THE RISE OF RIDE-SHARING APPS IN KATHMANDU AND THE FACTOR INFLUENCING THE SYSTEM

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ABSTRACT

This study investigates the emergence and growth of ride-sharing applications in Kathmandu, Nepal, highlighting challenges such as safety concerns and regulatory issues. It focuses on economic, social, technological, and environmental factors influencing their adoption, considering variables like income, education, smartphone ownership, and cultural aspects in the local context. The research aims to provide insights into the determinants behind the proliferation of ride-sharing services in Kathmandu.

Key Words: Ride-sharing, App, Kathmandu

1 Chapter 1: Introduction

1.1 Background

Problem Statement

The lack of an effective public transit system in Kathmandu results in traffic congestion and pollution. Ride-sharing apps like In driver and Pathao offer an alternative, but challenges exist in terms of regulations, safety, and accessibility during high demand. Infrastructure issues lead to longer waiting times and higher costs.

Research Questions

The study focuses on:

a. The relationship between socio-economic factors and ride-sharing app adoption.

b. The relationship between app design/technology and adoption.

c. The relationship between environmental factors (like air pollution) and adoption.

Research Objectives

The study aims to:

a. Examine how socio-economic factors influence ride-sharing adoption.

b. Evaluate how technology/design affects adoption.

c. Investigate how environmental factors impact adoption.

Research Hypotheses

The hypotheses state significant relationships between variables:

1. Socio-economic factors influence ride-sharing adoption.
2. App design/technology affects ride-sharing adoption.
3. Environmental factors influence ride-sharing adoption.

Significance

The research provides insights for ride-sharing businesses and governments, addressing challenges and opportunities. It examines economic, societal, and ecological impacts, contributing to sustainable transportation systems.

Scope

The study covers customer behavior, effects on the taxi industry, economic impacts, legal frameworks, environmental consequences, and technological advancements.

Limitations

Limitations include limited data availability, small sample size, biases in data collection, potential cultural variations, and resource constraints.

Key Terminology

The key terms defined include "ride-sharing applications," "ride-sharing services," "customer adoption," and "user experience."

Research Model

A research model is depicted, showing independent variables influencing the dependent variable of ride-sharing app adoption.

Chapter Summary

Chapter 1 introduces the research topic, discussing challenges and opportunities of ride-sharing apps in Kathmandu. It outlines the problem, research questions, objectives, hypotheses, significance, scope, limitations, key terminology, and research model.

2 Chapter 2: Literature Review

2.1 2.1 Base Papers Review

Title	To accept the ride or not? The role of trust and perceived value in on-demand ridesharing services
Author Name/Year	Nalini Venkatasubramanian, Aneesh Krishna, and Jasleen Kaur, 2019
Features	1. Investigates the significance of trustworthiness and sense of value in the acceptance and utilization of upon request ride-sharing services.
	2. Examines the impact of confidence and perceived value on customer intention to utilize ride-sharing services.
	3. Employs a survey methodology to gather data from a sample of 300 participants located in India.
Benefits	- Offers valuable insights into the determinants of ride-sharing service uptake, enabling ride-sharing companies to formulate efficient marketing and client retention strategies.
	- Contributes to the existing body of research on the widespread use of ride-sharing services in developing nations, a topic with limited investigation.
Limitations	- Scope limited to a sample size of 300 participants from India, potentially limiting generalizability to other regions.
	- Primarily examines the impact of trust and perceived value, neglecting other potential factors like pricing or convenience that may influence adoption rates.
Advantages	- Guided by the Model for Technology Acceptance, a widely recognized theoretical framework.
	- Offers a comprehensive examination of various aspects impacting the acceptance and utilization of ride-sharing services, assisting ride-sharing firms in customization.
Method of	- Utilizes a quantitative methodology, employing a survey instrument for data

Title	Restoring faith in ride-sharing amid security events
Author Name/Year	Pawan Kumar, 2021
Features	1. Discusses the effectiveness of pull-based service providers (SPs) in the context of online ride-hailing services.
	2. Examines the role of perceived value, trust, and switching costs in shaping consumer behavior towards pull-based SPs.
	3. Provides insights into the factors that influence consumer preference for pull-based SPs in the ride-hailing industry.
Benefits	- Offers a deeper understanding of the factors influencing consumer behavior in the context of online ride-hailing services, valuable for companies and policymakers.
	- Highlights the importance of perceived value and trust in shaping consumer behavior towards pull-based SPs, informing marketing strategies.
	- Provides insights into factors increasing switching costs for consumers, aiding ride-hailing companies in customer retention.
Limitations	- Utilizes a quantitative methodology, employing a survey instrument for data collection from 300 participants.
	- Primarily focuses on trust, perceived value, and intention to utilize ride-sharing services, potentially overlooking other factors.

