

Impact of Commute Stress on Lifestyle and Psychological Well-Being among Urban Adults in Bangalore

Ambika Manjunath¹, Dr. Richa Gupta²

¹USN No. 241MSCD00051, Fourth Semester

²Associate Professor, Centre for Distance Education and Online Education, Jain University (Deemed-to-be), Bengaluru, India

Abstract: *Urbanisation and rapid motorisation in Indian metropolitan hubs like Bangalore have turned daily travel into a major source of environmental stress. While transportation infrastructure is widely studied, the psychological and lifestyle impacts of commuting remain under-researched. This study examined the relationship between commute stress, lifestyle patterns, and psychological well-being among urban adults. A quantitative cross-sectional design evaluated N = 109 working adults (65.1% male, 34.9% female) across diverse age brackets, occupations, and commuting modes. Data were gathered using standardised measures and analysed via descriptive statistics, independent-samples t-tests, one-way ANOVAs, and Pearson product-moment correlations. Bivariate correlation revealed a significant negative association between commute stress and psychological well-being ($r = -.249, p = .009$) and a strong positive association with lifestyle burden ($r = .865, p < .001$). Longer daily commute duration was significantly associated with elevated commute stress ($r = .246, p = .009$). One-way ANOVAs indicated statistically significant differences across age groups for both commute stress ($F(4, 104) = 3.11, p = .030$) and lifestyle ($F(4, 104) = 3.75, p = .007$). No statistically significant differences were observed across gender, occupational categories, or transportation modes for the primary dependent variables. Commute stress and daily travel duration significantly correlate with psychological well-being and lifestyle disruptions. These findings highlight the need for urban planning and organisational policies that mitigate daily commuting stressors to support mental health.*

Keywords: Commute stress, Psychological well-being, Lifestyle behaviours, Urban commuters, Travel duration

1. Introduction

Rapid urbanization and economic expansion have transformed Indian metropolitan hubs into dense commercial centers, making daily travel an unavoidable component of modern employment. In fast-growing cities such as Bangalore, rapid population growth and expanding boundaries have severely outpaced existing transit infrastructure. Consequently, working professionals face severe traffic congestion, transit delays, and unpredictable travel conditions on a daily basis. This daily travel experience is no longer a neutral logistical routine, but a persistent environmental stressor that exerts a continuous strain on working adults.

Commute stress is defined as the psychological and physiological strain experienced during travel between the home and the workplace due to environmental factors like congestion, long travel times, and loss of control. Theoretical frameworks such as the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) and Allostatic Load Theory (McEwen, 1998) suggest that persistent micro-stressors accumulate over time, overwhelming individual coping resources and resulting in chronic psychological strain. Extended travel times can also disrupt daily routines, directly impairing health-promoting lifestyle behaviors such as maintaining regular sleep schedules, engaging in physical activity, and setting aside time for rest or leisure. Prolonged exposure to these stressors threatens psychological well-being, which encompasses key dimensions of positive functioning including autonomy, environmental mastery, personal growth, and self-acceptance.

Despite the evident burden of urban traffic in the Indian context, most existing research prioritizes transportation logistics, civil infrastructure, and economic productivity over psychological and mental health outcomes. Empirical studies exploring how daily commuting influences lifestyle behaviors and overall psychological well-being among urban Indian professionals remain sparse.

To address this gap, the present study assesses the levels of commute stress among urban working adults and evaluates the underlying relationships between commute stress, daily commute duration, lifestyle behaviors, and psychological well-being. Furthermore, it examines whether commute stress, lifestyle patterns, and psychological well-being vary significantly across key demographic and travel characteristics, such as gender, age groups, occupation, and transportation modes

2. Literature Review

2.1 Urban Environmental Stress and the Commuting Experience

Urban environments expose individuals to a continuous array of ambient stressors, including noise, overcrowding, air pollution, and transportation delays. According to Environmental Stress Theory, prolonged exposure to these harsh physical and operational conditions taxes an individual's cognitive and physiological systems, leading to chronic strain. In modern metropolitan centers, commuting has evolved from a simple transition between home and work into a primary source of daily environmental stress. Commuters frequently contend with unpredictable delays, traffic congestion, and a lack of control over their travel

schedules, all of which contribute to elevated levels of stress, frustration and daily tension.

