilience may be observed in their decision to continue driving, find sideline work, rely on family and community networks, and practice saving despite irregular income.

The Sustainable Livelihoods Framework strengthens the interpretation by identifying the specific livelihood assets affected by the drivers' situation. Low income directly weakens financial capital; physical exhaustion and limited skills affect human capital; competition with motorized transport exposes weakness in physical capital and market access; and limited institutional support reflects gaps in social and political capital. Conversely, the drivers' strategies of finding alternative work and saving money represent livelihood diversification and asset protection. Through SLF, the study views pedicab driving not only as a transport activity but as a livelihood system shaped by assets, vulnerabilities, institutions, and long-term sustainability.



Statement of the Problem

Pedicab drivers constitute an important segment of the informal transportation sector and provide affordable mobility services to community members, particularly those with limited access to private transportation. Despite their contribution to local transportation and economic activity, many pedicab drivers face livelihood challenges such as unstable income, declining passenger demand, and increasing competition from motorized transportation services. These challenges affect their ability to sustain household needs and maintain economic security.

In Tangub City, pedicab drivers continue to operate despite the growing presence of gasoline-powered motorcabs and changing transportation preferences among commuters. The persistence of these challenges raises concerns regarding livelihood sustainability, social welfare, and the adequacy of support mechanisms available to this sector. Understanding how pedicab drivers experience these challenges and the strategies they employ to cope with them is essential for developing responsive local government programs and community-based interventions.

This study was conducted to examine the challenges encountered by pedicab drivers in Tangub City and to explore the resilience strategies they utilize to sustain their livelihoods amid economic and occupational difficulties. The findings are expected to provide evidence that may assist policymakers, local government units, and development practitioners in designing programs that support the welfare and economic resilience of pedicab drivers.

Research Objectives

General Objective

To explore the challenges encountered by pedicab drivers in Tangub City and the resilience strategies they employ to sustain their livelihoods.

Specific Objectives

1. To identify the challenges experienced by pedicab drivers in Tangub City.
2. To examine the resilience strategies employed by pedicab drivers in responding to livelihood challenges.
3. To generate recommendations that may assist local government units and other stakeholders in developing support programs for pedicab drivers.

Research Questions

This study sought to answer the following questions:

1. What challenges are experienced by pedicab drivers in Tangub City?
2. What resilience strategies do pedicab drivers employ to address these challenges?
3. What interventions or support mechanisms may be recommended to improve the livelihood conditions of pedicab drivers?

METHODS

Research Design

This study employed a phenomenological-qualitative research design to explore the lived experiences, challenges, and resilience strategies of pedicab drivers in Tangub City. A qualitative approach was deemed appropriate because the study sought to obtain in-depth insights into participants' experiences, perceptions, and coping mechanisms within their livelihood context.

Population and Sampling

The study was conducted in Tangub City, Misamis Occidental, Philippines, where pedicab transportation remains a common means of livelihood among individuals with limited access to formal employment opportunities. The participants consisted of fifteen (15) pedicab drivers who were purposively selected from an estimated population of sixty (60) registered and active pedicab drivers operating within the city.



Purposive sampling allowed the researchers to select participants who possessed relevant experiences regarding the phenomenon under investigation. Participants were required to: (1) be currently employed as a pedicab driver in Tangub City; (2) have at least three (3) years of experience in pedicab driving; (3) be at least 18 years old; and (4) be willing to participate voluntarily. Drivers who had temporarily stopped operating or were unable to participate in an interview were excluded.

The sample size of fifteen (15) participants was deemed sufficient based on data saturation, wherein no new themes, patterns, or significant information emerged from subsequent interviews.

Instruments

The primary data-gathering instrument was a researcher-developed semi-structured interview guide designed to explore the challenges encountered by pedicab drivers and the resilience strategies they employed in sustaining their livelihoods. The interview guide consisted of two major sections: (1) challenges encountered in pedicab driving and (2) coping and resilience strategies utilized to overcome these challenges.

