
ASSESSING TRENDS OF VEHICLE OWNERSHIP AND USE AMONG TERTIARY STUDENTS IN KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY CAMPUS, GHANA

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Abstract

The study aims to assess trends of car ownership and usage among tertiary students on campus, with an emphasis on Kwame Nkrumah University of Science and Technology (KNUST). The research design employed in this study was descriptive survey, aiming to gather information from a sample population through their responses to specific questions. Data analysis was conducted using descriptive statistics, summarizing the responses quantitatively through bar charts, pie charts, frequencies, percentages as well as means and tables, created using Microsoft Excel. The results revealed that, a majority (70 percent) of the cars being used by students on the KNUST campus are owned by Ghanaian students with foreign students making up the minority of this number. The major challenges faced by students who own or use vehicles on campus are a lack of filling stations on and around campus, lack of student parking lots, and excess traffic. From the findings, it can be concluded that, students' psychological make-up is a major determinant of vehicle ownership among students. Moreover, the findings further revealed that most of the students who have vehicles on the campus exhibit or develop mostly negative habits after vehicle ownership and this in the long run may have negative effects on academic performance which is the sole purpose of being on campus. The study provides insights into the environmental and health impacts of increased vehicle use on university campuses, offering valuable insights for policy decisions, future research, and campus management, thereby enhancing student mobility.

Keywords: Vehicle ownership, tertiary students, KNUST

INTRODUCTION

Vehicle ownership has risen dramatically around the world in recent decades. Including off-road vehicles and heavy construction equipment, there were over one billion motorized vehicles in use worldwide in 2010. The global vehicle population is expected to double by 2040, according to the World Economic Forum (2016). According to the International Energy Agency (IEA), by 2030, there will be nearly 2 billion vehicles on the road, and by 2050, there will be 3 billion. In the current demand trajectory, the overall passenger car fleet in non-OECD countries will grow fivefold by 2050, while the fleet in OECD countries will only grow by 16% (IEA, 2018). Due to rising economic levels, car ownership is fast expanding in many emerging nations (Basu & Ferreira, 2021; Chu et al., 2022; Diao et al., 2021; Mattioli et al., 2020; Muratori et al., 2021). In metropolitan places, high levels of automobile ownership are unwelcome. Although automobile ownership is commonly linked with more mobility, it often leads to increased traffic congestion, urban sprawl, additional time spent stuck in traffic, increased pollution, and expensive transportation expenses (Ayaragarnchanakul & Creutzig, 2022; Filippi, 2022; Kaplan, 2020; Li et al., 2020; Marks, 2020).

Furthermore, as the world's population grows and motorization increases, limited infrastructure and institutional capacity are put under strain. As a result, it's critical from a policy and planning standpoint to identify trends in car ownership and analyze usage among tertiary students on campus, so that interventions may be created to counteract growing

ownership levels. Car ownership is on the increase practically everywhere, and it is expected to accelerate in nations like China and India (Panagariya, 2020; Pucher et al., 2007; Singh et al., 2021). Despite the fact that automobile ownership rates in developing nations such as Ghana are far lower than in wealthy countries such as the United States or the United Kingdom (165 per 1000 persons vs 809 and 519 respectively, according to the World Bank).

KNUST is located in the Oforikrom Municipal, which was created in 2018 from the Kumasi Metropolitan Assembly. KNUST is surrounded by urban settlements such as Ayigya, Oforikrom, Bomso, Ayeduase, Kentinkrono, and Kotei, where the majority of the continuing students live in various hostels. Some of the areas have significant population density, which adds to the already large flood of students on campus who struggle to find a shuttle or other mode of transportation. This usually results in large lines at various bus stations across the institution, with students stampeding at times, as well as students battling community members with limited transit options. This may have an impact on tertiary students who can afford or have access to a vehicle to drive on campus. It is frequently asserted that young people lack incentive to drive and own automobiles (Casadó et al., 2020; King et al., 2022; Klein, 2024; Moody et al., 2021; Ortar et al., 2020). Belgiawan et al. (2016) investigated student automobile ownership reasons and found substantial differences between students in industrialized and developing nations. In a work important to transportation system design, Ma et al. (2019) gave a complete synthesis of the modeling methodologies and data sources used to simulate automobile ownership, as well as a review of relevant research in developing nations. In light of previous studies, the study aims to look at the trends of car ownership and usage among Ghanaian university students, with an emphasis on KNUST students.

Despite the lower average speeds of automobiles relative to motorbikes in already congested cities and other evident environmental negative effects, this trend toward more and bigger vehicles appears to be continuing in many emerging nations like Ghana. The majority of global automobile ownership growth is expected to occur in developing nations such as Ghana (Jones et al., 2013; Narteh et al., 2012; Obeng-Odoom, 2010). Despite the fact that several studies on automobile ownership have been conducted throughout the world ((Belgiawan et al., 2016; Zhu et al., 2012), there is a scarcity of empirical research in Ghana, particularly among tertiary students (Opoku et al., 2022; Salon & Aligula, 2012).

There is a mismatch between the demand for transportation and the availability of transportation services in Ghana's numerous institutions, including KNUST, as a result of restricted transportation modals on campus. As a result, it is true that the university's student population has risen dramatically in recent years, from fewer than 10,000 in the late 1990s to around 45,000 (or close to 50,000). Many issues have arisen as a result of the significant increase in student population, including internal mobility and the quality or efficiency of internal transportation services. During the same time period, school officials banned taxi access in some areas of the university campus. Instead of these limitations, the university administration has set up shuttle buses to carry students from their dorms to lectures and back. The costs of these buses are included in the facility-user fees. Students complain about the shuttle's and other vehicles' quality of service, safety on board, and the shuttle's and other cars' quick and irregular operations.

In the face of rising demand and a wide range of transportation services needed by students, these shuttles appear to be insufficient or ineffective. Many students rely on urban services or their own automobiles to handle these shortcomings and inefficiencies. Students' private automobile ownership and use presents a variety of issues. Careless or intoxicated driving, vehicle registration issues, vehicle and driver license issues, and infrastructural deficiencies, such as parking, halting spaces, and pedestrian crossings, are just a few of the concerns. Road crashes caused by irresponsible driving and bad infrastructure are also linked to the aforementioned. Examining trends, proportions of car ownership, and vehicle usage

among tertiary students on campus is particularly critical from a policy and planning standpoint.