2.2 Theoretical Frameworks: Stress, Coping, and Allostatic Load

The psychological impact of commuting can be understood through key stress frameworks. The Transactional Model of Stress and Coping conceptualizes stress as an ongoing interaction between the person and the environment, occurring when travel demands exceed perceived coping resources. Complementing this, Allostatic Load Theory explains how repeated exposure to daily micro-stressors leads to cumulative physiological and psychological wear and tear over time. Daily commute stress acts as a persistent stressor that continually triggers physiological arousal, eventually compromising psychological resilience and long-term health.

2.3 Commuting, Commute Duration, and Psychological Stress

Empirical research consistently links difficult commuting conditions and extended travel times to adverse psychological outcomes. Longer commute durations are associated with heightened perceived stress, irritability, fatigue, and decreased overall life satisfaction. Comparative studies examining different commuting arrangements show that longer, highly congested travel periods trigger physiological stress responses, such as elevated heart rate and blood pressure. Furthermore, unpredictable travel environments worsen subjective stress by reducing the commuter's sense of environmental mastery and operational control.

2.4 Impact of Commuting on Lifestyle Behaviours

Beyond its immediate psychological burden, commuting significantly shapes daily lifestyle patterns by consuming valuable time and energy. Extended daily commutes restrict the available time for essential health-promoting behaviors, including physical activity, adequate sleep, healthy meal preparation, and leisure activities. Research indicates that longer travel distances and times are associated with lower physical fitness and increased metabolic health risks. The time-siphon effect of commuting often forces trade-offs that lead to sedentary behaviour, disrupted sleep patterns, and reduced opportunities for social and family engagement.

2.5 Commute Stress and Psychological Well-Being

Psychological well-being represents a multidimensional construct encompassing self-acceptance, positive relationships, autonomy, environmental mastery, purpose in life, and personal growth. Chronic environmental stressors like commuting difficulties directly interfere with these core dimensions. When daily journeys are unpredictable and exhausting, individuals experience a reduced sense of mastery over their environment and lower daily emotional fulfilment. Empirical studies show that adverse commuting conditions negatively affect broad indicators of mental health, life satisfaction, and subjective well-being.

2.6 Commuting Dynamics in the Indian Context

Metropolitan cities in India present unique commuting challenges characterized by rapid population growth, expanding urban sprawl, mixed traffic, and strained public infrastructure. In rapidly growing cities like Bangalore, transportation infrastructure has struggled to keep pace with rapid motorization and professional migration. Consequently, working adults routinely spend significant portions of their day navigating severe traffic congestion. While transportation planning studies abound, empirical research examining the psychological and lifestyle consequences of daily commuting within the Indian metropolitan context remains scarce.

3. Problem Definition

Rapid urbanisation and industrial expansion in metropolitan centres such as Bangalore have made daily commuting an increasingly time-consuming and demanding aspect of modern employment. While transportation research traditionally focuses on urban planning, infrastructure, and traffic management, there has been limited empirical attention to the psychological and behavioural toll on working adults. Extended travel times, heavy traffic congestion, unpredictable delays, and physical discomfort during transit act as chronic environmental stressors that can spill over into daily life. Prolonged daily travel threatens to disrupt essential lifestyle behaviours- such as sleep schedules, physical activity, and leisure- while undermining key dimensions of psychological well-being. Therefore, this study examines the impact of commute stress on lifestyle behaviours and psychological well-being among urban adults in Bangalore.

