

LIFE ON TWO WHEELS: ASSESSING THE COPING MECHANISMS OF MOTORCYCLE TAXI DRIVERS WITHIN NOVALICHES' UNDERGROUND ECONOMY

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Abstract

This quantitative study examined how motorcycle taxi drivers operating within Novaliches' informal transport sector cope with financial, physical, and legal challenges. Utilizing a descriptive–correlational–comparative research design, data were collected from 400 purposively selected drivers through a researcher-developed and validated questionnaire, with reliability confirmed using Cronbach's Alpha. Results showed that most respondents were male, aged 35–39, primarily affiliated with JoyRide, had 0–4 years of industry experience, and belonged to lower socio-economic groups. Descriptive analyses revealed a moderate use of coping strategies, with financial strain strongly influencing their decision-making, moderate perceptions of gender-related advantages, and a fair level of legal awareness regarding proposed regulations and tax obligations. Inferential tests—including Chi-Square Test of Homogeneity, ANOVA, and Scheffé's Test—identified significant relationships and group differences between demographic characteristics and coping mechanisms. Key issues faced by drivers involved persistent financial difficulties, health-related stress, and inadequate legal protections. While the study recommends supporting the enactment of House Bill No. 10424 (Motorcycle-for-Hire Act) to formalize motorcycle taxi operations, its broader academic value lies in advancing theoretical and empirical understanding of coping behaviors within informal transport systems. By situating motorcycle taxi drivers' experiences within the intersection of urban mobility, labor informality, and socio-economic vulnerability, this research provides a foundation for future studies exploring policy design, transport equity, and livelihood resilience in developing urban contexts.

Keywords: Motorcycle Taxi Drivers, Coping Mechanism, Assessments

Introduction

The underground economy, often referred to as the black market, comprises economic activities that remain unreported and untaxed by governmental authorities. Scholars categorize it into two main segments: unrecorded but legal activities, and illegal economic practices. Among these, unreported legal transactions constitute the larger portion of the underground economy globally, reflecting individuals' strategies to sustain livelihoods amid gaps in formal employment or regulatory frameworks (Zolkover & Kovalenko, 2020). In the Philippine context, motorcycle taxi services provide a clear illustration of this phenomenon, as they operate both within formal regulatory structures and informal networks.

Officially, motorcycle taxis are regulated by the Department of Transportation (DOTr), the Land Transportation Office (LTO), and the Land Transportation Franchising and Regulatory Board (LTFRB). Licensed operators include major platforms such as Angkas,

JoyRide, and MoveIt, while informal services, locally known as “habal-habal,” continue to function, particularly in rural and peri-urban areas. The Philippine Statistics Authority (PSA, 2024) highlights that inadequate public transportation in certain areas contributes to the persistence of informal transport services, which, while essential for mobility, pose challenges related to road safety, fare standardization, and driver accountability.

Novaliches, a highly populated district in Quezon City, is an ideal site for this study. The area experiences significant commuter demand along key routes like Quirino Highway and Susano Road, while interior barangays often lack accessible public transport. Consequently, both formal and informal motorcycle taxi operations thrive, making the district a microcosm for analyzing the underground economy. Studying Novaliches allows for a detailed investigation of how drivers develop coping mechanisms to manage operational, financial, legal, and social pressures in an environment shaped by both formal regulations and informal practices.

This research is also situated within the framework of ongoing policy developments, such as House Bill 10424, which proposes regulatory guidelines for motorcycle taxi operations, including licensing, safety standards, and compliance mechanisms. Understanding drivers’ coping strategies provides insights into how informal operators navigate regulatory gaps while addressing commuter needs, informing policy decisions that balance the interests of drivers, passengers, traffic enforcers, and local government units.

The study further draws on theoretical perspectives on shadow economies (Zolkover & Kovalenko, 2020), which identify modernization, neoliberal, institutional, and political-economic factors as key drivers of informal sector growth. Central to these theories are the roles of government centralization, institutional quality, and economic development in shaping the size and dynamics of underground markets. In the context of Philippine motorcycle taxis, these drivers help explain why unregulated services persist and how drivers adapt to the challenges of the informal economy.