This study assessed trends of vehicle ownership and use among tertiary students in Kwame Nkrumah University of Science and Technology campus (KNUST). The research contributes to understanding the patterns of vehicle ownership and usage among tertiary students at Kwame Nkrumah University of Science and Technology (KNUST). By examining these trends, the study provides valuable insights into students' transportation preferences, mobility behaviors, and potential challenges related to campus transportation. The findings can inform university policy decisions regarding campus infrastructure, parking, and sustainable transportation initiatives, while also offering a basis for future research on student mobility in similar educational institutions.

RESEARCH METHOD

The research design employed in this study was descriptive survey, aiming to gather information from a sample population through their responses to specific questions. The study focused on the entire student population (64,187) of Kwame Nkrumah University of Science and Technology (KNUST), Kumasi Campus. However, the target demographic specifically included students who owned cars, although the exact number of car-owning students was not available. The study utilized purposive sampling, selecting individuals based on certain relevant characteristics, particularly car ownership, as they were deemed most knowledgeable about the subject matter. Based on student population of 64,187, a sample size of 100 respondents was determined using a margin of error of 5%, a confidence level of 75%, and an assumed population percentage of 75%. Data collection primarily involved the use of questionnaires, administered via Google Forms. The questionnaire included both closed and open-ended questions and underwent pilot testing for content validity. Open-ended responses were grouped, and closed-ended responses were pre-coded for analysis. Data analysis was conducted using descriptive statistics, summarizing the responses quantitatively through bar charts, pie charts, frequencies, percentages as well as means and tables, created using Microsoft Excel.

RESULT AND DISCUSSION

Demographic Characteristics of Respondents (KNUST Students)

The majority of respondents were male, comprising 60% of the total, while females made up 40%. This indicates a dominance of male students on the KNUST campus, although the proportion of female students is notable and signifies progress towards gender empowerment. Half of the respondents fell between the ages of 18 and 30, representing 50% of the total. Thirty percent were aged between 31 and 40, and 20% were aged between 41 and 50. This highlights a predominantly youthful representation among students, with a fair representation of middle-aged individuals, emphasizing the lack of age barriers in education. The majority of respondents were pursuing First Degree programs (60%), followed by Master's Degree students (30%), and a smaller percentage pursuing doctorate programs (6%). A minority were pursuing other programs, likely certificate or diploma courses, comprising 4%. Respondents were affiliated with various colleges, with the highest representation from the College of Health Sciences (32%), followed by the College of Business School (24%), College of Agriculture (20%), College of Humanities and Social Sciences (14%), and College of Engineering (10%). This diversity in college affiliation provides a comprehensive perspective on student car ownership and usage at KNUST.

Examine the Trends and Proportion in Vehicle Ownership (Objective 1)

Table 1. Examine the Trends and Proportion in Vehicle Ownership

STATEMENT	SD	D	N	A	SA
Vehicles are owned by students from wealthy homes	-	7 (7)	10 (10)	30	53 (53)
Vehicles are owned by students travelling from far places to lectures	-	-	10 (10)	20 (20)	70 (70)
Students who are employed are the ones that own cars on campus	22 (22)	38 (38)	11 (11)	20 (20)	9 (9)
Car ownership and usage becomes a necessity when one reaches tertiary level on the education ladder	24 (24)	35 (35)	-	30 (30)	11 (11)
Foreign or international students on campus represent the population that own most cars	40 (40)	30 (30)	5 (5)	15 (15)	10 (10)
A reduction in importation duties have heightened car ownership and usage among students	10 (10)	20 (20)	30 (30)	25 (25)	15 (15)
Auctioning of cheap cars has influenced student's car ownership and usage	-	20 (20)	50 (50)	20 (20)	10 (10)

Note: *Strongly Disagree (SD), Disagree (A), Neutral (N), Agree (A), Strongly Agree (SA)*

Table 1 is an illustration of the responses gathered in relation to the trends and proportion in vehicle ownership/usage on the KNUST campus. With respect to the statement; ‘Vehicles are owned by students from wealthy homes’, a strong number of 83 respondents representing 83% strongly agreed or agreed with this statement. However, 10 respondents representing 10% remained ‘neutral’ with respect to the statement whilst, a minority of 7 respondents representing 7% disagreed with the same statement. This indicates that, most of the students on campus who own or use cars from wealthy homes. In the Ghanaian setting, wealth is displayed in ways such as ownership of multiple cars and this allows the children of such wealthy families to enjoy such privileges.

In relation to the statement; ‘Vehicles are owned by students travelling from far places to lectures’, the responses proved this to be true as a majority of 90 respondents representing 90% strongly agreed or agreed with this statement with, the remainder of 10 respondents representing 10% also chose to remain neutral regarding the statement. This implies that, due to excessive transport costs; students purchase cars out of necessity and not luxury. Owning a car can also help one in avoiding excessive traffic often caused by public transport due to numerous bus-stops and passenger loading antics adopted by most these public transport drivers and conductors. Therefore, comparatively it makes economic and professional sense to own a car if schools are far from places of domicile.

With respect to the statement; ‘Students who are employed are the ones that own cars on campus’, the responses were quite diverse but, a majority of 60 respondents representing 60% strongly disagreed and disagreed with this statement. A further 29 respondents representing 29% also strongly agreed or agreed with the same statement whereas the remaining 11 respondents representing a minority of 11% chose to remain neutral regarding the statement. This shows that, being employed does not automatically allow one to purchase or own a car. Most of the students on campus are workers but due to the fact that, they also pay their own school and utility bills, it becomes difficult to afford personal belongings such as a car. However, this does not imply that, all students involved in employment cannot afford to purchase cars but, those that can afford are in the minority, given high paying jobs in Ghana are not for the majority.

From Table 1 it can be seen that, a majority of 59 respondents representing 59% strongly disagreed or disagreed with the statement; ‘Car ownership and usage becomes a necessity when one reaches tertiary level on the education ladder’. However, the remaining 41 respondents representing 41% also strongly agreed or agreed with the same statement. This indicates that, in as much as most of the students on the KNUST campus have no qualms with no car ownership or usage; a substantial number of students on campus view car ownership as a must once tertiary education is being pursued. This is a behavioural trait that can influence a wider student population leading to students trying to gain income regardless of the form. This can then be considered as a trend that is bound to grow over the years.