4. Objectives of the Study

The study was guided by the following objectives:

- 1) To assess the level of commute stress among urban working adults in Bangalore.
- 2) To examine the relationship between commute stress and psychological well-being.
- 3) To analyse the influence of commute stress on lifestyle behaviours.
- 4) To examine gender differences in commuting stress.
- 5) To determine whether commute duration significantly relates to commute stress and psychological well-being.

Hypothesis

The following hypotheses were proposed:

- H₁: There is a significant relationship between commute stress and psychological well-being.
 H₂: There is a significant association between commute stress with lifestyle behaviours.
 H₃: There is a significant gender difference in commute stress.
 H₄: There is a significant association between commute duration with commute stress.

5. Methodology

5.1 Research Design

This study adopted a quantitative, non-experimental cross-sectional research design to investigate the relationships among commute stress, lifestyle patterns, psychological well-

being, and demographic/travel characteristics among working adults in Bangalore. A cross-sectional approach was utilized to collect data at a single point in time, enabling the assessment of existing variations and associations across variables without experimental manipulation.

5.2 Participants

The study sample comprised 109 urban working adults residing and commuting in Bangalore, recruited through non-probability convenience sampling. Males constituted the majority of the sample (65.1%, $n = 71$), while females accounted for (34.9% $n = 38$). Participants spanned various age groups, with the largest proportion falling between 36–45 years (33.0%), followed by 26–35 years (21.1%), 46–55 years (20.2%), 18–25 years (13.8%), and above 55 years (11.9%). In terms of employment, private sector employees formed the largest group (69.7%), alongside students (11.0%), government employees (7.3%), self-employed individuals (6.4%), and other occupations (5.5%). Regarding commuting habits, cars (40.4%), cabs/taxis (22.9%), and two-wheelers (20.2%) were the predominant modes of transport, with 97.2% of all participants reporting an average daily travel duration of 1–2 hours.

5.3 Measures

Commute Stress Questionnaire

A psychometric scale used to evaluate subjective strain, emotional frustration, travel unpredictability, traffic-related friction, and perceived lack of control experienced during daily travel. Higher scores reflect higher levels of commuting stress.

Lifestyle Behaviour Questionnaire

A structured assessment measuring health-related daily behavioural patterns, including sleep consistency, physical activity engagement, dietary routine, and leisure/work-life balance. Higher scores represent greater lifestyle disruption and burden.

Psychological Well-Being Questionnaire

A structured psychological well-being scale based on Ryff's (1989) multidimensional model, assessing core dimensions of positive functioning such as autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Higher scores indicate greater overall psychological well-being.

5.4 Procedure

Data collection was conducted with voluntary working adults in Bangalore recruited through workplace networks and online platforms. Before participation, individuals received brief details regarding the study's purpose and completed an informed consent process emphasising voluntary participation, response anonymity, and confidentiality. Eligible participants completed the standardised paper or digital questionnaire battery, which contained the demographic profile sheet, Commute Stress Questionnaire, Lifestyle Behaviour Questionnaire, and Psychological Well-Being questionnaire. Upon completion, responses were

audited for missing data and imported into statistical software for inferential analysis.

5.5 Ethical Considerations

Ethical principles are strictly followed throughout the study. Participation in the study is voluntary, and respondent's identities remain confidential. The collected data are used solely for research purposes.

5.6 Statistical Analysis

Data analysis was performed using IBM SPSS Statistics, utilising both descriptive and inferential statistical methods. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarise sample demographics and social media usage patterns. To test group differences, independent-samples t-tests evaluated variation across gender, while one-way Analyses of Variance (ANOVA) compared commute stress, lifestyle, and psychological well-being across age groups, occupational categories, and transit modes. Pearson product-moment correlation coefficients (r) were computed to assess the relationships and directional associations between commute stress, daily commute duration, lifestyle patterns, and psychological well-being.

