RELATIONSHIP BETWEEN DEMOGRAPHICS, VEHICLE USAGE, AND DRIVER'S LICENSE STATUS IN LAOS

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1. Introduction

Road crashes are still a serious issue in Laos. In 2019, the number of fatalities was 1,134 and injuries was 10,644, and it is likely to increase in the future based on growing rate of vehicle registration - particularly for light vehicles such as cars, pickups, jeeps, mini-vans, and motorbikes. Conversely, the proportion of vehicle operators holding driver's license is remarkably low. Data from traffic police revealed that the percentage of road crashes caused by unlicensed driving has increased markedly from 49% in 2019 to 65% in 2021. Illegal driving is one important factor that causes road crash due to lack of knowledge about road safety, which leads to various traffic offenses such as speeding, violation of traffic signs, and drunk driving. Drivers of all type of vehicles, including private, goods and passengers transport vehicles, are required to hold a proper driver's license in accordance with law of traffic management to ensure that drivers have competency of driving. It is especially important that those who drive every day should strictly adhere to traffic rules and to avoid any actions that lead to collision, injury and mortality. However, the cost for driving test may be pricey and complicated for some people in low-income countries because most driving schools in large cities were designed to apply technology to supporting both theoretical and practical lessons, so it may be relatively tough for rural people to get a license.

This paper investigated the relationship between possession of driver's license and demographics characteristics for licensed and non-licensed drivers in Vientiane capital, a large city, and Luang Prabang province, a rural area. This research will be useful for organization concerned to determine the target goal for road accident issue in future.

2. Methodology

Sample size was 585 road users selected by convenience sampling five local markets and four shopping malls in sample area (489 from Vientiane capital and 96 in Luang Prabang province). Data collection was carried out in person using a questionnaire designed to collect data on demographic characteristics, license status, daily travel mode and behavior, driving experience, perception of road safety, and road safety awareness.

3. Results and discussion

3.1. Test of association with license status

It was found that 240 of respondents were male, 338 female, and 7 other or no response. Among road users, 208 respondents held a driver's license and 377 had no license. Table 1 shows the result of the chi-square test for association between license status and various demographics and license status and usage of motor vehicles. It was found that there was a significant association between license status and all demographic attributes (gender, education level, age group, occupation, position in household, income, and choosing of travel mode) at p-value less than 0.05 for all parameters.

Table 1. Results of chi-square test between license status and demographic characteristics and vehicle use

Chi square test				
Association between license status and social factor and travel mode	Gender	Education	Age group	Occupation
Chi square value	29,489	40,99	97,361	88,92
P-value	.000	.000	.000	.000
Association between license status and social factor and travel mode	Position in household	Income	Utilizing motor vehicles	
Chi square value	75,684	50,491	44,032	
P-value	.000	.000	.000	
P-value	p<0.05	Significant	p>0.05	Non-significant

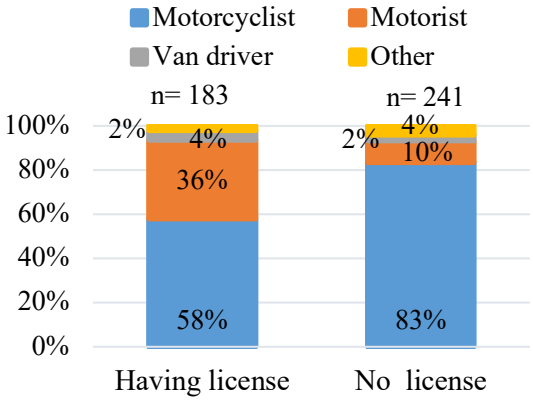

Figure 1. Association of travel mode and license holding

3.2. Investigating travel mode choice and license status

Travel is necessary to meet the daily needs of commuters, such as going to work, school, or other destinations, but the travel mode choice of individuals may be different depending on satisfaction, convenience, or the state of society and or the economy. Figure 1 shows the percentage of mode choice among vehicle drivers (n=424) by their licensing status. It was found that motorcycle usage is the most popular method, with over 300 respondents in total using motorbike every

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day or almost every day, followed by 89 people using automobile, 14 people driving van, and 14 people driving by other mode (taxi, bus, and truck). It was also revealed that the proportion of unlicensed drivers is very high, with 241 (56.8%) drivers out of 424 total not having a driver's license despite driving every day or almost every day. Among unlicensed drivers, 83% are motorcyclists, 10% are motorists, 4% are drivers by other travel modes, and 2% are van drivers. The chi-square test has significant association between driving license status and travel mode choice as ($p<0.05$).