With respect to the statement; ‘Foreign or international students on campus represent the population that own most cars’, a huge proportion of the respondents (70) representing 70% strongly disagreed or disagreed with this statement; this was followed by 25 respondents representing 25% who also strongly agreed or agreed with the same statement but, a minority of 5 respondents representing 5% decided to remain neutral regarding the statement. This implies that, a majority of the cars being used by students on the KNUST campus are owned by Ghanaian students with foreign students making up the minority of this number.

Furthermore, a majority of 40 respondents representing 40% strongly agreed or agreed with the statement; ‘A reduction in importation duties have heightened car ownership and usage among students. In addition, 30 respondents representing 30% also, strongly disagreed or disagreed with same assertion and this was the same number recorded as the remaining 30% also chose to remain neutral. This indicates that, a chief reason for the increase in car ownership by students can be attributed to the reduction in import duties that meant, cars could be purchased from overseas relatively cheaper.

With respect to the assertion; ‘Auctioning of cheap cars has influenced students’ car ownership and usage’, one half of the respondents (50) representing a majority of 50% chose to remain neutral in response to the assertion. A further 30 respondents representing 30% strongly agreed or agreed with the assertion whereas, the minority of 20 respondents representing 20% disagreed with the same assertion. This shows that, car auctioning does not greatly influence students’ decisions to purchase or own cars. This is partly due to the fact that, auctioning sales for public participation are rarely organized in Ghana.

Examine the Level and Purpose of Use of Vehicle on Campus (Objective 2)

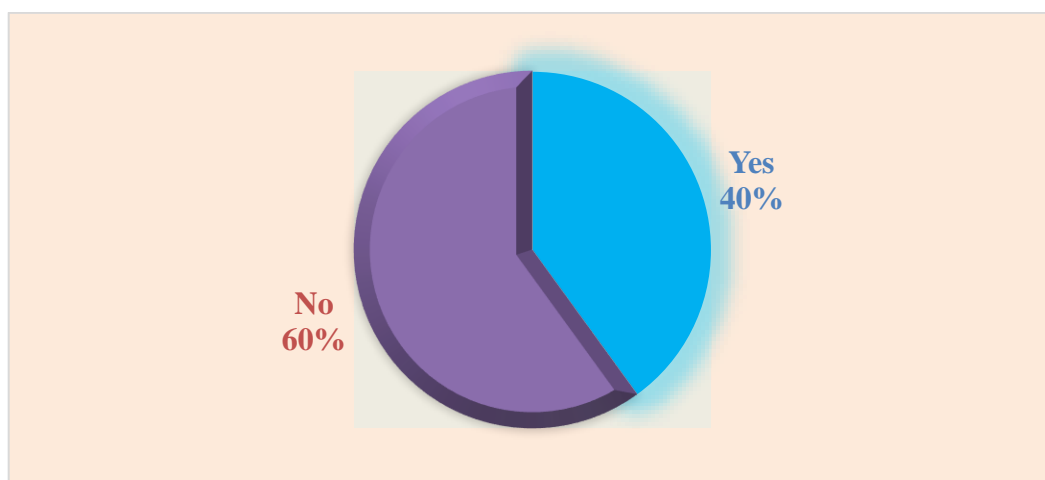


Figure 1. Students Use Vehicles on Campus for Lectures and Academic Purposes only

Figure 1 shows the responses gathered from the respondents (students) when asked if using vehicles on campus was for lectures and academic purposes only. It can be realized

that, a majority of 60% of the students responded in the negative (No) that vehicles are not used for just lectures and academic purposes. In contrast, the remaining 40% of the students responded in the affirmative (Yes) that vehicles used by students are for lectures and academic purposes only. This confirms that, most of the students on campus own cars for personal purposes and not for lectures or other academic purposes. This further implies that, the trend of owning cars at the tertiary level is gradually catching on.

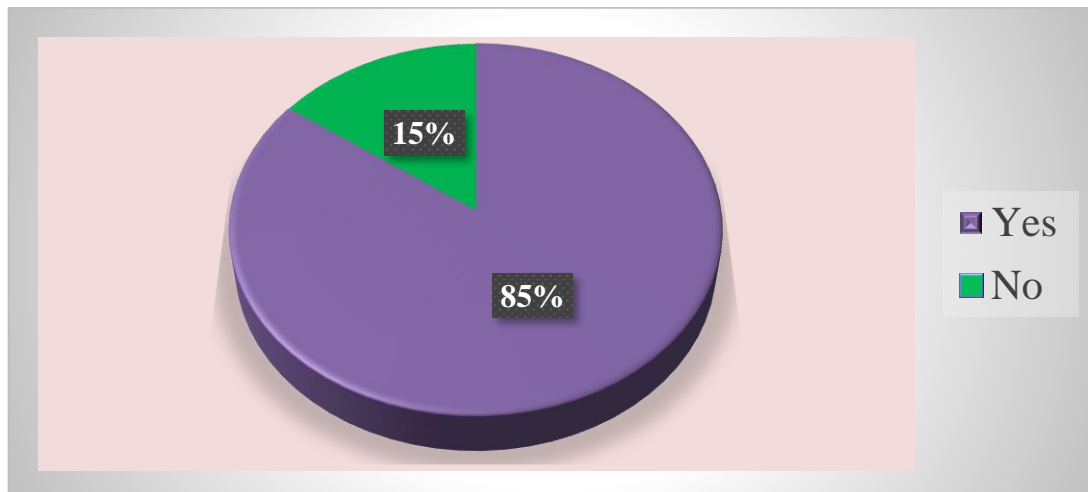


Figure 2. Students Use Vehicles on Campus for Fun and Recreation

From Figure 2 it can be realized that, a strong majority of 85% of the respondents responded in the affirmative (Yes) that, students use vehicles on campus for fun and recreation but, the remainder of 15% responded in the negative (No). This further confirms that, students' usage of cars on campus is mainly not academic inclined. Students with cars on campus command some sought of respect and prestige hence, the purpose of car usage or ownership.

