



RESEARCH ARTICLE

Vulnerable Workers on the Move: A Study of Health, Safety, and Working Conditions among Bangkok's Motorcycle Taxi Drivers

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ABSTRACT

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In 2023, Thailand transitioned into a full-fledged aging society, with the population aged 60 and above reaching 13,193,217. There has been a continuous increase in the informal and elderly workforce, resulting in 4,434,723 informal laborers. This research paper aims to examine the working conditions, health, and safety of informal workers who serve as motorcycle taxi drivers in Bangkok. A quantitative research approach was employed, utilizing a questionnaire survey as the data collection tool, which was administered to 400 motorcycle taxi drivers across 50 sub districts in Bangkok. The findings revealed that the majority of elderly informal workers in Bangkok, particularly motorcycle taxi drivers, are male (97.50 percent). The predominant age group was between 60 and 65 years, comprising 85.50 percent of the participants. Approximately two-thirds had only completed primary education and were married. Half of the respondents worked more than 25 days per month. Regarding work experience, 36.40 percent had 10-20 years of experience. In terms of income, 29.40 percent earned between 301 and 400 baht per day. Additionally, 54.20 percent of the participants reported having a pre-existing health condition, 23.10 percent had experienced accidents (collisions) in the past 12 months, and 6.90 percent had sustained injuries from these accidents.

INTRODUCTION

According to the Department of Provincial Administration (2023), the Ministry of Interior, Thailand completely transformed into an aging society in 2023, in which the elder adult population who are aged over 60 years old accounted for 19.97 percent (about 13.19 million people) of the entire Thai population (about 66.05 million people). Based on the observation of the National Statistical Office of Thailand (2022), there were about 5.11 million older workers, 86.80 percent of them (4.43 million people approximately) were informal workers, and the majority held a primary degree or lower and were farmers, general employees, or service providers – which these occupations considered financial instability and vulnerability resulting one-third of elder workers had the personal income under the poverty line. Furthermore, in Thailand, the study by Chulalongkorn University, College of Population Studies, incorporated with the United Nations Population Fund (UNFPA) (2021) attempted to investigate the effects of the COVID-19 pandemic across all income clusters of 1,230 older workers in July 2020. Their findings unveiled that 81.0 percent of older workers faced substantial obstacles from COVID-19, and the workers in urban areas were more affected by the pandemic than in rural areas (UNFPA, 2021). There was a decline in working income from 40.0 percent in the normal period to 22.0 percent during the epidemic (UNFPA, 2021).

Considering the older people who are currently working in Bangkok, Thailand, the service providers, specifically motorcycle taxi drivers, play a significant role in the city due to the relatively low startup costs associated with this type of service. The motorcycle taxi drivers were classified as informal economy workers which were categorized as informal service providers following the determination of the International Labour Organization (2015). In Thailand, as per the report by the Department of Land Transport (2023), there were 133,298 registered public motorcycles countrywide in accumulation from 2019 to 2023. Motorcycle taxis were commonly known as “Win” in the Thai local

language (Phun et al., 2019; Sereerat and Sirijintana, 2020). This occupation typically involves working more than eight hours a day and carries a high risk of traffic accidents and other occupational hazards, such as heat stroke and lung diseases (Arphorn et al., 2018; Tieanklin et al., 2024). Like other workers in the informal economy, motorcycle taxi drivers face job insecurity (Sopranzetti, 2022), competition for occupational space (Phun et al., 2019), limited regulatory protection (Arphorn et al., 2018; Theerakosonphong and Amornsiriphong, 2022), unsafe working conditions (Arphorn et al., 2018), and challenges posed by government officials, influential people, and peers (Phun et al., 2019; Sopranzetti, 2022). A survey conducted by the Center for Economic and Business Forecasting at the University of the Thai Chamber of Commerce revealed that motorcycle taxi drivers worked an average of nine hours per day and completed an average of forty-one routes. The cost of this mode of transportation was relatively high due to the expensive oil prices, motorcycle installment payments, and the rental fees for the *Win* vest in specific areas. The average daily income was 975 baht, which was typically used to support a household of approximately four family members. Nearly all participants had not registered for state welfare cards, and 70 percent were in debt, with the majority owing an average of 190,000 baht in informal loans. In the event of a severe accident leading to an inability to work, 68.78 percent of respondents faced financial difficulties, with 40 percent experiencing the most significant impact (The Center for Economic and Business Forecasting, 2019).