To establish content validity, the interview guide was evaluated by three experts with backgrounds in qualitative research, social sciences, and research methodology. The validators assessed the instrument in terms of relevance, clarity, coherence, appropriateness of questions, and alignment with the research objectives. Their recommendations were incorporated into the final version of the guide.

Data Collection

Prior to data collection, the researchers secured permission from the local government unit and community representatives in Tangub City. Permission was likewise obtained from the participants before the conduct of the interviews. Eligible participants were identified through purposive sampling and were invited to participate voluntarily in the study.

Face-to-face interviews were conducted at locations convenient and comfortable for the participants, such as pedicab terminals and designated waiting areas. The interviews were conducted from February 2024 to March 2024 and lasted approximately 30 to 45 minutes per participant. Interviews were conducted primarily in Cebuano and Filipino to ensure that participants could freely express their experiences and perspectives.

With the participants' consent, the interviews were audio-recorded to ensure accuracy of data capture. Field notes were also taken to document non-verbal cues and contextual observations. After each interview, the recorded responses were transcribed verbatim and translated into English when necessary. The transcripts were reviewed several times to ensure accuracy and completeness before proceeding to data analysis.

Data Analysis

The study utilized thematic analysis to examine and interpret the qualitative data gathered from the participants. Thematic analysis was selected because it allows researchers to identify, analyze, and report recurring patterns and themes within participants' narratives.

The analysis followed several stages. First, the researchers familiarized themselves with the data through repeated reading of the interview transcripts. Second, significant statements and meaningful responses were identified and assigned initial codes. Third, similar codes were grouped into categories based on common meanings and experiences. Fourth, categories were clustered into broader themes that reflected the shared challenges and resilience strategies of the participants. Finally, the themes were reviewed, refined, and validated to ensure consistency, credibility, and accurate representation of participants' lived experiences. The resulting themes served as the basis for the interpretation and discussion of findings.



Ethical Considerations

The study adhered to established ethical principles in the conduct of qualitative research. Prior to participation, all participants were informed about the purpose of the study, the nature of their involvement, and their rights as research participants. Informed consent was obtained before the conduct of the interviews.

Participation in the study was entirely voluntary, and participants were informed that they could decline to answer any question or withdraw from the study at any time without penalty. To protect confidentiality and anonymity, participants were assigned pseudonyms or participant codes instead of using their real names in the transcripts and research report.

All interview recordings, transcripts, and research documents were stored securely and were accessible only to the researchers. Electronic files were password-protected, while printed documents were kept in a secure location. The collected data were used solely for academic purposes and were handled in accordance with ethical standards for research involving human participants. Necessary permissions from relevant local authorities and participants were secured prior to data collection.

RESULTS and DISCUSSION

This section presents the analysis and interpretation of data collected from the participants. The themes are organized according to the research questions and are discussed with reference to Social Vulnerability Theory, Resilience Theory, and the Sustainable Livelihoods Framework. The discussion also highlights governance and policy implications for local transportation planning, livelihood development, poverty reduction, and social protection.

Problem 1: What challenges did you encounter in the line of your occupation?

Theme 1: Low Income

Low income emerged as a central challenge because pedicab driving depends on uncertain daily passenger demand rather than fixed wages. Six of the fifteen participants described reduced or unstable earnings as a persistent difficulty. Their statements indicate not only financial shortage but also anxiety over household survival, especially because daily earnings are immediately tied to food, transportation, school-related expenses, and other basic needs.

Participant 2 stated, "As of now, we pedicab drivers are experiencing low income."

P4 said that, "In line with this work, which corresponds to low income."

P6 also uttered, "The difficulties we faced while working as pedicab drivers were due to our low income, which we found extremely difficult."

P7 also said, "Oh, I really experienced that we used to have a lot of income, but now it's very little income due to few passengers."

P14 added that, "If we talk about hardship, I could say that driving a pedicab comes with a little low income, no matter what I do, and despite my efforts, it still remains"

P15 also responded, "Regarding difficulties, I would say that driving a pedicab has a low income that I find extremely difficult to overcome despite my best efforts."