Title	To accept the ride or not? The role of trust and perceived value in on-demand ridesharing services
Research	collection from 300 participants in India.
Model Used	- Applies the Technology Acceptance Model (TAM) as the theoretical framework guiding the research.

3 Chapter 3: Research Methodology

3.1 Introduction

Objectives: Examine determinants influencing ride-sharing app acceptance and usage in Kathmandu.

Research methodology combines qualitative and quantitative methods.

3.2 Research Philosophy

Discusses positivism (objectivity, quantifiability) and interpretivism (subjectivity, meanings) research philosophies.

3.3 Research Approach

Deductive approach: Starts with theory/hypothesis, then collects and analyzes data.

Inductive approach: Gathers data first, then derives theories/hypotheses.

3.4 Research Strategy

- Utilizes a survey methodology with questionnaires for data collection.
- Rigorous data analysis to formulate conclusions.

3.5 Methodology

- Qualitative, quantitative, and mixed research approaches.
- Qualitative for in-depth understanding, quantitative for statistical analysis.

3.6 Time Horizon

Time frame for data collection and analysis.

3.7 Data

Primary data (interviews, surveys, observations) and secondary data (existing sources).

3.8 Instrumentation

Tools and methods used for data collection, e.g., questionnaires.

Types of questionnaires, closed-ended, open-ended, Likert scale.

