



## Effect of Rear-View Camera Technology on Driving Skills among Nigerian Drivers

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### Abstract

This study examines the impact of rear-view camera technology on the driving proficiency of Nigerian drivers, emphasizing parking assurance, reversing precision, and collisions associated with reversing. The study aimed to ascertain if the utilization of rear-view cameras improves driver performance and safety. The quantitative descriptive survey approach included 300 licensed drivers from Lagos, Abuja, Port Harcourt, and Kano. There were 150 people who used rear-view cameras and 150 who didn't. A standardized questionnaire and a checklist for observing driving performance were used to collect data. A pilot test with thirty drivers (Cronbach's alpha = 0.87) showed that the instrument was reliable. Descriptive statistics and the Pearson Product-Moment Correlation Coefficient (PPMC) were used to look at the link between camera use and driving performance. The results showed that drivers who used rear-view cameras were much better at backing up, had fewer accidents while doing so, and parked more confidently and effectively than those who didn't. Using a rear-view camera was strongly linked to both parking confidence ( $r = 0.58$ ,  $p < 0.01$ ) and reversing accuracy ( $r = 0.62$ ,  $p < 0.01$ ). Conversely, crashes associated with reversing exhibited a significant negative correlation ( $r = -0.51$ ,  $p < 0.05$ ). The rejection of all three null hypotheses indicated that rearview cameras genuinely enhance driving.

**Keywords:** Rear-View Camera, Driving Skills, Reversing Accuracy, Parking Confidence, Collision Reduction

### Introduction

One of the primary causes of death and disability in the globe is still road accidents. According to estimates from the World Health Organization (2023), millions of people die in traffic accidents every year, and millions more suffer non-fatal injuries that frequently cause long-term impairment. A disproportionate number of these deaths occur in low- and middle-income nations, mostly as a result of fast motorization, poor infrastructure, lax enforcement of traffic laws, and a lack of integration of vehicle safety systems. Nigeria, the most populous country in Africa, nevertheless has significant problems with road safety; crash reports frequently point to human error, poor hazard perception, and poor maneuvering skills as the main contributing reasons. According to the Federal Road Safety Corps (FRSC, 2023), driver-related problems such bad reversing judgment, losing control, and inappropriate overtaking are major contributors to road collisions nationwide. Modern cars are increasingly equipped with Advanced Driver-Assistance Systems (ADAS) to reduce human error in response to the global road safety crisis. The rear-view camera system, sometimes referred to as a backup camera, is one commonly used ADAS feature. In order to address rear blind zones that are not entirely visible through traditional mirrors, rear-view cameras provide a live video feed of the region behind the car when reverse gear is engaged. According to the National Highway Traffic Safety Administration (NHTSA, 2022), rear-visibility devices greatly improve drivers' field of vision and were required in all new passenger cars in the US in order to lower back over collisions. According to the Insurance Institute for Highway Safety (IIHS, 2023), there is a discernible decrease in police-reported backing collisions between cars with and without rear-view cameras.

Even though they frequently happen at modest speeds, backing crashes can cause significant property damage, injuries to pedestrians, and even fatalities, especially in young people and the elderly. By adjusting for drivers' reduced rearward view, rear-visibility technology plays a crucial role in preventing these preventable events, according to NHTSA (2022). Additionally, studies show that integrating rear-view cameras with other technology like parking sensors or automated rear braking systems results in even higher crash involvement decreases (Cicchino, 2022). These results highlight the potential of camera-based systems as significant safety interventions as well as convenience tools. Rearview camera technology may have an impact on basic driving skills in addition to reducing collisions. Perceptual skills (such as depth perception and spatial awareness), psychomotor coordination (such as steering and brake control), and cognitive decision-making (such as hazard recognition and response timing) are all included in driving skill. According to studies, drivers who use rear-view cameras exhibit superior spatial judgment, better reversing alignment, and more precise handling in confined spaces (IIHS, 2023). Additionally, camera systems may boost drivers' self-assurance during difficult parking maneuvers, which would lessen hesitancy and anxiety—two things that often hinder performance in situations with heavy traffic.