In alignment with Sustainable Development Goal 3 (SDG 3), which aims to ensure healthy lives and promote well-being for all at all ages (United Nations, 2023), workers over the age of 60 represent the most vulnerable cohort in the labor market (National Statistical Office of Thailand, 2022). Especially the current job in motorcycle taxis, they directly confronted air pollution for long hours, high risk for traffic accidents, and financial vulnerability status (Arphorn et al., 2018; Tieanklin et al., 2024). These conditions align with several targets of SDG 3, including Target 3.6, which seeks to reduce the number of global deaths and injuries from road traffic accidents; Target 3.9, which aims to significantly reduce deaths and illnesses caused by hazardous chemicals and pollution of air, water, and soil; and Target 3.c, which focuses on substantially increasing health financing and enhancing the recruitment, development, training, and retention of the health workforce in developing countries (United Nations, 2023). Therefore, this research paper aims to (i) examine the working conditions of a vulnerable group, specifically motorcycle taxi drivers in Bangkok, (ii) assess the health and safety conditions of these informal workers, (iii) evaluate the alignment with SDG targets through current practices, and (iv) provide recommendations to stakeholders concerning regulatory, practical, and policy development.

LITERATURE REVIEW

The Condition and Study of Motorcycle Taxi Drivers in Thailand

Arphorn et al. (2018) examined the impact of air pollution, specifically PM10, on lung function among two study groups in Bangkok: a subject group and a control group. The subject group comprised 1,283 motorcycle taxi drivers, while the control group included 600 enclosed taxi drivers. The findings indicated that the subject group exhibited a significantly higher association with occupational health risks, particularly respiratory and cardiovascular events, compared to the control group.

Phun et al. (2019) confirmed that paratransit services, specifically motorcycle taxis in Bangkok, have been shaped by market forces to concentrate near mass transit stations and economic hubs. Their analysis, using negative binomial regression, demonstrated a significant increase in motorcycle taxi density as proximity to these areas improved. These findings highlighted the overlooked role of paratransit as a vital connective mode in urban transit systems. The study also emphasized the need for policy interventions to better integrate paratransit with formal mass transit, especially in the context of the growing influence of ride-hailing services in the paratransit sector.

Sereerat and Sirijintana (2020) utilized the 'eyes on the street' concept to explore the relationship between motorcycle taxis and crime prevention in Bangkok's Chatuchak District. Data were collected and analyzed from 180 *Win* motorcycle taxi stands. In 2016, the most prevalent crimes were burglary (109 cases) and assault (29 cases). The study found that crime rates in the vicinity of these *Win* stands were relatively low, particularly on sidewalks, indicating a significant role in crime prevention.

Sopranzetti (2022) reconstructed the evolving concept of “informality” and “people with influence” in Bangkok over the past 35 years, with a focus on the motorcycle taxi business. Drawing on over a decade of qualitative and quantitative research involving motorcycle taxi drivers, state officials, city planners, and users, the study expands contemporary theories of informality by emphasizing its relational, contingent, and contested nature. The research proposed a dual conceptualization of informality: first, as a dynamic relationship between codified practices, governmental systems, and the people who navigate these structures; and second, as a tactical label used by various actors to understand and negotiate their environment. This duality underscored the central efficacy of informality, authority, and influence person, as a hidden powerful concept for thought, governance, and resistance.

Chalermpong et al. (2023) highlighted the nuanced and adaptive role of motorcycle taxis in 180 subdistricts of Bangkok's transportation ecosystem, challenging the simplistic binary view of them as either complementary to or substitutes for public transit. By examining smaller, context-specific areas, they revealed that the relationship between motorcycle taxis and public transit varies significantly based on locational and spatial characteristics. In outer suburban subdistricts, motorcycle taxis strongly complement transit services, particularly near transit stations, while in central business districts, their complementarity is more evident in relation to bus stops rather than rail transit. These findings underscored the importance of developing targeted policies and regulations that account for the diverse roles of motorcycle taxis across different urban contexts.

The Condition and Study of Motorcycle Taxi Drivers in an International Context

Given the significant hazards associated with urban transport occupations, including environmental, societal, and health challenges, Sanchez et al. (2019) sought to evaluate the work capacity and quality of life among 232 motorcycle taxi drivers and 60 male taxi drivers in Brazil's urban cities. They utilized the World Health Organization Quality of Life-BREF (WHOQOL-BREF) measurement tool, along with sociodemographic and occupational questionnaires, and analyzed the data using binary logistic regression. The results revealed that motorcycle taxi drivers are more prone to traffic accidents compared to four-wheel taxi drivers. This increased risk is attributed to their younger age, lower levels of experience and emotional maturity, longer working hours that exceed labor limits, and poorer scores in psychological and environmental well-being.