3.9 Data Collection Sources

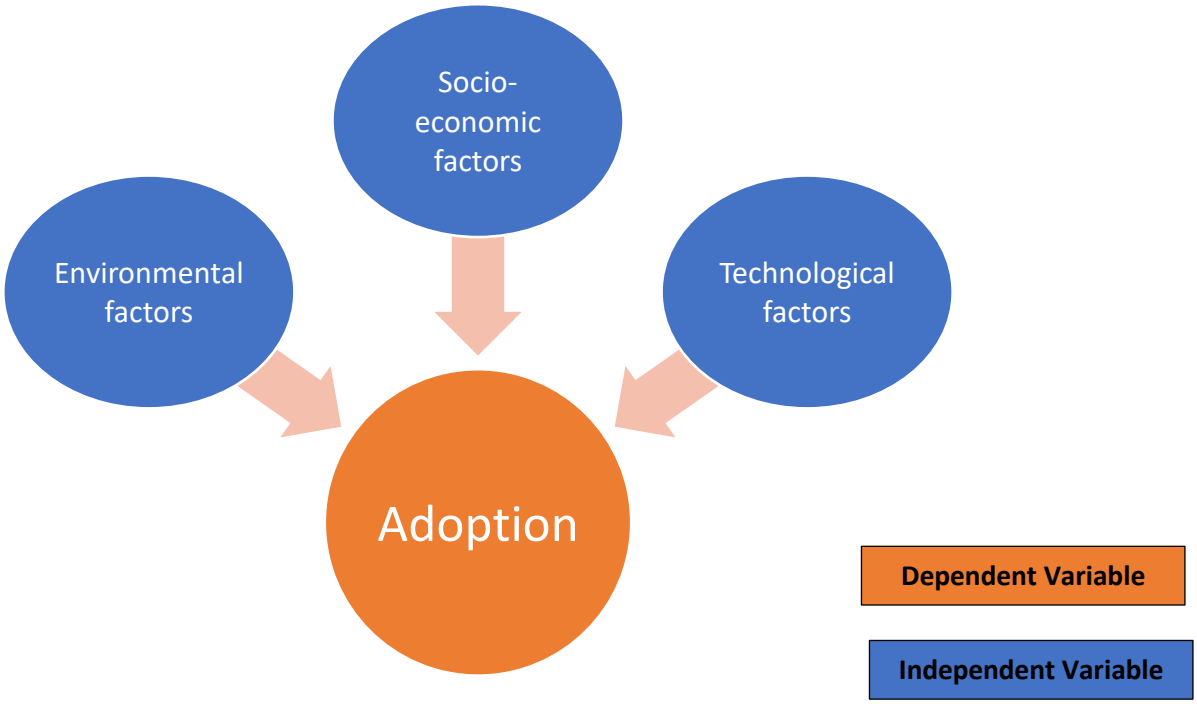

Figure 1: Research Model

3.10 Sampling and its types

- Probability sampling (simple random, stratified, cluster, systematic).
- Non-probability sampling (convenience, purposive, snowball, quota).
- Selection of stratified random sampling for a representative sample.

3.11 Data Processing

- Data editing (error correction).
- Data coding (conversion to numerical form).

3.12 Data Analysis

- Reliability (consistency of findings).
- Validity (accuracy of measurements).

3.13 Ethical Considerations

- Participant confidentiality.
- Ensuring data accuracy.

- Informed consent.

3.14 Chapter Summary

- Objective of the study.
- Mixed-methods approach.
- Deductive methodology.
- Sampling method.
- Data collection and analysis.
- Adherence to ethical considerations.Informed consent.

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3.6 3.12 Data Processing

3.7 Data editing and coding were executed utilizing the SPSS software, wherein all data points were entered and systematically coded. Additionally, Excel was employed as part of the data processing process.

3.8

3.9 3.13 Data Analysis

3.10 The assessment of reliability and validity was conducted by means of reliability analysis utilizing the SPSS software.

3.11

3.12 3.14 Ethics

Ethical considerations and privacy concerns were upheld throughout the research endeavor. Furthermore, participants' consent was diligently sought before their involvement.

4 4. Data Analysis

4.1 4.2 Respondents Feedback

Table 4: Respondents Feedback

Questionnaire	No. of Questionnaire
Sent	400
Collected	334

4.2 Data for this study was collected via a survey with the goal of obtaining a minimum of 350 responses. The questionnaire featured closed-ended questions to streamline participation and reduce response time. It was distributed electronically using Google Docs through various online channels. Data collection occurred from the third week of June 2023 to the third week of July 2023. While sent to approximately 400 individuals, 334 valid responses were received and analyzed.

4.3 4.3 Reliability Test

Table 5: Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
.942	21

4.4 In research, assessing the reliability of measurement tools is crucial for quantitative studies. Reliability testing gauges the consistency of these tools' results. Cronbach's alpha coefficient, ranging from 0 to 1, measures the correlation between variables in a survey questionnaire. A value closer to 1 indicates strong correlation. A Cronbach's alpha over 0.7 signifies good reliability between questionnaire variables.

4.5 4.4 Descriptive Statistics

Table 6: Descriptive Statistics

Descriptive Statistics			
	Mean	Std. Deviation	N
Overall Adoption	3.5725	.84439	334
Socio_Economic_Factor	3.9406	.93742	334
Technological Advancement	3.9784	.93437	334

Environmental Factors	3.9120	.92391	334

Descriptive statistics is a vital branch of statistics that summarizes and presents data effectively. It helps in understanding key aspects of a dataset, such as central tendencies, variability, and distribution. In the provided dataset, descriptive statistics like mean, standard deviation, and sample size (N) shed light on respondents' perceptions of factors like overall adoption, socio-economic factors, technological advancement, and environmental factors. These statistics offer valuable insights for analysis and decision-making.

4.6 4.5 Correlation Test

Table 7: Correlation

Correlations					
		Overall Adoption	Socio_Economic_ Factor	Technological Advancement	Environmental Factors
Pearson Correlation	Overall Adoption	1.000	.063	.100	.030
	Socio_Economic_Factor	.063	1.000	.924	.885
	Technological Advancement	.100	.924	1.000	.845
	Environmental Factors	.030	.885	.845	1.000
Sig. (1-tailed)	Overall Adoption	.	.000	.001	.029
	Socio_Economic_Factor	.000	.	.000	.000
	Technological Advancement	.001	.000	.	.000
	Environmental Factors	.029	.000	.000	.