Although rear-view cameras offer more visual information, driver behavior and technological integration play a major role in how effective they are. Researchers warn that relying too much on camera displays at the expense of traditional mirror and shoulder checks could lead to a decrease in overall situational awareness. According to the World Health Organization (2023), vehicle safety systems work best when paired with appropriate driver education, traffic law enforcement, and safe road infrastructure. Technology must therefore supplement fundamental driving skills rather than take their place in order to completely minimize crash chances. Due to the importation of newer car models and the slow introduction of ADAS-equipped vehicles into major cities like Lagos, Abuja, and Port Harcourt, rear-view camera technology is becoming more and more popular in Nigeria. However, the degree to which these technologies impact overall road safety outcomes may be impacted by differences in vehicle age, financial limitations, and low public awareness. Additionally, there are still few empirical studies that particularly look at how rear-view cameras improve Nigerian drivers' parking confidence, reversing accuracy, and collision mitigation. Although safety gains have been shown in worldwide research, these results may be moderated in Nigeria due to contextual considerations such traffic congestion, road design, driver training standards, and enforcement efficacy. Therefore, it is pertinent and opportune to assess how rear-view camera technology affects Nigerian drivers' driving abilities. It is possible to develop evidence-based recommendations for driver education programs, transportation policy development, and technology integration strategies by determining whether this technology improves reversing accuracy, boosts parking confidence, lowers minor collision rates, and strengthens overall road safety performance. This kind of assessment is in line with international road safety goals that aim to lower traffic-related injuries and fatalities, especially in emerging countries where advancements in driver skill and vehicle technology adoption can make a substantial contribution to long-term transportation safety.

Vehicle technology has developed quickly in recent years, bringing new technologies that help drivers navigate challenging road conditions. The rear-view camera, sometimes known as a backup or reversing camera, is one of these advancements. A rear-view camera is a video device installed at the rear of a car that reduces blind spots and improves rearward visibility by sending a live feed to a screen in the driver's cabin (NHTSA, 2020). This technology is very helpful while parking and reversing, especially in crowded or badly designed urban settings. A rear-mounted camera, an in-car display screen, image processing software, and occasionally dynamic guiding lines make up rear-view camera technology, which is widely integrated as part of intelligent vehicle movement systems. Orie (2022) highlighted that sensor technologies are essential parts of intelligent vehicle systems in Nigeria, improving environmental perception and agility on Nigerian roadways. In a same vein, rear visibility solutions dramatically lower back-over crashes, especially those involving people and stationary objects, according to the National Highway Traffic Safety Administration (2020). Rear-view cameras help drivers with obstacle identification and spatial judgment by sending real-time photos of the area behind the car to a dashboard display. This is especially crucial in crowded areas like Lagos and Abuja, where there are few parking spots and a lot of foot traffic. The ability of a driver to steer a car backward without colliding or making a spatial error is known as reversing accuracy. In crowded metropolitan settings, backing collisions are frequent and frequently result from poor rear visibility. The significance of visual support systems like rear-view cameras was highlighted by Chakraborty et al.'s (2025) analysis of backing maneuver crashes, which revealed visibility limits and delayed driver response as significant predictors of reversing collisions. The term "parking confidence" describes a driver's psychological security and sense of competence when navigating tight spots. Decision-making, performance, and reaction time are all impacted by confidence. Nwadiuto et al. (2021) showed that gaze patterns and visual information processing had an impact on drivers' decision-making. Accurate judgment is improved by having access to improved visual signals. In the Nigerian environment, where informal parking practices

are prevalent, rear-view cameras offer extra visual input that may boost confidence and decrease hesitancy during parking, especially among less experienced drivers, female drivers, and older drivers.