The finding on low income may have emerged because pedicab driving is highly dependent on daily cash flow and has little protection against demand fluctuations. Under Social Vulnerability Theory, low income increases exposure to risk because drivers lack formal wages, insurance, paid leave, and stable benefits (Cutter et al., 2003; Ebon, 2025). Through the Sustainable Livelihoods Framework, low income represents weakness in financial capital,



which then affects other livelihood assets such as human capital because drivers may have limited resources for health, food, and skills development. The finding is consistent with Rizal et al. (2021) and Roy et al. (2024), who found that non-motorized and informal transport workers frequently experience unstable earnings and economic hardship. Analytically, the issue is not only personal poverty but a livelihood system that places risk on individual workers while providing limited institutional support.

Theme 2: Competition with other gasoline-powered motor cab drivers

Competition with gasoline-powered motor cabs emerged as a livelihood threat because motorized services offer passengers faster travel, greater convenience, and wider route coverage. Three participants emphasized that the competition is difficult because pedicab operation depends on physical effort while motor cabs can serve passengers more quickly. This situation reflects the uneven impact of transportation modernization on traditional transport workers.

Participant 2 uttered, "Usually, passengers do not ride pedicabs because there are too many other drivers, particularly motor cab drivers."

P11 mentioned, "In line with my job as a pedicab driver, I find it difficult to compete with other drivers, such as motor cab drivers, because this job requires pedalling and using force to move."

P13 added, "In a competition with motorcab drivers since they will wait for the passengers to get off the bus, and there is nothing we can do about it- it is up to the passengers to make a choice."

This finding may have emerged because transportation markets in small cities are changing faster than the adaptive capacity of traditional drivers. From the SLF perspective, pedicab drivers possess limited physical capital compared with motorized transport because their vehicles are slower and physically demanding. Their human capital is also constrained when they have limited access to training that would allow them to shift into other transport-related or livelihood activities. Social Vulnerability Theory explains that modernization can deepen inequality when workers with fewer resources are exposed to competition without transition support. Nabilla et al. (2023) similarly observed that modernization threatens the social and economic conditions of becak drivers in Indonesia.

The governance implication is that transportation modernization should be inclusive and transitional. LGUs may map pedicab routes, designate protected short-distance service zones, and create guidelines that prevent unfair displacement while still improving mobility efficiency. Pedicabs may be integrated into low-carbon, heritage, campus, market, or tourism circuits where non-motorized transport has a comparative advantage. This would support transportation sustainability by recognizing pedicabs as part of an inclusive mobility ecosystem rather than as outdated vehicles to be replaced.

Theme 3: Minimal passengers

Minimal passengers emerged as another major challenge and was mentioned by six participants. The decline in passengers was linked to changing mobility preferences, walking, and competition from alternative transport services. This pattern shows that the problem is not merely the absence of commuters but a shift in local demand that reduces the income opportunities available to pedicab drivers.

Participant 3 uttered, "If we just talk about challenges, one of those is a lack of passengers."

P5 stated, "If we talk about challenges, one of those is minimal passengers and it's hard."

P8 also said, "When discussing challenges, one of the biggest ones is the minimal passenger. Sometimes there are none at all because people choose to walk, and when there are, they are too few in number."

P9 mentioned, "I think it would be the minimal passengers, and there are too few passengers, and if there are any, they are just too few."



P10 uttered, "For me, in those areas where there are very few passengers, I can really say that it's difficult, maybe because of the quietness, and people also just prefer to walk, which is why there are really fewer passengers."

P12 also responded, ""Lack of passengers, or rather, a complete lack of passengers, I would simply tell myself that although things are difficult, I must continue to earn a living."

The finding on minimal passengers may have emerged from changing passenger behavior, route competition, and the availability of faster alternatives. In SLF terms, reduced passenger demand weakens financial capital and undermines the viability of the livelihood strategy itself. It also reveals vulnerability in market access because drivers have limited control over passenger flow and cannot easily influence demand. De Jesus and Villanueva (2022) and Zhuk et al. (2025) similarly show that transport demand is affected by regulatory, environmental, and seasonal or behavioral changes. This demonstrates that pedicab livelihood vulnerability is shaped by broader mobility systems and not only by individual work effort.