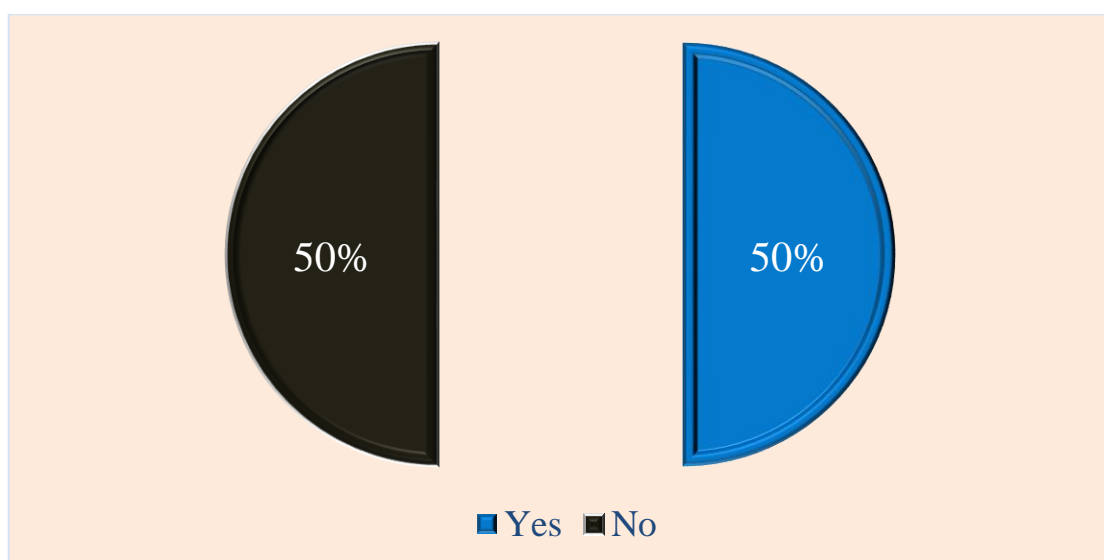


Figure 3. Vehicles are used by Students on Campus to cut down Transportation cost

Responses gathered as seen in Figure 3 was evenly split; it can be seen that, one half of the respondents (50) representing 50% claimed that, the reason students use vehicles on campus was to cut down on transportation costs but, this was totally disputed by the

remaining 50% who stated otherwise. This indicates that, most of the students use vehicles on campus for the right reasons as transportation costs keep soaring by the day. This notwithstanding, an equally strong number of students on campus also uses vehicles for personal pleasure.

From the responses, it can be confirmed that, most of the students who own or use vehicles on the KNUST campus do so to fulfill personal motives rather than academic purposes. This is worrying as the purpose of car usage may not fulfill educational objectives but rather serve as a distraction as students may skip lectures to attend unrelated programmes because they have the means to move to and fro with ease.

Analyze Determinants of Vehicle Ownership among Tertiary Students (Objective 3)

Table 2. Analyze Determinants of Vehicle Ownership among Tertiary Students

STATEMENT	SD	D	N	A	SA
The student's psychological make-up which has got to do with attitudes and social norms as in their status or family heritage/image	10 (10)	15 (15)	20 (20)	35 (35)	25 (25)
Vehicle's characteristics such as operating cost, capital cost, and fuel efficiency	7 (7)	11 (11)	-	22 (20)	60 (60)
The GDP of the country can be used as an indicator that determines the level of car ownership among students	25 (25)	30 (30)	15 (15)	20 (20)	10 (10)
The student's choice plays a key role and this is what influences the student's type of vehicle preference	-	10 (10)	-	30 (30)	60 (60)

The Table 2 is an illustration of the responses gathered in relation to determinants of vehicle ownership among tertiary students. With respect to the statement; 'The student's psychological make-up which has got to do with attitudes and social norms as in their status or family heritage/image', received the following responses. A majority of 60 respondents representing 60% strongly agreed or agreed with this statement; this was followed by 25 respondents representing 25% who also strongly disagreed or disagreed with the same statement but, the remainder of 20 respondents representing a minority of 20% also chose to remain neutral regarding the statement.

This implies that, students' psychological make-up is a major determinant of car ownership among students. Thus, students coming from affluent homes or families are more likely to use vehicles as they envision this to be a norm on campus as compared to students coming from struggling backgrounds.

In relation to the statement; 'Vehicle's characteristics such as operating cost, capital cost, and fuel efficiency', is a determinant of vehicle use; a strong majority of 82 respondents representing 82% strongly agreed or agreed with this statement but, the remaining 18 respondents representing a minority of 18% stated otherwise in response to the statement. This shows that, most of the vehicles used on campus by students are vehicles that correlate positively with students' financial muscle. Aside purchasing costs, the costs involved in using a car is quite high so if the purpose of purchasing a car is to cut down on transportation cost; it will be prudent to consider operating, capital and fuel costs when deciding to own and use a car.

It can be seen from Table 2 that, a majority of 55 respondents representing 55% of the total respondents strongly disagreed or disagreed with the statement; 'The GDP of the country can be used as an indicator that determines the level of car ownership among students' but, 30 respondents representing 30% also strongly agreed or agreed with the same statement whilst, the remainder of 15 respondents representing the minority chose to remain

neutral regarding the statement. This indicates that, car ownership and usage among students on tertiary campuses rarely has anything to do with the country's GDP.

Finally, with reference to the statement; 'The student's choice plays a key role and this is what influences the student's type of vehicle preference', more than three thirds of the respondents (90) representing 90% strongly agreed or agreed with this statement whilst, a minority 10 respondents representing 10% also disagreed with the same statement. It can be concluded that, the main determinant of car ownership or usage on tertiary campuses rests on the choices and decisions of students and these choices can be academic or pleasure influenced.