According to the Human Factors Theory, human limitations in observation, cognition, and reaction are the cause of accidents. Rear-view cameras are compensatory devices that enhance environmental awareness and lessen perceptual errors (Cicchino, 2017). The technologies Acceptance Model uses perceived utility and perceived usability to explain why people adopt new technologies. If Nigerian drivers see increases in parking efficiency and reversing precision, they are more inclined to install rear-view cameras. Rearview camera use is positively correlated with better driving performance, according to numerous empirical investigations (Akande, 2021; Labbo et al., 2025; Orie, 2022; Chakraborty et al., 2025). This study fills a research gap because there hasn't been much empirical research that particularly assesses how rear-view camera technology affects Nigerian drivers' driving abilities. This study aims to support continuing initiatives to improve driving abilities, advance road safety, and advance driver education in Nigeria by investigating the connection between the use of rear-view cameras and practical driving performance.

### Statement of the Problem

Due to several socioeconomic, educational, and infrastructure issues, driving in Nigeria is still a difficult and dangerous activity. Minor crashes during reversing and parking are common due to risky driving circumstances caused by poor road design, potholes, inadequate signage, and high vehicle congestion (FRSC, 2023). Limited driver training programs, which frequently concentrate on fundamental vehicle operation and traffic law compliance but do not incorporate advanced vehicle technology or situational decision-making abilities, further exacerbate these issues (Onyemaechi & Okonkwo, 2021). Because of this, many drivers find it difficult to execute precise and safe reversing maneuvers, especially in cities like Lagos, Abuja, and Port Harcourt where traffic jams and unofficial parking are prevalent (Akande, 2021). It has been demonstrated worldwide that assistive vehicle technologies, like rear-view cameras to Godthelp (2019) and Gbenga-Fabusiwa (2025), improve driver perception, increase maneuvering accuracy, and lower collision rates (NHTSA, 2020; Cicchino, 2022). In order to compensate for poor rear visibility and blind spots, which are frequently linked to backing collisions, rear-view cameras offer a real-time visual feed of the region behind the car. Research conducted in industrialized nations shows that drivers using these devices are more confident while parking, have better reversing accuracy, and are less likely to be involved in small crashes than drivers without them (Cicchino, 2022). The prevalence of older vehicles, the importation of secondhand cars (Tokunbo), and the general lack of public knowledge about the capabilities of Advanced Driver-Assistance Systems (ADAS) are the main reasons why adoption in Nigeria is unequal despite these proven advantages (Eze & Ogunbiyi, 2022). In addition, there is very little official driver education that incorporates car technology. The majority of driving schools in Nigeria still use conventional teaching techniques, ignoring the need to teach drivers about contemporary technologies like parking sensors, rearview cameras, and automated braking systems (Onyemaechi & Okonkwo, 2021). Drivers may own cars with these technologies but lack the expertise or self-assurance to properly use them to improve safety, creating a huge gap in the application of practical skills. Technology adoption is also influenced by cultural and behavioral variables. For example, drivers' opinions about the utility, danger, and usability of assistance systems can decide whether or not they are regularly used during crucial maneuvers (Labbo et al., 2025).

The danger of crashes during reversing and parking is increased by a number of factors, including inadequate infrastructure, inadequate training, a high vehicle density, and uneven technology adoption (McDonald et al., 2016). There is little empirical research assessing the influence of rear-view cameras specifically on Nigerian drivers' abilities, confidence, and collision reduction, despite the fact that evidence from around the world indicates that these devices are successful in decreasing accidents. Localized research is necessary since socioeconomic and environmental factors, such as vehicle age, affordability, urban traffic density, and driver awareness, are likely to reduce these impacts (Eze & Ogunbiyi, 2022). In order to close these important gaps, this study evaluates how much the use of rear-view cameras enhances critical driving abilities, including parking confidence and reversing accuracy, and promotes safer driving practices in Nigeria. In order to assist the decrease of minor crashes and improve overall road safety, the studies seek to offer empirical evidence to guide policy suggestions, driver education programs, and technological integration initiatives.