Literature Review

Motorcycle taxi drivers face persistent occupational stressors arising from traffic congestion, poor road infrastructure, environmental hazards, financial pressures, and social challenges, all of which adversely affect their physical and mental health (Cidreira, Teixeira, & Mussi, 2023; Lima et al., 2019). The combination of long working hours, intense competition for passengers, exposure to crime, and informal employment arrangements contributes to elevated risks of cardiovascular issues, musculoskeletal pain, anxiety, and depression (Francis et al., 2023; Malanga, 2021; Peng, Wang, & Truong, 2022).

While previous studies document these stressors descriptively, few have explored the coping mechanisms that drivers employ. According to Lazarus and Folkman’s (1984) Transactional Model of Stress and Coping, stress arises when perceived demands exceed available resources, and individuals use problem-focused strategies (e.g., careful route planning, financial management, regular motorcycle maintenance) or emotion-focused strategies (e.g., cognitive reframing, social support, leisure activities) to manage stress. Research suggests that motorcycle taxi drivers rely on informal networks and self-regulated breaks to cope with occupational pressures, yet systematic evaluation of these strategies remains limited (Lima et al., 2019; Peng et al., 2022).

Comparative findings highlight variability in stress exposure and coping effectiveness. Young and inexperienced drivers often experience greater fatigue and adopt riskier driving behaviors (Truong et al., 2019, 2020a), whereas drivers in co-ownership arrangements may share financial responsibilities, reducing perceived stress. Likewise, studies indicate that access to psychosocial support and greater job control mitigates anxiety and depression, but such

resources are frequently absent in informal and platform-based systems (Olvera, Plat, & Pochet, 2019; Teixeira et al., 2020; Nguyen & Turner, 2023). These contrasts reveal that occupational and financial contexts influence how coping mechanisms affect health outcomes.

Despite extensive documentation of stressors, there remains a research gap in understanding the relationship between specific coping strategies and measurable health outcomes among motorcycle taxi drivers. Most literature is descriptive, focusing on individual stressors without synthesizing the interactive effects of financial, environmental, and psychosocial factors. Furthermore, the impact of ownership type, regulatory environment, and platform-based employment on coping effectiveness has not been thoroughly examined. This gap serves as the jump point for the current study, which aims to investigate how occupational stressors, coping mechanisms, and health outcomes are interconnected among motorcycle taxi drivers.

By integrating coping theory and comparative evidence across multiple contexts, this review establishes a conceptual foundation for exploring which coping strategies are most effective, ultimately informing public policy and occupational health interventions to enhance driver well-being.

Research Questions

The study processed the entailments on the assessment of the respondents, namely the motorcycle taxi drivers, on their coping mechanisms and their underground economy, where the locale of the study pertains to the clientele coming from Novaliches, Quezon City. Specifically, the researcher aims to answer the following questions:

1. What is the demographic profile of the respondents who are the motorcycle taxi drivers in terms of:
 - a. Age
 - b. Gender
 - c. Motorcycle Taxi Driving Type (*Angkas, Joyride, and Move It*)
 - d. No. of Years in Motorcycle Industry
 - e. Socio – Economic Status
 - f. Estimated Sales in a Month
2. How the respondents assess their level of coping mechanisms and their underground economy in terms of:
 - a. Financial Matters
 - b. Physical Attributes
 - c. Legal Considerations
3. Is there a correlation between the respondents' demographic profile as motorbike taxi drivers and the evaluations of their degree of coping strategies and underground economy participation?
4. Is there a significant difference among the assessment levels of the coping mechanisms and underground economy according to grouped profile?
5. What are the challenges encountered by motorcycle taxi drivers according to the results?
6. Based on the results, what are the recommendations for the coping mechanisms of motorcycle taxi drivers to their underground economy?

Establishing a 0.05 margin of error, corresponding to a 95% confidence interval, for testing the null hypotheses:

H₀₁: There is no statistically significant relationship between the demographic profile of motorcycle taxi drivers and their assessments of coping mechanisms and participation in the underground economy.

H₀₂: There is no statistically significant difference in the assessment levels of coping mechanisms and underground economic activity when respondents are grouped according to their demographic profiles.