6. Results and Discussion

Table 1: Demographic data of the sample (N=109)

Variable	Category	n	Percentage
Age	18–25 years	15	13.8
	26–35 years	23	21.1
	36–45 years	36	33.0
	46–55 years	22	20.2
	Above 55 years	13	11.9
Gender	Female	38	34.9
	Male	71	65.1
Occupation	Student	12	11.0
	Private employee	76	69.7
	Government employee	8	7.3
	Self-employed	7	6.4
	Others	6	5.5
Mode of commute	Two-wheeler	22	20.2
	Car	44	40.4
	Bus	14	12.8
	Metro	2	1.8
	Cab/Taxi	25	22.9
	Others	2	1.8
Average daily commute	1–2 hours	106	97.2
	More than 3 hours	3	2.8
Total		109	100.0

Table 1 represents a total of 109 participants who participated in the present study. The sample was predominantly male (65.1%) and comprised mostly private-sector employees (69.7%), with cars (40.4%) and two-wheelers (20.2%) being the primary transit choices. Over 97% reported commuting 1–2 hours daily. While this composition reflects typical urban employment demographics in Bangalore, the unequal distributions- particularly low representations in metro transit (1.8%) and government roles (7.3%)- warrant caution when interpreting subgroup comparisons due to lower statistical power in smaller categories.

Table 2: Descriptive Statistics for the Commute stress, Lifestyle and Psychological well-being (N=109)

Variable	N	M	SD	Minimum	Maximum
Commute stress	109	36.93	6.45	17	50
Lifestyle	109	38.00	6.96	10	50
Psychological well-being	109	29.94	4.82	16	44

Table 2 summarises the preliminary screening and demographic profile of the participants ($N = 109$), revealing moderate levels of commute stress ($M = 36.93$, $SD = 6.45$) and lifestyle disruption ($M = 38.00$, $SD = 6.96$), paired with moderate psychological well-being ($M = 29.94$, $SD = 4.82$). Standard deviations show substantial individual variation across participants. These descriptive baselines confirm that daily commuting demands are a notable daily strain for urban adults, establishing a foundation for inferential comparative and correlational testing.

Table 3: Independent-samples t-test comparing Commute Stress, Lifestyle, and Psychological Well-Being by Gender (N=109)

Variable	Female (n = 38) M (SD)	Male (n = 71) M (SD)	t	p
Commute stress	36.84 (5.93)	36.97 (6.75)	-0.10	.921
Lifestyle	37.87 (5.70)	38.07 (7.58)	-0.14	.886
Psychological well-being	28.71 (4.77)	30.59 (4.74)	-1.97	.052

Table 3 provides an independent-samples t-test evaluating gender differences no statistically significant differences between men and women for commute stress ($p = .921$), lifestyle ($p = .886$), or psychological well-being ($p = .052$). Well-being approached significance—with females scoring slightly lower ($M = 28.71$) than males ($M = 30.59$). This suggests that within this urban sample, contextual commuting factors like heavy congestion and travel duration impact both genders relatively equally.

Table 4: One-Way ANOVA for Commute Stress, Lifestyle, and Psychological Well-Being Across Age Groups (N=109)

Dependent variable	SS Between	SS Within	df	F	p
Commute stress	479.97	4,013.44	4, 104	3.11	.030
Lifestyle	659.00	4,567.00	4, 104	3.75	.007
Psychological well-being	116.67	2,387.88	4, 104	1.27	.285

Table 4 represents one-way ANOVA showed statistically significant age-group differences for commute stress ($F(4, 104) = 3.11$, $p = .030$) and lifestyle disruption ($F(4, 104) = 3.75$, $p = .007$), but not for psychological well-being ($p = .285$). These differences likely stem from changing life-stage responsibilities, family commitments, and work schedules across adulthood. However, well-being remained consistent across age groups, indicating that broader protective factors such as social support and coping mechanisms may buffer overall psychological health.