Teixeira et al. (2019) evaluated the link between psychosocial risk factors, sociodemographic and occupational characteristics, and physical activity levels among 750 male motorcycle taxi drivers in Jequié, Bahia, Brazil. The findings reveal that 59.6 percent of drivers were insufficiently active. The analysis showed that physical inactivity is associated with high-strain jobs, over five years of experience, night shifts, and being aged 40 or older. In the adjusted model, high-strain jobs remained linked to insufficient physical activity, while having five or more years of experience increased the likelihood by 51 percent, and working predominantly night shifts increased it by 26 percent. Age was found to be an effect modifier, with the association between high-strain work and physical inactivity being significant only among younger drivers (21–39 years old). These results highlighted the impact of unfavorable working conditions, such as long employment duration, night work, and high psychological demand with low control, on the physical activity levels of motorcycle taxi drivers.

Nguyen-Phuoc et al. (2019) highlighted the significant role of motorcycle taxis in developing countries, especially in areas lacking conventional public transport, and the growing popularity of app-based motorcycle taxi services in three big economic cities in Vietnam, namely, Da Nang, Hanoi, and Ho Chi Minh. The analysis, based on 602 survey responses, identified key risk factors for crashes, including being a non-student, having a low education level, traveling long daily distances, smoking regularly, and using a mobile phone while driving. Despite existing regulations, the high incidence of crashes suggests a need for targeted interventions, such as enhanced road safety education for non-student riders and the implementation of daily travel distance limits to reduce crash risks.

Truong et al. (2021) investigated the health issues faced by motorcycle taxi drivers in Hanoi, Vietnam, with a focus on emerging types such as ride-hailing and hybrid drivers. Survey data from 549 drivers revealed that 22.59 percent reported fatigue and 22.04 percent showed low back pain, both of these were more prevalent than other health issues. Notably, less than half of the drivers (44.44 percent) illustrated having no health issues. The study found that ride-hailing and hybrid drivers were less likely to report upper back pain, while factors such as being overweight, alcohol consumption, and

longer riding durations were linked to specific health issues. Additionally, a strong association between back pain was observed, particularly low back pain, and involvement in crashes. These findings suggest that back pain and fatigue are significant health concerns for motorcycle taxi drivers, and highlight the need for authorities to consider mandatory medical checks for these workers to address the risks associated with their occupation.

Cidreira et al. (2023) explored the relationship between sociodemographic and occupational factors and perceived stress levels among motorcycle taxi drivers in Bahia, Brazil. The cross-sectional analysis of 800 drivers revealed that 46.8% experienced high levels of stress. Multivariate analysis identified significant associations between high-stress levels and factors such as low control over work, limited social support at work, working more than eight hours a day, and earning a monthly income of two minimum wages or less. These findings underscored the impact of long working hours, occupational stressors, and low income on the mental well-being of motorcycle taxi drivers. The study highlighted the need for public policies and interventions aimed at reducing occupational stress in this vulnerable workforce.

METHODOLOGY

The current research paper applied a quantitative research approach to the study, the below section demonstrated the population, sample selection, sample size calculation, and statistical tools and analysis.

Population and Sample

The population (N) of the study was 83,389 public motorcycle taxi drivers in Bangkok, Thailand. The target sample was characterized by:

Motorcycle taxi drivers who are over 60 years old, currently working in Bangkok

They must be able to communicate, read, and write with normality and consent to participating in the present research study

They must have at least five years of motorcycle taxi driving experience and work at least five days a week.

Purposive random sampling was conducted by focusing on informal service providers, the motorcycle taxi drivers, who are over 60 years old in 50 subdistricts in Bangkok. The sample size calculation formula followed equation 1 (Cochran, 1977).

$$n = \frac{P(1-P)Z^2}{e^2} \quad)1($$

When; n represents the sample size

P represents the proportion of the randomized population of 50 percent or 0.5

Z represents the 95 percent confidential interval (Z = 1.96)

e represents the 5 percent marginal error (e = 0.05)

Based on the above calculation, therefore, the appropriate sample size of the study was 384.16. To improve the validity of the data, the number of samples was increased to 400 (n = 400).