### Aim and Objective of the Study

This study aims to investigate how Nigerian drivers' use of rear cameras affects their driving abilities. In particular, the study objectives are to:

1. Determine whether the use of rear cameras improves reversing accuracy among drivers in Nigeria.
2. Assess the extent to which rear camera use reduces the frequency of minor reversing collisions.
3. Evaluate whether rear camera usage enhances parking confidence and efficiency among Nigerian drivers.

### Research Questions

1. What is the relationship between the use of vehicle rear cameras and reversing accuracy among Nigerian drivers?
2. Does the use of rear cameras reduce the frequency of reversing-related collisions?
3. How does the use of rear cameras affect drivers' parking confidence and efficiency?

### Research Hypotheses

- **H<sub>01</sub>:** There is no significant relationship between the use of rear cameras and reversing accuracy among Nigerian drivers.
- **H<sub>02</sub>:** Rear camera usage does not significantly reduce the frequency of reversing-related collisions.
- **H<sub>03</sub>:** Rear camera usage does not significantly improve drivers' parking confidence and efficiency.

### Methodology

In order to investigate the connection between rearview camera use and driving abilities among Nigerian drivers, this study used a quantitative, descriptive survey design (Yoshino et al. 2021). The architecture was selected to enable the gathering of numerical data that could be statistically examined to ascertain how rear-view cameras affected parking confidence, collision frequency, and reversing precision. Licensed drivers in four major Nigerian cities—Lagos, Abuja, Port Harcourt, and Kano—where urban density and traffic congestion increase the requirement for safe parking and accurate reversing, made up the target audience. Ride-hailing companies, commercial drivers, and owners of private vehicles made up the population. Utilizing stratified random sampling, a total of 300 drivers were chosen, with 150 drivers utilizing rear-view cameras and 150 drivers without, guaranteeing equal representation from each city. All variables might be compared thanks to this stratification. There were two instruments used: Reversing Accuracy, Collision Incidence During Reversing, and Parking Confidence and Efficiency were the three portions of the structured questionnaire, which consisted of twenty closed-ended items assessed on a 5-point Likert scale. The Driving Performance Observation Checklist is used to evaluate participants' parking and reversing skills during controlled driving exercises in parking lots. Standardized scoring criteria were incorporated into the checklist to guarantee uniformity. Three professionals in the fields of automotive education and road safety studies used content and face validation methodologies to validate the instruments. The questionnaire's Cronbach's alpha was 0.87 in a pilot test with thirty drivers in Enugu, demonstrating strong internal consistency. Additionally, the inter-rater consistency of the observation checklist was examined. After being informed of the study's objectives, participants gave their informed consent. On the same day, questionnaires were given out and collected in person. The observation checklist was used to record each participant's performance during a controlled reversing and parking activity. Over the course of four weeks, data was gathered in each of the chosen cities. SPSS version 26 was used to code and analyze the data. Responses were summarized using descriptive statistics, such as mean and standard deviation. The Pearson Product-Moment Correlation Coefficient (PPMC) was used for inferential statistics with a significance threshold of 0.05. The following theories were put to the test: H<sub>01</sub>: The use of rear-view cameras and reversing accuracy do not significantly correlate. H<sub>02</sub>: The frequency of collisions during reversing is not significantly correlated with the use of rear-view cameras. H<sub>03</sub>: The use of rearview cameras and parking confidence/efficiency are not significantly correlated. Time frame throughout the chosen cities. SPSS version 26 was used to code and analyze the data.

## Results

**RQ 1:** What is the relationship between the use of vehicle rear cameras and reversing accuracy among Nigerian drivers?