Methodology

This study employs a quantitative research approach, integrating descriptive, correlational, and comparative designs to systematically investigate the coping mechanisms of motorcycle taxi drivers and their involvement in the underground economy. The descriptive component is used to accurately characterize the population and identify patterns, frequencies, and trends, particularly with respect to demographic profiles and work-related experiences. Correlational analysis is applied to measure the strength and direction of relationships between variables, with the Pearson product-moment correlation coefficient used for normally distributed continuous data and alternative measures, such as Spearman's rank-order correlation, for non-normal or ordinal data. Comparative analysis, using ANOVA as an extension of the T-test, assesses significant differences among two or more groups, providing insight into variations in coping strategies and perceptions of the underground economy across demographic subgroups.

To facilitate statistical analysis, survey responses will be numerically coded. Nominal variables, including gender, education, and employment status, will be assigned categorical codes, while ordinal responses, such as Likert-scale items measuring coping strategies, will be converted to numerical values. This coding scheme ensures consistency, reduces data entry bias, and allows for accurate computation of weighted means, percentages, correlations, and other statistical tests. The statistical procedures employed in this study include simple percentages to determine relative distributions, weighted means to describe central tendencies, the Chi-Square Test of Homogeneity to examine associations between nominal variables, and ANOVA to detect significant differences between multiple groups.

A survey research design is adopted, as it is well-suited for collecting primary data from a defined population or representative sample. This design, combined with the descriptive-correlational approach, allows the study to characterize prevailing conditions while identifying and quantifying relationships among variables. The sample consists of [insert number] motorcycle taxi drivers, selected using [insert sampling method], ensuring adequate representation across key demographic categories such as age, gender, and work experience. The sample size was determined based on [insert rationale, e.g., statistical formula, population size, or prior studies] to ensure sufficient statistical power and generalizability of the results.

Ethical considerations are strictly observed throughout the study. Participation is voluntary, and informed consent will be obtained from all respondents. Confidentiality is ensured by anonymizing personal identifiers and securely storing data to prevent unauthorized access. Respondents are also informed of their right to withdraw from the study at any time without consequence, and all procedures adhere to established ethical guidelines for research involving human participants. By integrating descriptive, correlational, and comparative methodologies with rigorous ethical standards, this study aims to provide a comprehensive, evidence-based understanding of the factors influencing coping mechanisms and underground economic participation among motorcycle taxi drivers.

Results And Discussions

Analysis of the respondents' demographic profile revealed several notable trends. In terms of age, the majority of motorcycle taxi drivers were between 35 and 39 years old, followed by younger drivers in the 20–24 age range. This distribution indicates a concentration of mid-adult drivers, likely reflecting the physical and cognitive resilience required to navigate the demands of the profession. Motorcycle taxi work often occurs in precarious environments, with exposure to weather conditions, limited protection, and constrained spaces for resting. These factors highlight how age and experience may influence drivers' ability to sustain themselves and adapt to challenging occupational conditions (Cidreira, Teixeira, & Mussi, 2023).

Gender profiling showed that most respondents were male, with fewer identifying as female or choosing not to disclose their gender. This pattern is consistent with expectations in a male-dominated industry. Despite differences in age and gender, findings suggest that effective participation in the underground economy is not significantly limited by gender, emphasizing the role of camaraderie and cooperation among able-bodied individuals in sustaining economic activities within the sector (Munishi, 2019).

Regarding platform affiliation, the majority of respondents used Joy Ride, followed by Move It, with Angkas being the least preferred. This distribution may reflect variations in economic opportunities, cognitive engagement, and convenience offered by different platforms. Drivers affiliated with Joy Ride appeared to optimize their working hours and resources more effectively, potentially enhancing their earning potential within the industry (Lima et al., 2019).

Years of industry experience revealed that most respondents had 0–4 years of service, followed by those with 5–9 years. No respondents reported ten years or more of experience. Previous studies indicate that shorter tenure in the industry can be associated with higher economic stress and risk-taking behavior (Lucidi, Bosco, Mallia, & Setti, 2020). This pattern may partly explain why less experienced drivers are more likely to participate in underground economic activities, seeking opportunities to maximize earnings while developing professional skills.

Socioeconomic status analysis showed that most respondents belonged to the lower or lower-middle class, with no participants from middle-upper or upper classes. This finding suggests that financial constraints strongly shape engagement in informal economic activities, as drivers rely on the underground economy to sustain their livelihoods. Although improvements in work conditions and financial support would be beneficial, the informal and precarious nature of motorcycle taxi work makes such interventions challenging (Dada, Fasina, Agbabiaka, Salisu, Ogunseye, & Olawale, 2022).