Examine the Effect of Vehicle Ownership on Students' Decisions on Daily Activities

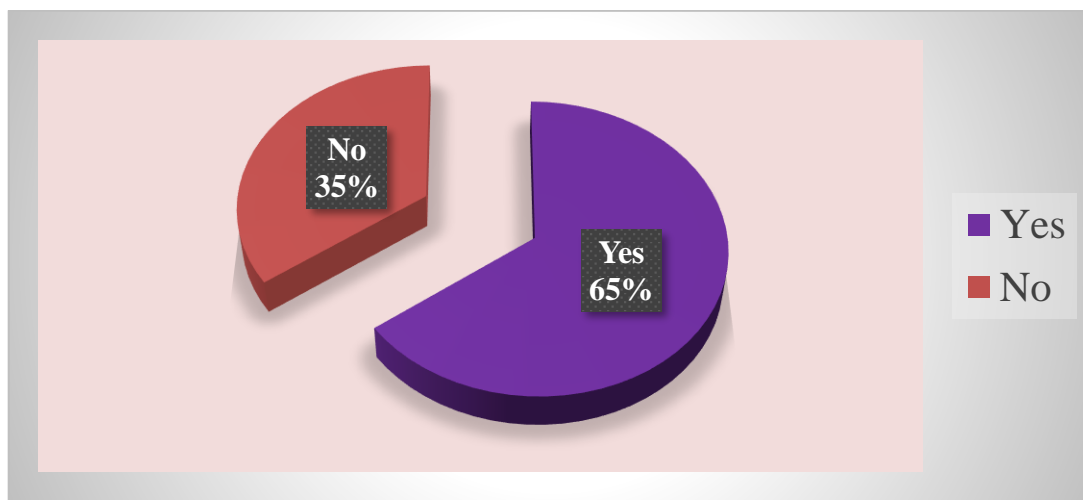


Figure 4. Students who own Cars become Punctual Coupled with an Improvement in Attendance

Figure 4 depicts the responses gathered in relation to students' car ownership and academic work. The results revealed a majority of the respondents 65 representing 65% affirming that, students who own cars become punctual and exhibit improvements in school attendance but, this was disputed by the remaining 35 respondents representing 35% of the total responses gathered. This indicates that, punctuality and high attendance rates can be found in most of the students who own cars on the KNUST campus. Having cars on campus can be beneficial in the event of lateness as students with cars can always make it in time as compared to students who have to commute by means of public transport.

As a follow-up question; the respondents were asked if; students who own cars on campus enjoy personal freedom and independence and all the respondents (100) representing 100% unequivocally responded in the affirmative (yes). Having cars enables students to commute even at odd times, and this gives them the impetus to engage in activities which would hitherto be difficult without having personal vehicles.

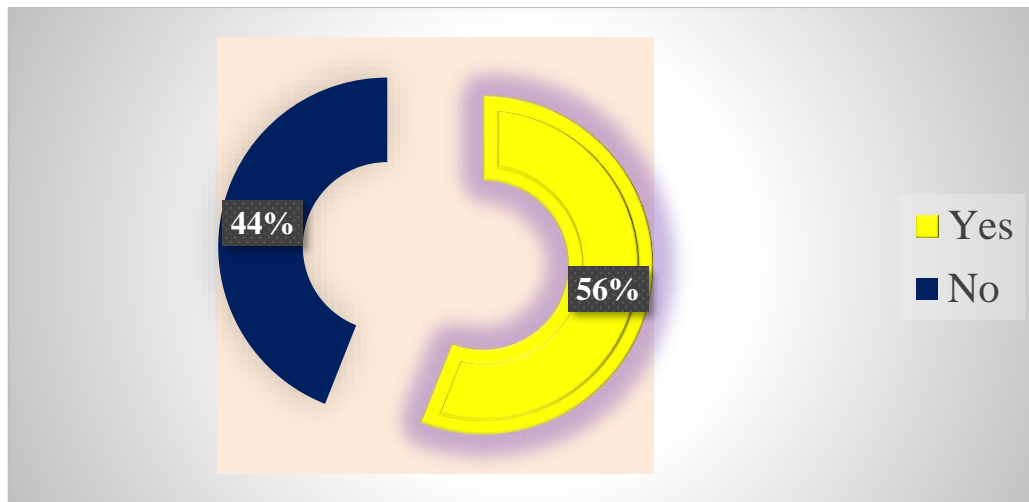


Figure 5. Car ownership among students contribute greatly to Global Warming

On the issue of global warming as a result of car usage and ownership among students; the responses showed that, 56 respondents representing a majority of 56% affirmed (Yes) that this was indeed the case as the emissions from these cars contribute to environmental problems. The remaining 44 respondents representing 44% did not agree (No) with this assertion. This implies that, students who own cars are partly to be blamed for some of the environmental problems experienced. Students with faulty and unserviced cars can emit toxic gases into the atmosphere and overtime this becomes a problem.

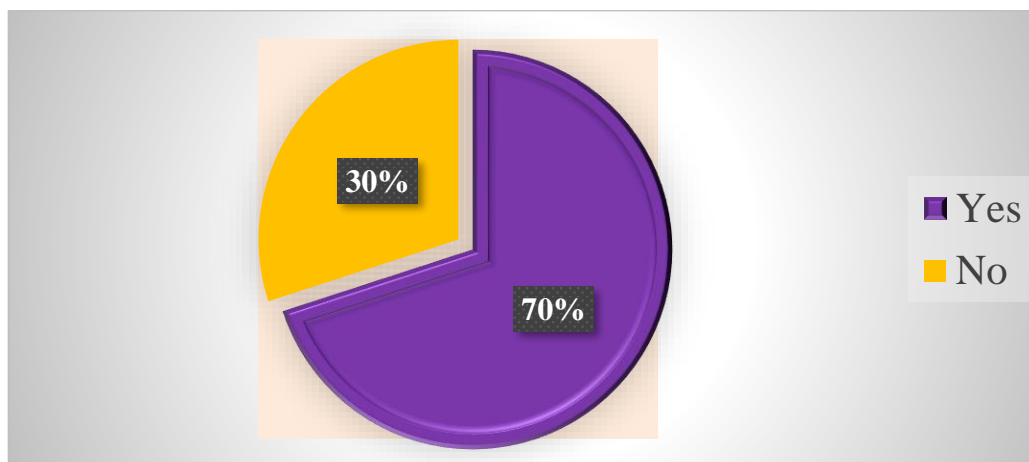


Figure 6. Car ownership among students reduces a daily activity such as walking

Figure 6 shows that, a greater number of 70 respondents representing 70% affirmed (Yes) that, car ownership among students on the KNUST campus has reduced many daily activities such as walking but, this was disputed (No) by the remaining 30 respondents representing a minority of 30%. This implies that, due to the ownership of cars among students' physical exercises are seldom practiced by most the students who own cars, hence contributing to lack of physical health. Car ownership has the tendency of making one less focused on physical activities.