Research tools

This quantitative research applied the author's developed questionnaire inclusive of 60 questions as follows;

The first section was 12 personal information

The second section included 12 questions about the working conditions of older motorcycle taxi drivers, where the participants were required to range the score from 1 (strongest disagree) to 5 (strongest agree) based on the Likert scale from Joshi et al. (2015)

The third section included 15 questions about occupational health and safety, rating the score from 1 (strongest disagree) to 5 (strongest agree) based on the Likert scale from Joshi et al. (2015)

Prior to the actual data collection process, a pilot test was conducted to validate the quality of the questionnaire. Data were collected from 30 trial participants, and the results indicated a validity score exceeding 0.8, demonstrating the instrument's reliability and usability.

Statistical analysis

Descriptive statistics, frequency, percentage, t-test, f-test, and multiple regression analysis were applied to this study.

RESULTS

According to data collection, there were total 400 informal service providers, here in motorcycle taxi driver, who are age over 60 years old in 50 subdistricts in Bangkok. The research outcomes elucidated as follows:

Table 1. Background information of participants

Variables	Frequency	Percentage
Gender:		
Male	390	95.50
Female	10	2.50
Age:		
60-65 years old	342	85.50
Higher than 65 years old	58	14.50
Educational level:		
Primary school	265	67.10
Secondary school	67	17.00
High school	63	15.90
Marital status:		
Married	252	63.60
Divorced/Widowed	83	21.00
Single	61	15.40
Motorcycle taxi experience:		
About 1-10 years	139	35.60
About 10-20 years	142	36.40
More than 20 years	109	27.90
Types of public vehicle registration		
Motorcycle registered as a public vehicle	276	69.90
Personal motorcycle	119	30.10
Number of working days		
Less than 20 days a month	77	23.40
21-25 days a month	87	26.40
More than 25 days a month	165	50.00
Average daily income		
Less than 200 baht a day	19	4.90
Between 200-300 baht a day	109	27.90
Between 301-400 baht a day	115	29.40
Between 401-500 baht a day	86	22.00
Higher than 500 baht a day	62	15.90
The relation between income and expenses		
Sufficient, but no savings	176	44.90
Insufficient, leading to debt	174	44.40
Sufficient, with savings"	42	10.70
Chronic disease		
Yes	213	54.20
No	180	45.80
Accidents (collisions) in the past 12 months		
Yes	309	76.90
No	91	23.10
Accident injuries in the past 12 months		
Yes	363	93.10
No	27	6.90

As exhibited in Table 1, the majority of older motorcycle taxi drivers in Bangkok were male, comprising 92.50 percent of the sample. The largest age group was between 60 and 65 years old, representing 85.50 percent of the participants. Approximately two-thirds had completed only primary education and were married. Half of the respondents worked more than 25 days per month. Regarding work experience, 35.60 percent had been in the occupation for 1-10 years, while 36.40 percent had 10-20 years of experience. In terms of income, 29.40 percent earned between 301-400 baht per day. This low income resulted in 44.90 percent of participants having just enough to cover expenses without savings, while 44.40 percent reported insufficient income, leading to debt. Additionally, 54.20 percent of the participants had a pre-existing condition, 23.10 percent had experienced accidents (collisions) in the past 12 months, and 6.90 percent had suffered injuries from these accidents.

Table 2. The average of the measurement items of working conditions, health, and safety