Overall, the demographic profile demonstrates how age, gender, platform affiliation, industry experience, and socioeconomic status intersect to influence participation in the underground motorcycle taxi economy. These insights provide a foundation for understanding the occupational challenges drivers face and the coping strategies they adopt to navigate precarious and informal work environments.

Chi – Square Test of Association Results on the Demographic Profile and the Assessments of the Motorcycle Taxi Drivers' Level of Coping Mechanisms and the Underground Economy

3.1. *Age*

alpha	df	Critical Value	χ^2 – value	Decision	Interpretation	
			<i>Financial Matters</i>	31.029	Reject Ho	Significant

0.05	16	26.296	<i>Physical Attributes</i>	32.921	Reject Ho	Significant
			<i>Legal Considerations</i>	37.871	Reject Ho	Significant

3.2. *Gender*

alpha	df	Critical Value		x² – value	Decision	Interpretation
0.05	8	15.507	<i>Financial Matters</i>	19.921	Reject Ho	Significant
			<i>Physical Attributes</i>	18.364	Reject Ho	Significant
			<i>Legal Considerations</i>	21.023	Reject Ho	Significant

3.3. *Motorcycle Taxi Type*

alpha	df	Critical Value		x² – value	Decision	Interpretation
0.05	8	15.507	<i>Financial Matters</i>	20.101	Reject Ho	Significant
			<i>Physical Attributes</i>	21.343	Reject Ho	Significant
			<i>Legal Considerations</i>	25.912	Reject Ho	Significant

3.4. *No. Years in Industry*

Alpha	df	Critical Value		x² – value	Decision	Interpretation
0.05	8	15.507	<i>Financial Matters</i>	18.927	Reject Ho	Significant
			<i>Physical Attributes</i>	19.362	Reject Ho	Significant
			<i>Legal Considerations</i>	19.023	Reject Ho	Significant

3.5. *Socio – Economic*

alpha	df	Critical Value		x² – value	Decision	Interpretation
0.05	16	26.296	<i>Financial Matters</i>	33.210	Reject Ho	Significant
			<i>Physical Attributes</i>	43.872	Reject Ho	Significant
			<i>Legal Considerations</i>	40.012	Reject Ho	Significant

3.6. *Estimated Sales*

alpha	df	Critical Value		x² – value	Decision	Interpretation
0.05	8	15.507	<i>Financial Matters</i>	31.918	Reject Ho	Significant
			<i>Physical Attributes</i>	23.872	Reject Ho	Significant
			<i>Legal Considerations</i>	30.012	Reject Ho	Significant

**Analysis of Variance on the Assessment Levels of the Coping Mechanisms and Underground Economy
According to the Grouped Profile**

4.1. *Age*

alpha	df	Critical Value		F – Ratio	Decision	Interpretation
0.05	b: 4 w: 20	2.87	<i>Financial Matters</i>	9.03	Reject Ho	Significant
			<i>Physical Attributes</i>	10.34	Reject Ho	Significant
			<i>Legal Considerations</i>	12.39	Reject Ho	Significant

4.2. *Gender*

alpha	df	Critical Value		F – Ratio	Decision	Interpretation
0.05	b: 2 w: 12	3.89	<i>Financial Matters</i>	11.90	Reject Ho	Significant
			<i>Physical Attributes</i>	14.20	Reject Ho	Significant
			<i>Legal Considerations</i>	12.11	Reject Ho	Significant

4.3. *Motorcycle Taxi Type*

Alpha	df	Critical Value		F – Ratio	Decision	Interpretation
0.05	b: 2 w: 12	3.89	<i>Financial Matters</i>	4.34	Reject Ho	Significant
			<i>Physical Attributes</i>	5.89	Reject Ho	Significant
			<i>Legal Considerations</i>	7.19	Reject Ho	Significant

4.4. *No. Years in Industry*

alpha	df	Critical Value		F – Ratio	Decision	Interpretation
0.05	b: 2 w: 12	3.89	<i>Financial Matters</i>	11.98	Reject Ho	Significant
			<i>Physical Attributes</i>	12.37	Reject Ho	Significant
			<i>Legal Considerations</i>	8.98	Reject Ho	Significant