**Table 1: Mean and Standard Deviation for Driving Skill Variables.**

Driving Skill Variable	Group	N	Mean (M)	(SD)
Reversing Accuracy	With Rear Camera	150	4.51	0.53
	Without Rear Camera	150	3.05	0.81
Reversing Collision Frequency (lower is better)	With Rear Camera	150	1.42	0.68
	Without Rear Camera	150	2.86	1.12
Parking Confidence and Efficiency	With Rear Camera	150	4.25	0.62
	Without Rear Camera	150	3.09	0.91

According to the comparative analysis, drivers who use rear cameras outperform those who do not in every measurable driving ability category. In particular, rear camera users had better parking confidence and efficiency ( $M = 4.25$  vs.  $3.09$ ), fewer reversing collisions ( $M = 1.42$  vs.  $2.86$ ), and higher reversing accuracy ( $M = 4.51$  vs.  $3.05$ ). Furthermore, more consistent and dependable performance is indicated by the lower standard deviations among rear camera users. These results imply that on Nigerian roads, rear camera technology improves technical driving abilities, safety results, driver confidence, and operational effectiveness.

**H<sub>0</sub>1:** There is no significant relationship between the use of rear cameras and reversing accuracy.

**Table 2: Pearson Product-Moment Correlation (PPMC) Results.**

Variable Pair	r-value	p-value	Interpretation
Rear Camera Use & Reversing Accuracy	0.62	0.000	Strong Positive Correlation
Rear Camera Use & Reversing Collision Rate	-0.51	0.003	Moderate Negative Correlation
Rear Camera Use & Parking Confidence	0.58	0.000	Strong Positive Correlation

Using the Pearson Product-Moment Correlation Coefficient (PPMC), the association between rear camera use and a few driving ability characteristics was investigated. The findings show statistically significant correlations for every variable. Reversing accuracy and rear camera use were shown to be strongly positively correlated ( $r = 0.62$ ,  $p < 0.01$ ), suggesting that drivers who use rear cameras perform significantly better when reversing. Similarly, there was a significant positive association between the use of rear cameras and parking confidence ( $r = 0.58$ ,  $p < 0.01$ ), indicating that drivers who have rear cameras are more confident and productive when parking. On the other hand, there was a moderately unfavorable association ( $r = -0.51$ ,  $p < 0.01$ ) between the use of rear cameras and the rate of reversing collisions. This shows that using back cameras more frequently is linked to fewer collisions caused by reversing, underscoring the technology's safety advantages. These results verify that every association is practically meaningful and statistically significant ( $p < 0.05$ ). According to the investigation, rear camera technology improves driving performance by lowering the chance of crashes and improving technical abilities like parking efficiency and reversing precision. Overall, the findings highlight how rear cameras help Nigerian drivers drive more safely and dependably.

**Research Question 2: Does the use of rear cameras reduce reversing-related collisions?**

Group	N	Mean (M)	Standard Deviation (SD)
With Rear Camera	150	1.42	0.68
Without Rear Camera	150	2.86	1.12

The incidence of reversing collisions between drivers who utilize rear cameras and those who do not is contrasted in the table. The mean collision frequency was decreased for drivers who had rear cameras ( $M = 1.42$ ). The mean for drivers without rear cameras was higher ( $M = 2.86$ ). The outcome demonstrates that drivers with rear cameras had substantially fewer reversing-related collisions because lower scores indicate fewer crashes. Furthermore, the standard deviation for drivers without rear cameras ( $SD = 1.12$ ) is larger than that of drivers with rear cameras ( $SD = 0.68$ ), suggesting that the incidence of collisions among drivers without the technology is more variable and inconsistent. According to descriptive data, the usage of rear cameras seems to lessen driver collisions caused by reversing, the dependability and safety of Nigerian drivers.

**H<sub>02</sub>:** *There is no significant relationship between rear camera use and reversing-related collision frequency.*

Variable Pair	r-value	p-value	Decision	Interpretation
Rear Camera Use & Reversing Collision Frequency	-0.51	0.003	Reject H <sub>02</sub>	Moderate negative significant relationship

The association between the incidence of reversing collisions and the use of rear cameras was investigated using the Pearson Product-Moment Correlation analysis. The results showed a moderately negative association ( $r = -0.51$ ), indicating that the likelihood of reversing collisions lowers as rear camera use rises. With a p-value of 0.003, which is less than the 0.05 significance level, the connection was statistically significant. As a result, the null hypothesis ( $H_{02}$ ) is rejected, demonstrating a strong correlation between the use of rear cameras and fewer reversing collisions. This result shows that rear camera systems significantly improve road safety by reducing the risk of reversing-related collisions among Nigerian drivers.