4.7 This data analysis reveals significant positive correlations between "Overall Adoption" and socio-economic factors, technological advancement, and environmental factors. The associated p-values emphasize the statistical significance of these relationships, particularly highlighting the importance of "Socio-Economic Factor." Additionally, a normality test assesses data distribution characteristics.

4.8 4.6 ANOVA Table

Table 8: ANOVA Table

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.974	3	1.658	2.354	.002[b]
	Residual	232.452	330	.704		
	Total	237.427	333			
a. Dependent Variable: Overall Adoption						
b. Predictors: (Constant), Environmental Factors, Technological Advancement, Socio_Economic_Factor						

4.9

4.10 ANOVA (Analysis of Variance) is a statistical method that compares means across multiple groups, helping to determine if observed differences are statistically significant. In this case, the ANOVA table shows that the regression model involving "Environmental Factors," "Technological Advancement," and "Socio_Economic_Factor" as predictors significantly explains the variation in "Overall Adoption" ($F = 2.354$, $p = 0.002$). This suggests that the combined influence of these predictors contributes significantly to explaining the variability in "Overall Adoption."

4.11 4.7 Normality Test

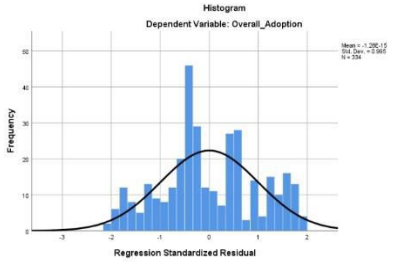

Figure 2: Histogram

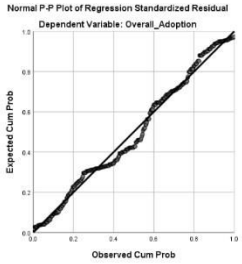

Figure 3: Normal P-P Plot Regression Standardized Residual

4.12

4.13 Visual cues in the data indicate a tendency towards symmetry around the mean. This is evident from the histogram's balanced appearance, with similarities between its left and right portions. Additionally, the data points in the Normal P-P Plot of Regression Standardized Residual form a straight line, suggesting conformity to a normal distribution.

4.14 4.9 Coefficient Table

Table 9: Coefficient Table

Coefficients						
Model		Unstandardised Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.827	.209		18.352	.000
	Socio_Economic_Factor	.079	.149	.088	.534	.001
	Technological Advancement	.283	.130	.313	2.179	.030
	Environmental Factors	.143	.108	.156	1.319	.018
a. Dependent Variable: Overall Adoption						

4.15

4.16 The table of coefficients presents estimated values for independent variables and their impact on the dependent variable in a simple linear regression model. The equation for this study is:

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4.18 $Y = a + b1X1 + b2X2 + b3X3$

4.19

4.20 Where:

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4.22 Y = Dependent Variable (Overall Adoption)

4.23 a = Constant Value

4.24 X1 = Independent Variable (Technological Advancement)

4.25 X2 = Independent Variable (Socio-Economic_Factor)

4.26 X3 = Independent Variable (Environmental Factors)

4.27 b1, b2, b3 = Coefficients (Slopes)

4.28 The dataset includes three independent variables: Technological Advancement, Socio-Economic Factors, and Environmental Factors, influencing the dependent variable, Overall Adoption. The regression equation helps us assess the relationships between these variables and Overall Adoption.

4.29

4.30 From the coefficients:

4.31

- Socio-Economic Factor contributes positively, with a 1-unit increase leading to a 0.079 unit increase in Overall Adoption.
- Technological Advancement positively affects Overall Adoption, with a 1-unit increase corresponding to a 0.283 unit increase.
- Environmental Factors also have a positive impact, with a 1-unit increase resulting in a 0.143 unit increase in Overall Adoption.