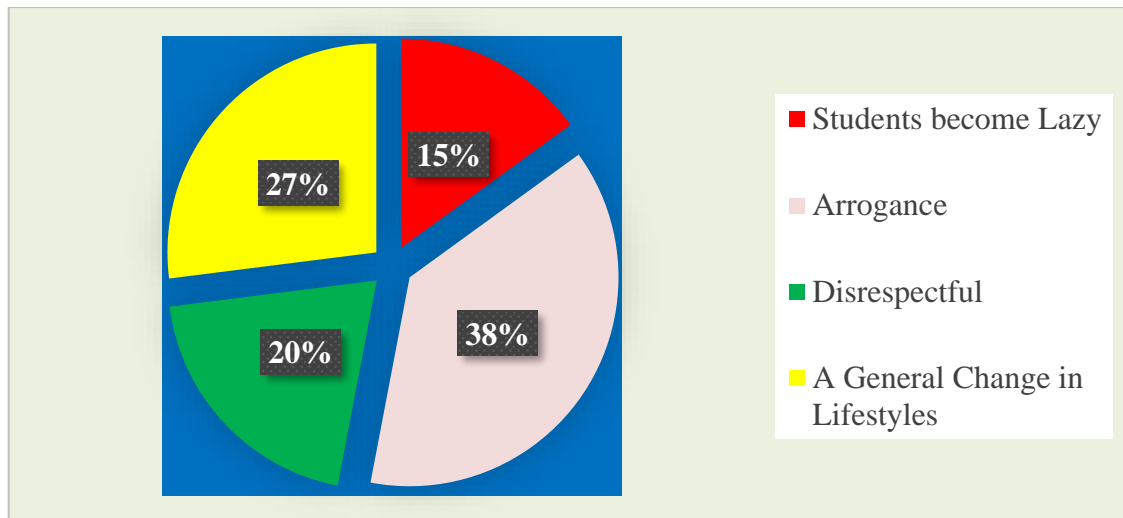


Figure 7. Other Effects Vehicle Ownership among students have on their daily decisions and activities

The respondents outlined a number of other effects vehicle ownership among students have on their daily decisions and activities and these were grouped under four (4) main factors. From Figure 7 it can be realized that, a total number of 38 respondents making up the majority and representing 38% stated that, students become “arrogant” after owning a vehicle; this was followed by a substantial number of 27 respondents representing 27% who also stated that, students exhibit a “general change in lifestyle” after car ownership. In addition, 20% of the respondents claimed students become “disrespectful” after vehicle ownership whereas, the remaining 15 respondents representing a minority of 15% stated that, students tend to be “lazy” after vehicle ownership. This confirms that, most of the students who own vehicles on the KNUST campus exhibit or develop mostly negative habits after vehicle ownership and this in the long run may have negative effects on academic performance which is the sole purpose of being on campus.

Assess Challenges faced by Students on KNUST Campus in Owning and Using Vehicles

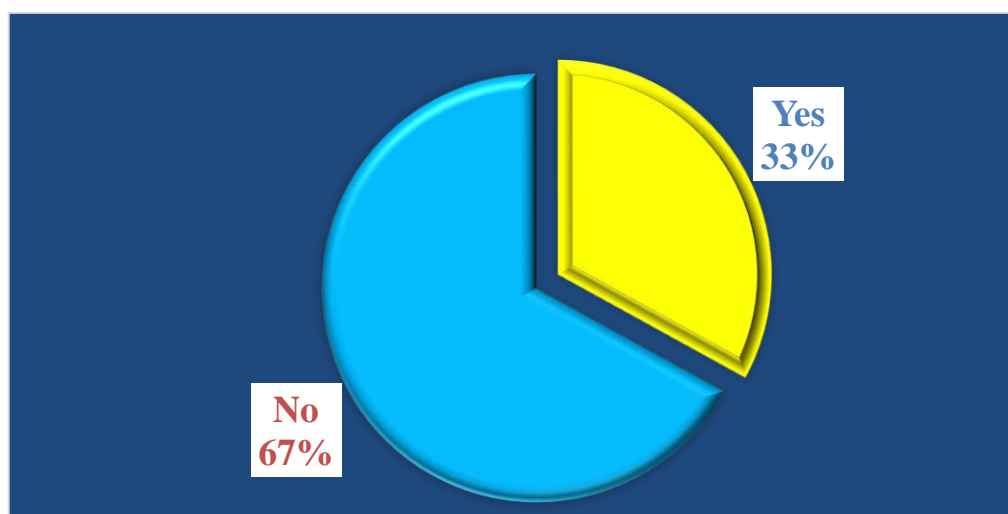


Figure 8. Do you own or use a vehicle on campus

Figure 8 shows the proportion of students who own vehicles on the KNUST campus as compared to those who do not own vehicles using the respondents of the study. It can be

realized that, a majority of 67 of the respondents representing 67% stated that they do not own or use vehicles on campus but, the remainder of 33 respondents representing 33% were students who owned or used vehicles on campus. This confirms that, the number of students who do not own or use vehicles on the KNUST campus far outnumber the students who own or use vehicles on campus.

In a related question; the respondents that owned or used vehicles on campus were asked to outline the challenges facing students on campus in owning and using vehicles and their responses are presented in Figure 9.