No.	Working Conditions	Mean	Health and Safety	Mean
1	Public motorcycle taxi drivers are an independent job because you can freely choose to do or break.	4.88 (strongly agree)	You carefully ride the motorcycle taxi and are concerned about safety first.	4.96 (strongly agree)
2	Riding a motorcycle taxi has high expenses such as gas and motorcycle and win vest rental fees, causing insufficient income.	4.50 (strongly agree)	You always wear a helmet when riding.	4.88 (strongly agree)
3	To earn a sufficient income, you need to ride for long hours a day.	4.27 (strongly agree)	You always ensure the good condition of a motorcycle before riding such as breaks, turn signals, side mirrors, and so on.	4.86 (strongly agree)
4	Motorcycle taxi drivers are your beloved job, and you prefer to continue.	4.26 (strongly agree)	You respect traffic laws and drive at the speed limit prescribed by law.	4.83 (strongly agree)
5	The location of your win station is a safe environment such as clean air, a chair, a roof, and light.	3.87 (agree)	You always wear a long-sleeved shirt to protect yourself from skin disease caused by air pollution, UV, and dust.	4.77 (strongly agree)
6	Riding a public motorcycle allows you to have a sufficient rest period.	3.50 (agree)	You always wear a face mask to protect yourself from air pollution.	4.62 (strongly agree)
7	The higher and older age poses no obstacle for you.	3.46 (agree)	You have a good friendship with your friends, relatives, or neighbors.	3.69 (agree)
8	You believe that a motorcycle taxi driver is a stable job.	3.34 (moderate)	You are happy and satisfied with your life.	3.68 (agree)
9	You have enough time for yourself and your family.	3.18 (moderate)	You always exercise and have enough sleeping hours for good health.	3.54 (agree)
10	The income from motorcycle taxi drivers is sufficient for self-care and family care.	2.52 (disagree)	You have regular annual health check-ups.	3.31 (moderate)
11	You frequently face certain traffic accidents or injuries.	1.64 (strongly disagree)	You always wear sunglasses to protect your eyes from UV and dust.	2.57 (disagree)
12	The income from motorcycle taxi drivers is sufficient for savings.	1.50 (strongly disagree)	You always provide a helmet for your customers.	2.45 (disagree)
13			Working conditions affect your chronic disease.	2.15 (disagree)
14			You are stressed from work.	2.05 (disagree)
15			You have undergone training on safety, accident prevention, and	1.78 (strongly disagree)

		relevant laws provided by government or private agencies.	
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As illustrated in Table 2, informal service providers in Bangkok, specifically motorcycle taxi drivers, exhibited a high degree of job independence, as reflected in the highest average score (4.88) for the ability to freely choose their work schedule within the working condition factors. However, their perception of income sufficiency for savings was notably low, with the lowest average score (1.50) in the same category. Regarding health and safety factors, the highest average score (4.96) indicated that they prioritize careful driving and safety. Conversely, the lowest average score (1.78) was related to the limited training they had received on safety, accident prevention, and relevant laws from government or private agencies.

Table 3. Multiple regression analysis of working conditions

	Factor affecting the working conditions	Unstandardized Coefficients		Standardized Coefficients	t value	Sig.
		B	SE	B		
	Constant	2.482	0.570		4.356	0.000*
1	Daily income	0.001	0.000	0.242	3.564	0.000*
2	Sufficiency of income	0.174	0.037	0.289	4.710	0.000*
3	Accident	-0.170	0.060	-0.189	-2.836	0.005*

*p value < 0.01

R = 0.490, R² = 0.240, Adjusted R Square = 0.165, Std. Error of the Estimate = 0.363

Y = Working conditions

Y = 2.482 + 0.001_{Income_Days_Ratio} + 0.174_{Suffi_Income} - 0.170_{Accident}

The finding from Table 3 uncovered that the factors affecting the working conditions of informal workers who are elderly motorcycle taxi drivers in Bangkok include daily income, sufficiency of income, and accidents. The equation (Y) can be used to predict the working conditions of the informal workers in the elderly group who ride public motorcycles in Bangkok at 24.0 percent.

Table 4. Multiple regression analysis of health and safety

	Factor affecting health and safety	Unstandardized Coefficients		Standardized Coefficients	t value	Sig.
		B	SE	B		
	Constant	3.110	0.470		6.621	0.000*
1	Working experience	-0.008	0.002	-0.239	-3.717	0.000*
2	Types of public vehicle registration	0.093	0.045	0.125	2.041	0.042**
3	Number of working days per month	-0.011	0.005	-0.143	-2.278	0.024**
4	Application usage to increase customers	0.471	0.144	0.190	3.285	0.001*
5	Chronic disease	0.228	0.041	0.340	5.547	0.000*
6	Accident injuries	0.209	0.089	0.147	2.333	0.020**

*p value < 0.01 and **p < 0.05

R = 0.523, R² = 0.274, Adjusted R Square = 0.202, Std. Error of the Estimate = 0.300

Y = Health and safety

Y = 3.110 - 0.008_{Exp} + 0.093_{Type_Sign} - 0.011_{Working_Days} + 0.471_{Application} + 0.228_{ChronicDisease} + 0.209_{Injured}

The research outcome from Table 4 unveiled that the factors affecting the health and safety of informal workers who are elderly motorcycle taxi drivers in Bangkok include working experience, types of public vehicle registration, number of working days per month, application usage to increase customers, chronic disease, and accident injuries. The equation (Y) can be used to predict the health and safety of the informal workers in the elderly group who ride public motorcycles in Bangkok at 27.4 percent.