4.32

4.33 The intercept term (0.827) represents the expected Overall Adoption when all predictor variables are zero.

4.34 4.10 Hypothesis Result

5 In summary, this chapter delves into the quantitative research data analysis phase. It encompasses data collection, cleaning, and interpretation, aiming to extract valuable insights. Key highlights include:

- A reliable survey with 334 valid responses, validated by a Cronbach's alpha of 0.942.
- Descriptive statistics offering insights into central tendencies and variability of variables.
- Significant positive correlations between Overall Adoption and Socio-Economic Factor, Technological Advancement, and Environmental Factors.
- Confirmation of data adhering to a normal distribution through normality testing.
- ANOVA demonstrating the regression model's significant explanatory power for Overall Adoption variance ($F = 2.354$, $p = 0.002$).
- Coefficient analysis presenting a regression equation showcasing the positive contributions of all predictor variables.

6 In conclusion, this data analysis process provides valuable insights into ride-sharing app adoption in Kathmandu. It enhances our understanding of transportation patterns and environmental sustainability within the socio-economic and environmental context, contributing to informed decision-making.

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9 Chapter 5: Conclusion and Recommendations

9.1 5.2 Evaluating Findings

Question 1: Is there any significant relationship between gender-based skills and organizational efficiency?

An observed significance level of 0.024 implies a notable statistical importance concerning Equitable Payment's connection to Organizational Efficiency. To put it differently, the likelihood of encountering this particular relationship purely due to random occurrences is merely 2.4%. This outcome underscores that Equitable Payment holds substantial influence over Organizational Efficiency, signifying that changes in equitable payment are likely to bring about meaningful shifts in organizational effectiveness.

Question 2: Is there any significant relationship between equitable payment and organizational efficiency?

With a significance level of 0.012, Gender-Based Skills display a robust statistical significance concerning their association with Organizational Efficiency. This low significance level suggests that the likelihood of observing this connection due to random chance is quite slim. This outcome provides strong evidence in favor of a significant and substantial relationship between Gender-Based Skills and Organizational Efficiency, indicating that changes or variations in gender-based skills are likely to have a meaningful impact on the organization's overall efficiency.

Question 3: Is there any significant relationship between Inclusive Organizational Culture and organizational efficiency?

An observed significance level lower than 0.001 points to a robust and compelling statistical significance between Inclusive Organizational Culture and Organizational Efficiency. This exceedingly small significance level implies that the possibility of this correlation arising by

random occurrences is extremely unlikely. This outcome strongly indicates that Inclusive Organizational Culture holds substantial sway over Organizational Efficiency, underscoring that variations or enhancements in the inclusive culture of the organization are highly likely to bring substantially impact overall effectiveness.Aa significance level below 0.001 highlights the substantial and non-random connection between Inclusive Organizational Culture and Organizational Efficiency. This result emphasizes that the observed relationship is not a product of chance and indicates a significant and influential role played by the inclusive culture of the organization in determining its overall efficiency and performance.

9.2 5.3 Conclusion

10 1. Summary of Findings:

- **Demographics:** Most respondents were aged 18-34, with males being more represented.
- **Usage Patterns:** Diverse usage frequencies were observed.
- **Factors Influencing Adoption:** Convenience was the most influential factor, followed by cost savings and environmental concerns.
- **Correlation Analysis:** Positive relationships were found between adoption and socio-economic, technological, and environmental factors. Strong correlations were also noted among these factors.

2. Discussion of Findings:

- **Research Question 1:** Socio-economic factors have a weak but significant positive influence on adoption.
- **Research Question 2:** Technological factors, like app design, positively impact adoption.
- **Research Question 3:** Environmental factors, such as air quality, influence adoption positively.

3. Implications of Study:

- **Urban Planning:** Insights guide transportation system improvements.
- **Policy Development:** Policies promoting sustainable transportation options can be crafted.
- **Socio-Economic Inclusivity:** Measures can ensure accessibility for diverse income groups.
- **Business Strategies:** Service providers can tailor offerings to enhance user experience.

- **Environmental Impact:** Ride-sharing's role in reducing pollution and congestion can be emphasized.

11 Conclusion:

12

- Data analysis was instrumental in understanding ride-sharing app adoption in Kathmandu.
- Convenience, cost savings, and environmental consciousness are key drivers.
- Future research could explore regional variations, expand sample sizes, consider mixed methods, include more variables, and conduct longitudinal studies.

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