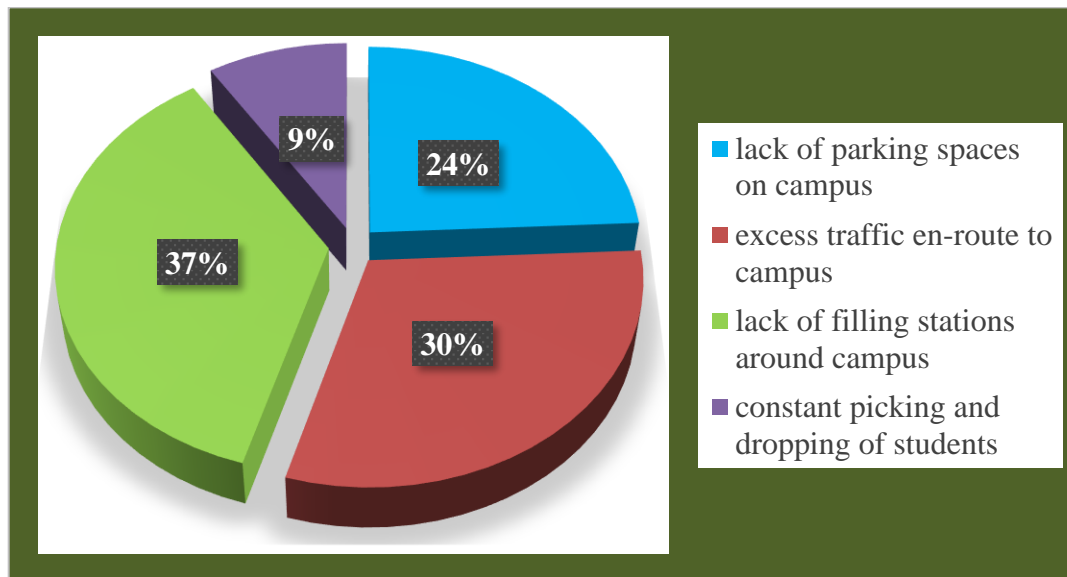


Figure 9. Challenges facing Students on Campus in Owning and Using Vehicles

From Figure 9 it can be realized that, a number of challenges have been outlined by the respondents (33) who responded in the affirmative to owning and using cars in Figure 4.8. It can be seen that, a majority of 12 respondents representing 37% stated that, the challenge facing them on campus is a lack of nearby filling stations in and around the campus and this forces students to drive far away to get fuel. This was closely followed by 10 respondents representing 30% and they stated their challenge as being excessive traffic en-route to campus but they did not outline the cause of this excess traffic. Furthermore, 8 respondents representing 24% stated the lack of parking spaces as a major challenge confronting students who own or use vehicles on campus whereas, a minority of 3 respondents representing 9% outlined the fact that, picking and dropping colleague students who do not own or use vehicles was a challenge as it made them feel uncomfortable. The results confirm that, the major challenges facing students who own or use vehicles on the KNUST campus are a lack of filling stations on and around campus, lack of student parking lots and excess traffic. It can therefore, be further concluded that, on the whole using or owning vehicles on campus does not serve any significant purpose as car owners or users are still confronted with issues that can negatively influence their personality and academic performance.

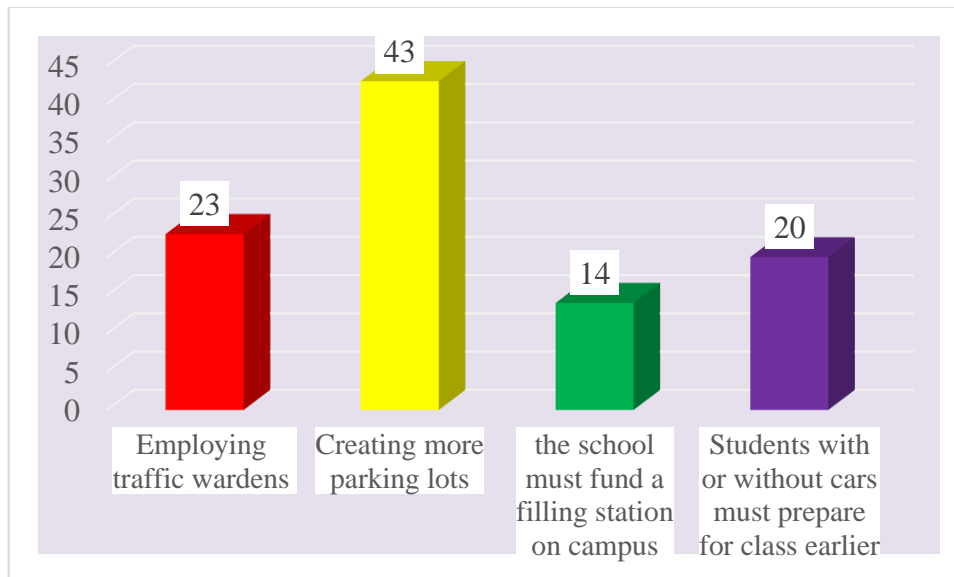


Figure 10. Measures that can Mitigate the Challenges faced by Students Vehicle Owners/Users

The respondents were asked to provide measures that can help mitigate the challenges faced by students who own or use vehicles on campus. From Figure 10 it can be realized that, a greater number of 43 respondents representing 43% suggested the school creates more parking lots to accommodate the vehicles of students. Another 23 respondents representing 23% suggested the school authorities employ the services of traffic wardens to direct traffic in a bid to ease the excessive traffic en-route to campus. Furthermore, 20 respondents representing 20% were of the view that, due to traffic; students with or without cars must prepare for class earlier to avoid lateness. Lastly, a minority of 14 respondents representing 14% suggested that, the school authorities must consider constructing a filling station in and around campus to avoid long drives for fuel. This indicates that, some solutions can be adopted to suppress the challenges faced by vehicle owners and users on the KNUST campus.

CONCLUSION

This study revealed that most students who own or use cars at KNUST come from wealthy families, with vehicle ownership often driven by necessity due to high transport costs and traffic issues. Car ownership is seen as a status symbol, but is not always related to academic needs, as many students use vehicles for personal purposes, which can be a distraction from their studies. Additionally, students from affluent backgrounds are more likely to own cars, while those from less privileged families face challenges due to the high costs of car ownership. The study also highlighted that owning a car positively impacts punctuality but may contribute to environmental and health issues, such as lack of physical activity and pollution from unserviced vehicles. Despite the benefits, car ownership poses challenges like parking shortages and traffic congestion, prompting the need for university management to create better infrastructure and policies. Future research could explore the psychosocial factors influencing vehicle ownership, its impact on academic performance and well-being, and the environmental and health consequences of increased vehicle use on campus.