For policy, the decline in passengers suggests that livelihood development must be connected to transportation planning. LGUs can identify locations where pedicabs remain useful, such as markets, schools, terminals, senior citizen access points, and tourism areas. Local programs may also support vehicle improvement, driver identification systems, fare information, and customer service training to increase public confidence. These measures link livelihood protection with sustainable mobility and help reduce poverty by preserving income opportunities for low-resource workers

Problem 2: What are your resilience strategies amid these challenges?

Two (2) themes emerged on the resilience strategies adopted by pedicab drivers in Tanguib City. The utterance below conveyed the resilience strategies among pedicab drivers in terms of dealing with their challenges.

Theme 1: Find an alternative job

Finding alternative jobs was the most common resilience strategy and was mentioned by nine participants. Drivers engaged in construction work, labor services, fishing, blacksmithing, and other temporary jobs to supplement income from pedicab driving. These strategies show that pedicab drivers respond to economic instability by diversifying their livelihood sources rather than relying on a single income stream.

Participant 1 uttered, "I will find another job like a construction worker."

P3 shared, "For me, the best way to overcome my challenges is to have a part-time job or side job because I also have a side job like blacksmithing and fishing, and sometimes I'll just find another job aside from driving a pedicab, like a construction worker."

P4 said that "To work hard and find another job or a part-time job."

P6 mentioned, "Aside from driving a pedicab, I also have a side job as a construction worker."

P8 said, "The best way is to find another job in order to support my family's needs."

P9 shared, "Sometimes, I work as a laborer when there are neighbors or acquaintances who offer work, and I do sideline jobs to buy food and rice for my family."

P10 added, "I'll just find another job to earn money, and sometimes I work as a blacksmith when there are neighbors or acquaintances who offer work in order to provide my family's needs."

P13 addressed, "I can probably do it, by looking for other jobs, sometimes when I can't drive a pedicab, I work as a laborer if someone I know or a neighbor is looking for labor, and that's really what I do."



Lastly, P15 pointed out, "By striving to strive pedicab and looking for another job so I can provide for my family."

This finding reflects resilience as an adaptive process. Resilience Theory explains that individuals facing adversity develop strategies that allow them to absorb shocks, adjust behavior, and continue functioning (Masten, 2001; Ungar, 2018). The Sustainable Livelihoods Framework provides a deeper interpretation: alternative jobs represent livelihood diversification, a strategy used when one livelihood source becomes insufficient or unstable (Chambers & Conway, 1992; DFID, 1999; Scoones, 1998). In this case, participants converted human capital such as physical strength, work experience, and practical skills into supplementary income. This finding supports Nilakusmawati et al. (2024), who found that informal workers use survival strategies and diversification to maintain household stability under economic pressure.

The implication for governance is that livelihood programs should build on the skills that pedicab drivers already use. Skills training in construction, welding, repair services, small enterprise management, and tourism support may expand their income options without forcing immediate occupational displacement. Poverty reduction programs should therefore move beyond one-time cash assistance and develop pathways toward diversified and sustainable livelihoods. LGUs, TESDA, social welfare offices, and local cooperatives can collaborate to provide training, starter kits, microenterprise support, and job matching for pedicab drivers and their households.

Theme 2: Saving Money

Saving money emerged as another resilience strategy and was mentioned by six participants. Although the drivers earned limited income, they attempted to set aside small amounts for food, rice, family needs, and unexpected expenses. Their statements show that saving was not only a financial activity but a household survival strategy under conditions of uncertainty.

Participant 2 uttered, "I will just pray to God, so I can be helped in my difficulties and poverty, to continue striving to drive and save money for my family."

P5 said, "I will just pray to the Lord because only the Lord can help us in our difficulties now, and with effort, we can earn money to save for our family."