**Research Question 3: How does the use of rear cameras affect drivers' parking confidence and efficiency?****Table: Descriptive Analysis for RQ3.**

Group	N	Mean (M)	Standard Deviation (SD)
With Rear Camera	150	4.25	0.62
Without Rear Camera	150	3.09	0.91

The table displays descriptive statistics comparing parking efficiency and confidence between drivers who utilize rear cameras and those who do not. There was a mean difference of 1.16 between drivers with rear cameras ( $M = 4.25$ ) and those without ( $M = 3.09$ ). This suggests that using back cameras is linked to far greater parking confidence and operational effectiveness. Additionally, the standard deviation for rear camera users ( $SD = 0.62$ ) was lower than that of non-users ( $SD = 0.91$ ), indicating that drivers without cameras showed more variability in their parking

performance. Overall, these descriptive findings show that drivers' confidence and performance during parking maneuvers are improved by rear camera technology.

$H_{03}$ : *There is no significant relationship between rear camera use and drivers' parking confidence and efficiency.*

**Table 2: Test of Hypothesis ( $H_{03}$ )**

Variable Pair	r-value	p-value	Decision	Interpretation
Rear Camera Use & Parking Confidence	0.58	0.000	Reject $H_{03}$	Strong positive significant relationship

The association between rear camera use and parking efficiency and confidence was investigated using the Pearson Product-Moment Correlation (PPMC). Higher rear camera utilization is linked to increased parking confidence and operating efficiency, according to the results, which showed a strong positive association ( $r = 0.58$ ).  $P = 0.000$ , which is less than the 0.05 cutoff, indicates that the link was statistically significant. As a result, there is a substantial correlation between the use of rear cameras and improved parking ability, and the null hypothesis ( $H_{03}$ ) is rejected. These results show that rear camera technology significantly enhances parking's technical and psychological elements, improving driver performance and boosting confidence on Nigerian roads.

### Discussion

The study examined how rear camera systems affected drivers' abilities on Nigerian roads, paying particular attention to parking confidence/efficiency, reversing accuracy, and reverse crash frequency. Reversing accuracy was much higher for drivers with rear cameras ( $M = 4.51$ ) than for those without ( $M = 3.05$ ). Rear camera use and reversing accuracy had a strong positive and statistically significant link ( $r = 0.62$ ,  $p < 0.05$ ) according to Pearson correlation analysis, which led to the rejection of  $H_{01}$ . According to this research, rear camera systems can improve spatial judgment, decrease blind spots, and improve visual feedback when reversing. These findings are consistent with Cicchino's (2017) findings that rear visibility solutions greatly enhance driver performance and lower backing errors. In a similar vein, Kidd et al. (2015) discovered that rearview camera systems improve reversing accuracy and object recognition. From a technology standpoint, rear cameras are parts of Advanced Driver Assistance Systems (ADAS), which are intended to improve human perception and reduce driving mistakes (National Highway Traffic Safety Administration [NHTSA], 2014). Drivers with rear cameras had fewer reversing-related collisions ( $M = 1.42$ ) than drivers without rear cameras ( $M = 2.86$ ), according to the descriptive statistics. The moderately unfavorable connection ( $r = -0.51$ ,  $p < 0.05$ ) found by Pearson correlation analysis led to the rejection of  $H_{02}$ . This negative connection suggests that using back cameras more frequently is linked to fewer collisions. The results support those of Cicchino (2017), who found that cars with rear visibility systems had far lower backing crash rates. Highway Safety Insurance Institute (IIHS, 2016). Comparable decreases in property damage claims for cars equipped with rearview cameras. Rear camera systems can improve situational awareness, reduce human error, and improve rear-field sight in places like Nigeria, where reversing-related incidents are frequent in parking lots, residential neighborhoods, and crowded urban areas.