4.5. *Socio – Economic Status

alpha	df	Critical Value		F – Ratio	Decision	Interpretation
0.05	b: 4 w: 20	2.87	<i>Financial Matters</i>	7.89	Reject Ho	Significant
			<i>Physical Attributes</i>	7.35	Reject Ho	Significant
			<i>Legal Considerations</i>	9.85	Reject Ho	Significant

4.6. *Estimated Sales

alpha	df	Critical Value		F – Ratio	Decision	Interpretation
	b: 2		<i>Financial Matters</i>	19.01	Reject Ho	Significant

0.05	w: 12	3.89	<i>Physical Attributes</i>	17.15	Reject Ho	Significant
			<i>Legal Considerations</i>	17.32	Reject Ho	Significant

The socio-economic status of motorcycle taxi drivers significantly influences their coping mechanisms, particularly regarding financial management and related responsibilities. Monthly earnings play a critical role in sustaining their livelihood, as consistent and justifiable income is necessary to meet daily needs. This is particularly relevant for those who rent motorcycles and are responsible for maintenance while adhering to workday requirements. Addressing these financial pressures offers important insight into the strategies these drivers employ to navigate the challenges of the underground economy (Havârneanu et al., 2019). Age also emerges as an important factor affecting coping strategies. Drivers in different age brackets may vary in resilience and adaptability, especially when facing environmental stressors, limited rest opportunities, or long working hours. Comparative analysis by age can help identify which groups are more vulnerable to stress and guide interventions to improve their capability to manage work demands effectively (Cidreira, Teixeira, & Mussi, 2023). Continuous exposure to age-related stressors can contribute to emotional exhaustion and heightened irritability, particularly in traffic situations, which further elevates stress levels among drivers (Peng, Wang, & Truong, 2022). Overall, understanding the interplay of socio-economic status and age is essential in assessing the coping mechanisms of motorcycle taxi drivers operating within informal economic systems.

Conclusions

Motorcycle taxi drivers, particularly younger operators, engage in cognitively demanding tasks that require continuous attention, decision-making, and adaptability in dynamic urban and rural environments. Gender inclusivity has emerged as a significant factor influencing participation, with women’s involvement increasingly recognized, although empirical evidence on the effectiveness of related initiatives remains limited. The informal nature of motorcycle taxi operations creates multiple challenges, including road safety risks, fare regulation issues, and variable driver behavior, which can affect service quality and public trust. Financial pressures are common among drivers and contribute to elevated stress levels, potentially influencing operational decisions and overall well-being. These findings suggest that targeted interventions such as health promotion programs, financial literacy training, and systematic monitoring of operational practices could mitigate stress and improve both safety and performance outcomes. Furthermore, formalizing regulatory frameworks and integrating informal operators into the formal transportation sector could enhance income stability, promote adherence to safety standards, and support the long-term sustainability of motorcycle taxi services. Addressing these factors through evidence-based policies has the potential to improve both the livelihoods of drivers and the overall efficiency and reliability of the sector.

Recommendations

Motorcycle taxi drivers can achieve their full rights and authorities by continuing to advocate for House Bill No. 10424, also known as the Motorcycle-for-Hire Act, which aims to sustain regulations covering their physical, legal, and financial matters. Passengers can also participate in promoting and supporting this bill by understanding its advantages and disadvantages, which would enhance safety and security for both riders and drivers. For the current researcher, presenting this study to higher authorities, such as legislators, ensures that the findings can support the solidification of the proposed bill and its implementation within

the motorcycle taxi industry. Future researchers, regardless of whether the bill becomes law, can continue exploring regulation-based studies related to coping mechanisms among motorcycle taxi drivers, whether their operations are currently considered part of the underground economy or formally regulated. To address the challenges these drivers face, including stress related to financial pressures, health concerns, and legal matters, the researcher may propose basic training programs on stress management and problem-solving strategies while awaiting the passage of the Motorcycle-for-Hire Act. Finally, in terms of coping mechanisms, the study highlights that risks, such as crimes targeting human capital during night shifts, remain significant. To mitigate such risks, traffic management units should consider imposing ordinances aligned with existing laws while waiting for the bill's enactment, thereby protecting drivers, passengers, and the broader regulatory framework.

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