Table 5: One-Way ANOVA for Commute Stress, Lifestyle, and Psychological Well-Being Across Occupational Groups (N=109)

Dependent variable	SS Between	SS Within	df	F	p
Commute stress	245.878	4,247.534	4, 104	1.505	.206
Lifestyle	260.468	4,965.532	4, 104	1.364	.252
Psychological well-being	56.220	2,448.331	4, 104	0.597	.666

Table 5 represents one-way ANOVA, which showed no statistically significant differences in commute stress ($p = .206$), lifestyle ($p = .252$), or psychological well-being ($p = .666$). Broad job titles fail to capture individual workplace flexibility, work schedules, or distance travelled. As noted by Wener and Evans (2011), immediate environmental conditions and perceived control during the trip exert a stronger influence on strain than employment category alone.

Table 6: One-Way ANOVA for Commute Stress, Lifestyle, and Psychological Well-Being Across Modes of Commute (N=109)

Dependent variable	SS Between	SS Within	df	F	p
Commute stress	373.56	4,119.85	5,103	1.87	.105
Lifestyle	387.09	4,838.91	5,103	1.65	.153
Psychological well-being	139.90	2,364.65	5,103	1.22	.308

Table 6 represents a one-way ANOVA, which showed no significant differences were observed across the six transit modes for commute stress ($p = .105$), lifestyle ($p = .153$), or psychological well-being ($p = .308$). While prior studies found driving more stressful than active or public transport, the heavy traffic congestion in Bangalore affects all modes. Small sample sizes in public transit categories (e.g., metro) may have also limited the statistical power needed to detect modal differences.

Table 7: Pearson Product-Moment Correlations Among Commute Stress, Lifestyle, Psychological Well-Being, and Average Daily Commute Duration (N=109)

Variable	1	2	3	4
1. Commute stress	—	.865**	-.249**	.246**
2. Lifestyle		—	-.271**	.146
3. Psychological well-being			—	-.056

**. Correlation is significant at the 0.01 level (2-tailed).

Table 7 represents a significant negative correlation with psychological well-being ($r = -.249$, $p = .009$) and a strong positive correlation with lifestyle disruption ($r = .865$, $p < .001$), while daily commute duration significantly correlated with higher commute stress ($r = .246$, $p = .009$). These results align with environmental stress theories, demonstrating that longer travel durations and higher commuting stress directly compromise psychological functioning and disrupt healthy daily living routines.

7. Conclusion

This study demonstrates that commute stress and extended travel durations are significantly linked to psychological well-being and daily lifestyle disruption among urban working adults in Bangalore. While age-related variations influence commute stress and lifestyle patterns, variables such as

gender, broad occupational categories, and modes of transport do not account for significant differences in psychological outcomes, suggesting that immediate travel conditions and daily delays exert a broader, direct impact across demographics. Ultimately, these findings highlight the necessity of integrating psychological and health perspectives into urban transport planning and organizational work policies to mitigate everyday travel stressors and support long-term well-being.

8. Future Scope

Future research should build on these findings by employing longitudinal designs and larger, more representative samples to establish direct causal relationships among commute stress, lifestyle patterns, and psychological well-being. Expanding the scope beyond broad demographic metrics to include fine-grained commuting parameters—such as real-time traffic density, route predictability, travel distance, and perceived environmental control—will yield deeper insights into specific urban transit stressors. Subsequent studies should also investigate mediating and moderating psychological mechanisms, including organizational flexibility (e.g., hybrid work arrangements and flexible hours), individual coping strategies, social support networks, and family caregiving dynamics. Finally, evaluating targeted interventions—such as transit infrastructure upgrades, remote-work policies, and workplace stress-management programs—will offer actionable frameworks for urban planners and employers to effectively mitigate commuter strain.

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Author Profile

Ambika Manjunath is a Psychology Postgraduate Scholar at JAIN University (Deemed-to-be), Bengaluru, India. Her research interests focus on, commute stress, psychological well-being, and lifestyle behaviour in urban settings.