REFERENCES

- Ayaragarnchanakul, E., & Creutzig, F. (2022). Bangkok's locked-in traffic jam: Price congestion or regulate parking? *Case Studies on Transport Policy*, 10(1). <https://doi.org/10.1016/j.cstp.2021.12.016>
- Basu, R., & Ferreira, J. (2021). Sustainable mobility in auto-dominated Metro Boston: Challenges and opportunities post-COVID-19. *Transport Policy*, 103. <https://doi.org/10.1016/j.tranpol.2021.01.006>
- Belgiawan, P. F., Schmöcker, J. D., & Fujii, S. (2016). Understanding car ownership motivations among Indonesian students. *International Journal of Sustainable Transportation*, 10(4). <https://doi.org/10.1080/15568318.2014.921846>
- Casadó, R. G., Golightly, D., Laing, K., Palacin, R., & Todd, L. (2020). Children, Young people and Mobility as a Service: Opportunities and barriers for future mobility. *Transportation Research Interdisciplinary Perspectives*, 4. <https://doi.org/10.1016/j.trip.2020.100107>
- Chu, M. Y., Law, T. H., Hamid, H., Law, S. H., & Lee, J. C. (2022). Examining the effects of urbanization and purchasing power on the relationship between motorcycle ownership and economic development: A panel data. *International Journal of Transportation Science and Technology*, 11(1). <https://doi.org/10.1016/j.ijtst.2020.12.004>
- Diao, M., Kong, H., & Zhao, J. (2021). Impacts of transportation network companies on urban mobility. *Nature Sustainability*, 4(6). <https://doi.org/10.1038/s41893-020-00678-z>
- Filippi, F. (2022). A Paradigm Shift for a Transition to Sustainable Urban Transport. *Sustainability (Switzerland)*, 14(5). <https://doi.org/10.3390/su14052853>
- Jones, S., Tefe, M., & Appiah-Opoku, S. (2013). Proposed framework for sustainability screening of urban transport projects in developing countries: A case study of Accra, Ghana. *Transportation Research Part A: Policy and Practice*, 49. <https://doi.org/10.1016/j.tra.2013.01.003>
- Kaplan, D. H. (2020). Growing Sustainable Transportation in an Autocentric Community: Current Trends and Applications. In *Urban and Regional Planning and Development: 20th Century Forms and 21st Century Transformations*. Springer. https://doi.org/10.1007/978-3-030-31776-8_32
- King, D. A., Smart, M. J., & Manville, M. (2022). The Poverty of the Carless: Toward Universal Auto Access. *Journal of Planning Education and Research*, 42(3). <https://doi.org/10.1177/0739456X18823252>
- Klein, N. J. (2024). Subsidizing Car Ownership for Low-Income Individuals and Households. *Journal of Planning Education and Research*, 44(1). <https://doi.org/10.1177/0739456X20950428>
- Li, S., Xing, J., Yang, L., & Zhang, F. (2020). Transportation and the environment in developing countries. *Annual Review of Resource Economics*, 12. <https://doi.org/10.1146/annurev-resource-103119-104510>
- Ma, J., Ye, M., Zheng, Y., & Zhu, Y. (2019). Consensus analysis of hybrid multiagent systems: A game-theoretic approach. *International Journal of Robust and Nonlinear Control*, 29(6). <https://doi.org/10.1002/rnc.4462>
- Marks, D. (2020). An urban political ecology of Bangkok's awful traffic congestion. *Journal of Political Ecology*, 27(1). <https://doi.org/10.2458/V27I1.23604>
- Mattioli, G., Roberts, C., Steinberger, J. K., & Brown, A. (2020). The political economy of car dependence: A systems of provision approach. *Energy Research and Social Science*, 66. <https://doi.org/10.1016/j.erss.2020.101486>
- Moody, J., Farr, E., Papagelis, M., & Keith, D. R. (2021). The value of car ownership and use in the United States. *Nature Sustainability*, 4(9). <https://doi.org/10.1038/s41893-021-00731-5>

- Muratori, M., Alexander, M., Arent, D., Bazilian, M., Dede, E. M., Farrell, J., Gearhart, C., Greene, D., Jenn, A., Keyser, M., Lipman, T., Narumanchi, S., Pesaran, A., Sioshansi, R., Suomalainen, E., Tal, G., Walkowicz, K., & Ward, J. (2021). The rise of electric vehicles-2020 status and future expectations. *Progress in Energy*, 3(2). <https://doi.org/10.1088/2516-1083/abe0ad>
- Narteh, B., Odoom, R., Braimah, M., & Buame, S. (2012). Key drivers of automobile brand choice in sub-Saharan Africa: The case of Ghana. *Journal of Product and Brand Management*, 21(7). <https://doi.org/10.1108/10610421211276268>
- Obeng-Odoom, F. (2010). Drive left, look right: The political economy of urban transport in Ghana. *International Journal of Urban Sustainable Development*, 1(1–2). <https://doi.org/10.1080/19463130903561475>
- Opoku, O. A., Yeboah, O., Gyamfi, E., & Afful, G. (2022). Rising Car Ownership and Traffic Congestion in the University of Cape Coast Campus. *International Journal of Research In Science & Engineering*, 24. <https://doi.org/10.55529/ijrise.24.10.21>
- Ortar, N., Vincent-Geslin, S., & Boudreau, J. A. (2020). The youth on the move: French and Canadian young people's relationship with the car. *Applied Mobilities*, 5(2). <https://doi.org/10.1080/23800127.2018.1468713>
- Panagariya, A. (2020). India: Accelerating Growth, Creating Well-paid Jobs for the Masses. *Indian Public Policy Review*, 1(1(Sep-Oct)). <https://doi.org/10.55763/ippr.2020.01.01.002>
- Pucher, J., Peng, Z. R., Mittal, N., Zhu, Y., & Korattyswaroopam, N. (2007). Urban transport trends and policies in China and India: Impacts of rapid economic growth. In *Transport Reviews* (Vol. 27, Issue 4). <https://doi.org/10.1080/01441640601089988>
- Salon, D., & Aligula, E. M. (2012). Urban travel in Nairobi, Kenya: Analysis, insights, and opportunities. *Journal of Transport Geography*, 22. <https://doi.org/10.1016/j.jtrangeo.2011.11.019>
- Singh, V., Singh, V., & Vaibhav, S. (2021). Analysis of electric vehicle trends, development and policies in India. *Case Studies on Transport Policy*, 9(3). <https://doi.org/10.1016/j.cstp.2021.06.006>
- Zhu, C., Zhu, Y., Lu, R., He, R., & Xia, Z. (2012). Perceptions and aspirations for car ownership among Chinese students attending two universities in the Yangtze Delta, China. *Journal of Transport Geography*, 24. <https://doi.org/10.1016/j.jtrangeo.2012.03.011>

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