P7 pointed out, "By striving and driving a pedicab to provide for our family, then praying to the Lord for good health so we can continue to strive in difficulties and save money to buy what we need."

P11 mentioned, "I always pray to God and just work hard in order to have some passengers, and sometimes someone will give me 100 pesos depending on what they load, just to save a little."

P12 stated, "To overcome amid these challenges is to continue earning money as a pedicab driver to save family expenses, and it is better to save for unpredictable, more important needs than to buy new clothes".

Lastly, P14 mentioned, "By striving and driving a pedicab in order to save money to buy necessities, because it is more important to buy rice and food than other things."

This finding may have emerged because pedicab drivers face income uncertainty and therefore must prioritize essential consumption over discretionary spending. In SLF terms, saving is a form of financial capital protection. Even when the amount saved is small, it helps households manage short-term shocks such as illness, low passenger days, or sudden family expenses. It also reflects absorptive resilience because drivers attempt to endure hardship without immediately losing household stability. Handayani and Caesario (2021) emphasized that saving habits can reduce consumptive behavior and support future needs, while Cobol et al. (2025) similarly documented financial challenges and coping mechanisms among Filipino tricycle drivers. The earlier weakly matched platform-work citation was removed because it did not directly support savings practices among pedicab drivers.



For policy, the finding suggests that financial resilience among pedicab drivers can be strengthened through community-based savings groups, financial literacy sessions, access to affordable microinsurance, and facilitated registration in social protection programs. However, the responsibility should not be placed solely on individual saving because very low income limits the capacity to save. Governance interventions should therefore combine financial education with livelihood support, subsidized social protection, and income-generating opportunities. This contributes to broader social science and development literature by showing how informal workers exercise agency while remaining constrained by structural poverty and weak institutional protection.

Conclusions

The study revealed that pedicab drivers in Tangub City experience significant livelihood challenges characterized by low income, declining passenger demand, and increasing competition from gasoline-powered motor cab drivers. These challenges contribute to economic vulnerability and affect their ability to sustain household needs and maintain financial stability.

The findings contribute to social science research by showing how informal transportation workers experience vulnerability within changing mobility systems while also exercising resilience through livelihood diversification and financial discipline. Through the Sustainable Livelihoods Framework, the study demonstrates that pedicab drivers' struggles are linked to weakened financial, physical, human, and institutional assets. Their resilience strategies show attempts to protect and rebuild these assets despite limited resources.

From a governance and development perspective, the findings underscore the need for responsive interventions that support livelihood sustainability, social protection, and economic inclusion. Pedicab drivers should be recognized not merely as informal workers but as part of the local mobility and livelihood system whose welfare is connected to transportation planning, poverty reduction, and inclusive local development.

Recommendations

Based on the findings of the study, several policy and program interventions may be considered:

Local Government Units may develop livelihood assistance programs that provide financial support, livelihood diversification opportunities, and skills development training for pedicab drivers. These programs should be based on profiling of drivers' skills, income conditions, household needs, and social protection status.

Transportation planning should identify routes, terminals, and community spaces where pedicabs can continue to provide useful short-distance mobility. Covered waiting areas, safe loading and unloading zones, route integration, and tourism-related pedicab services may help improve drivers' working conditions and income opportunities.

Relevant government agencies and development organizations may collaborate in providing health services, financial literacy programs, savings groups, microinsurance orientation, and alternative livelihood training in areas such as construction, welding, electrical work, vehicle repair, and small enterprise development. These initiatives may improve the economic resilience of pedicab drivers and reduce vulnerability to income instability.

Pedicab drivers may be encouraged to maintain the cleanliness and condition of their vehicles and adopt professional service practices that improve public confidence. Tourism-related initiatives that integrate pedicabs into local cultural and heritage activities may also generate additional income opportunities.

Future researchers may conduct broader qualitative or mixed-method studies to examine the socioeconomic conditions, resilience strategies, health risks, and policy needs of informal transportation workers. Additional studies may assess the effectiveness of existing government assistance programs in improving the welfare and livelihood sustainability of pedicab drivers.



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