DISCUSSION

Working Conditions of Elderly Motorcycle Taxi Drivers in Bangkok

The current findings reveal that elderly informal workers in Bangkok, specifically motorcycle taxi drivers, are predominantly male, have 10-20 years of experience, work more than 25 days a month, and earn between 301-400 baht per day. However, one-third of these elderly workers earn below the Thai minimum wage of 300 baht per day. Informal laborers represent a vulnerable group due to several factors: (i) they have low and unstable incomes; (ii) they often lack comprehensive welfare coverage; and (iii) they face issues with low savings and debt (Paitoonpong and Srichan, 2022). These findings align with Beigi et al. (2022), who observed that informal workers, specifically public taxi drivers in Turkey, also struggle with insufficient income amid a challenging economic environment characterized by a high cost of living, fluctuating income, financial liquidity issues, and daily concerns about meeting expenses.

The present study identified daily income, income sufficiency, and accidents as key factors influencing the working conditions of elderly motorcycle taxi drivers in Bangkok. These findings are consistent with Teixeira et al. (2019), who reported that 51 percent of public motorcycle taxi drivers over the age of 40 exhibited a lower work capacity, it can be increased by 31 percent compared to younger drivers. Moreover, 61 percent of participants over the age of 50 showed a significant decline in work capacity, indicating that younger drivers have a higher work capacity than their older counterparts. The working conditions of motorcycle taxi drivers are directly associated to various factors such as air pollution and extended working hours, both of which negatively impact their quality of life.

The sufficient income positively influenced working conditions, which had a minimal effect. While daily income also exerted a positive influence, its effect was notably low in magnitude. Despite the modest impact of income on overall working conditions, it played a significant role in ensuring the sufficiency of daily expenses.

Health and Safety of Elderly Motorcycle Taxi Drivers in Bangkok

The driving behavior of elderly motorcycle taxi drivers in Bangkok exhibited high compliance with laws and regulations, achieving the highest average scores within the health and safety category. In contrast, Wu and Loo (2016) found that in China, the majority of motorcycle drivers lacked driving licenses, did not wear helmets, and were more likely to commit road safety violations compared to the average driver on certain occasions.

In essence of health, elderly motorcycle taxi drivers in Bangkok commonly suffer from non-communicable chronic diseases such as high blood pressure, diabetes, and heart disease. The study group also reported experiencing physical pain, attributed to long hours of working and sitting in the same position. These findings align with quality-of-life assessments conducted on public transportation drivers in Brazil by Félix et al. (2016) and from Chile by Peters et al. (2021), which revealed that public transportation drivers are prone to non-communicable diseases (NCDs) and work-related pain syndromes.

The findings identified key factors influencing the health and safety of elderly motorcycle taxi drivers in Bangkok, including working experience, type of public vehicle registration, number of working days per month, use of customer-acquisition applications, chronic diseases, and accident injuries. Notably, the use of applications to increase customers had the strongest impact on health and safety. This aligns with Truong et al. (2021), who found that 44.44 percent of drivers using e-hailing applications were less likely to experience upper back pain. While working experience and the number of working days had a minimal negative effect on health and safety, non-communicable chronic diseases and work-related pain syndromes had a positive influence, suggesting these factors heightened health and safety awareness among elderly drivers. Similarly, Cheunban et al. (2013) observed that older participants, particularly those over 56, were more likely to adopt behaviors that reduce the risk of traffic accidents compared to younger drivers aged 25 or less. This implies that chronic diseases and work-related pain may prompt elderly drivers to exercise greater caution. However, a report by Segal et al. (2022) from the Health Guide Organization highlighted that elderly drivers are more prone to receiving traffic tickets and being involved in accidents due to factors such as diminished vision, impaired hearing, slower motor responses, and deteriorating health conditions.

Additionally, Truong et al. (2021) noted a correlation between back pain and the likelihood of collision accidents.

SUGGESTIONS

Government agencies should implement proactive measures to protect informal workers, particularly elderly motorcycle taxi drivers in Bangkok. These measures should include controlling fuel prices, providing annual training on traffic laws, and offering assistance and relief when elderly drivers become ill or injured due to work. Additionally, the government should support the organization of informal workers, including motorcycle taxi drivers, by providing free annual health check-ups and ensuring their access to low-interest loans or credit from financial institutions. This financial support could be used for daily expenses, vehicle repairs or purchases, and other investments. Moreover, it is crucial to enhance the technological skills of elderly motorcycle taxi drivers to help them increase their income.

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