3.3. Investigating select demographic factors and license status

The relationship between the various demographic characteristics and license status is examined in more detail in Figures 2 through 5 for education, age group, occupation, and income, which all had a significant association with license status ($p<0.05$). It was found that 40% of licensed respondents who have graduate degree to 33% of unlicensed. On the contrary, only 20% of licensed road users had only upper secondary school education compared to 36% for unlicensed respondents. Younger respondents (15-19 and 20-24) made up a larger percentage of unlicensed respondents (24% and 41%, respectively). They represent a large group of road users that operate vehicles without a license, and tend to utilize motorcycle every day and almost every day. Slightly older age groups (25-29 and 30-34), only represent around 15% and 6% of unlicensed and licensed respondents, respectively. The ratio of unlicensed road users who are students (42%) and laborers (9%) are higher than their ratios among licensed road users (13% and 2%, respectively). Government-related occupations, like official, soldier, and police, make up a very small proportion of unlicensed road users (1%). Finally, respondents who claimed their family's monthly income was 1.5 million kip or less made up just 14% of licensed respondents but 28% of unlicensed respondents. On the contrary, respondents with household income over 10 million kip were 13% of the licensed respondents but just 3% of the unlicensed respondents.

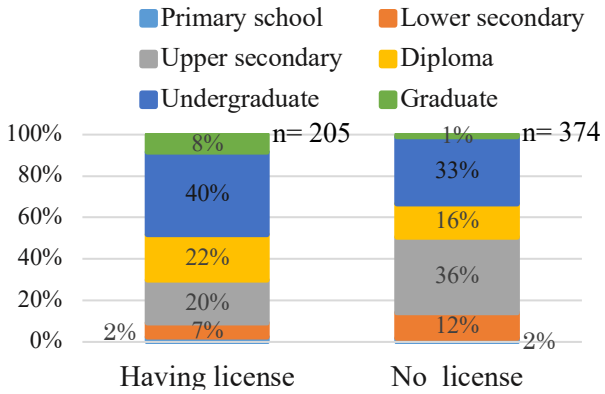

Figure 2. Association of education and license status

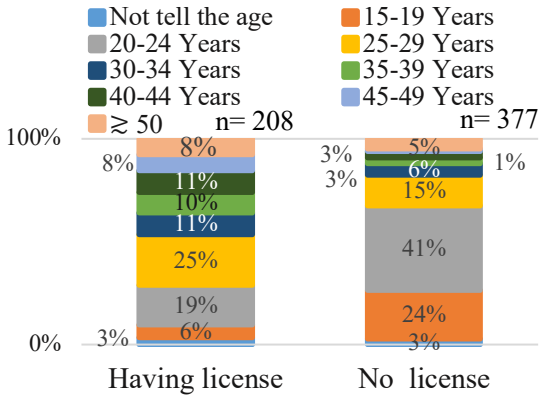

Figure 3. Association of age group and license status

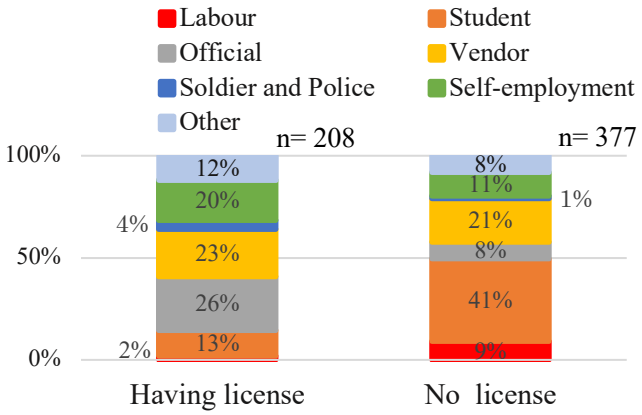

Figure 4. Association of occupation and license status

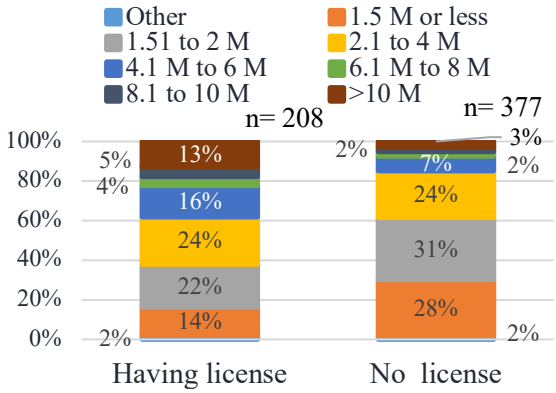

Figure 5. Association of income and license status

4. Conclusion

Holding a driver's license is very important to ensure safe driving and safe road infrastructure, However, in this study it was found that the proportion of unlicensed drivers was very high - particularly among respondents who using motorbike every day or almost every day. The chi-square test for associated indicated that license status has a significant association with various social-economic factors. These results will be useful for further study of the licensing issue in Laos to find the important factors promoting the adoption of driver's licenses.

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