Additionally, drivers with rear cameras showed greater parking efficiency and confidence ( $M = 4.25$ ) compared to those without ( $M = 3.09$ ).  $H_{03}$  was rejected after Pearson correlation analysis revealed a strong positive and statistically significant association ( $r = 0.58$ ,  $p < 0.05$ ). This suggests that rear camera systems boost drivers' psychological comfort and confidence in addition to their technical driving ability. According to McDonald et al. (2016), driver-assistance technology boost self-assurance and lower stress levels during challenging maneuvers like parking. The Technology Acceptance Model (Davis, 1989) states that drivers who think rear cameras are practical and simple to use are more likely to depend on them, which improves performance outcomes. Rear camera technology has a favorable impact on important driving performance metrics, according to the study:

- Reversing Accuracy: Strongly positive association ( $r = 0.62$ ,  $p < 0.05$ ); higher among drivers with rear cameras ( $M = 4.51$  vs. 3.05).

- The frequency of reversing collisions is lower among drivers who use rear cameras ( $M = 1.42$  vs. 2.86); the correlation is moderately negative ( $r = -0.51$ ,  $p < 0.05$ ).

• Parking Confidence and Efficiency: Strongly significant connection ( $r = 0.58$ ,  $p < 0.05$ ); higher among drivers with rear cameras ( $M = 4.25$  vs.  $3.09$ ).

The null hypotheses ( $H_{01}$ ,  $H_{02}$ , and  $H_{03}$ ) were rejected due to statistical significance in all cases ( $p < 0.05$ ), indicating that the use of rear cameras considerably improves driving performance.

Rear camera systems increase driver confidence when parking, decrease crash rates, and improve reversing accuracy. These results provide credence to the use of rear-view cameras in contemporary automobiles as a practical road safety measure, especially in developing nations like Nigeria.

## Conclusion

The impact of car rear cameras on drivers' abilities on Nigerian roads was examined in this study, with particular attention paid to parking confidence and efficiency, reversing accuracy, and reversing-related collisions. The results repeatedly show that driving performance is much enhanced by rear camera technology. Compared to drivers without the device, those with rear cameras showed improved parking confidence, reduced reversing-related collisions, and increased reversing accuracy. These devices successfully improve driver performance and safety, as evidenced by the substantial positive correlations between rear camera use and parking confidence ( $r = 0.58$ ) and reversing accuracy ( $r = 0.62$ ), as well as the somewhat negative association with collision frequency ( $r = -0.51$ ). Rear camera use and driving skill characteristics were found to be statistically significantly correlated, with all relevant null hypotheses ( $H_{01}$ ,  $H_{02}$ , and  $H_{03}$ ) being rejected. To sum up, rear camera systems are an efficient Advanced Driver Assistance System (ADAS) that enhances technical driving performance, increases driver confidence, and lowers the likelihood of collisions. The study emphasizes how important it is to incorporate rear camera technology into cars as a useful intervention to improve operational effectiveness and traffic safety on Nigerian roads.

## Recommendations

The following policy recommendations are suggested for implementation by automakers, regulatory bodies, and driver training facilities in Nigeria based on the study's findings on reversing accuracy, collision reduction, and parking confidence among drivers utilizing rear cameras:

1. Rear cameras should be installed in both new and old cars by automakers and importers. To promote adoption, policymakers could offer incentives like tax rebates, insurance reductions, or subsidies.
2. Drivers should be given specialized instruction on how to operate rear cameras. To enhance reversing abilities and confidence, driving schools and licensing authorities should include rear camera operation in hands-on training programs.
3. Campaigns emphasizing the advantages of rear cameras in lowering blind zones, limiting collisions, and improving parking efficiency should be started by road safety organizations, especially in crowded urban and residential locations.
4. Policymakers and industry stakeholders should encourage the integration of rear cameras with other ADAS technology including sensors and automated braking.
5. Urban planners and parking facility managers should provide areas that encourage safe reversing habits, such as zones free of obstructions, clear lane markings, and sufficient visibility.

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