Advanced International Journal for Research (AIJFR)
E-ISSN: 3048-7641 ● Website: www.aijfr.com ● Email: editor@aijfr.com

Impact of Daily Commuting (To and Fro) On Health, Family Sharing, Work Efficiency of Commuters

Ms. Madhuri Vilas Chinchole

B. P. Arts S.M.A. Science and K.K.C. Commerce College, Chalisgaon

Abstract

In this paper we performs simple correspondence analysis to identify impact of daily commuting (Travelling to and fro) on health, family sharing, work efficiency of commuters. We conduct survey for commuters from Jalgaon and Dhule district. In this survey we refer to different age group of commuters. For collecting the data we used a simple random sampling. From this survey we get that train's average waiting is more than bus and also time spend during travel is more than bus's total time during travel. So we conclude that buses are more convenient than train.

Keywords: Simple correspondence analysis, Simple random sampling, Biplots, Inertia

1. Introduction

Daily commuting, a routine activity for a significant portion of the working population, encompasses the travel undertaken to reach a workplace and subsequently return home, and has emerged as a critical area of concern due to its multifaceted impact on the health, family dynamics, and work efficiency of commuters (Urhonen et al., 2016). The number of commuters had been steadily increasing, highlighting its integral role in daily life and personal mobility (Stein et al., 2022). The implications of this daily journey extend far beyond mere transportation, intricately weaving into the physical and psychological well-being of individuals, the equilibrium of family relationships, and the overall productivity within the professional sphere. Studies have revealed a correlation between prolonged commuting durations and various adverse health outcomes, including increased stress levels, cardiovascular issues, and musculoskeletal problems (Schaefer, 2005). The effects of commuting are complex and can be influenced by factors such as the mode of transportation, the distance traveled, and the presence of traffic congestion (Haider et al., 2013). Individuals who opt for private motor vehicles as their primary mode of commuting often report heightened levels of stress, diminished feelings of happiness, and compromised sleep quality (Garrido-Cumbrera et al., 2023). Conversely, those who utilize public transportation or engage in active commuting, such as cycling or walking, may experience improved cardiovascular health and reduced stress levels. It has been suggested that short-distance commuters are more likely to be happy commuters, which in turn makes them more productive (Chairassamee et al., 2024).

The consequences of commuting are not confined to individual well-being but extend to the delicate balance of family life (Sakanishi, 2019). Extended commuting hours can encroach upon the time available for family interactions, shared activities, and essential household responsibilities (Urhonen et al., 2016). This temporal constraint can lead to strained relationships, decreased parental involvement, and an overall decline in family cohesion. The scarcity of time resulting from long commutes can also limit opportunities for pursuing personal interests, hobbies, and social engagements, potentially leading to feelings of isolation and dissatisfaction. The impact of commuting on family dynamics is particularly pronounced for individuals with caregiving responsibilities, as the demands of commuting can exacerbate the challenges of balancing work and family obligations. Furthermore, studies have indicated that the adverse effects of commuting may disproportionately affect women, who often bear a greater share of household and childcare responsibilities (Rüger et al., 2017). An increase in time spent commuting has been linked to less happiness (Nie & Sousa-Poza, 2016).

Work efficiency, a cornerstone of organizational success, is also susceptible to the influence of daily commuting patterns. Long and arduous commutes can result in fatigue, reduced concentration, and decreased cognitive performance, ultimately hindering productivity and increasing the likelihood of errors. The phenomenon of "commuting paradox" suggests that individuals with longer commute times report lower subjective well-being, despite the economic premise that commuting burdens are compensated for in the labor or housing market (Stutzer & Frey, 2008). The stress associated with commuting can also spill over into the workplace, leading to increased absenteeism, presenteeism (reduced productivity while at work), and decreased job satisfaction. Commuting has been linked to diminished productivity, absenteeism, and increased healthcare costs. Moreover, the unpredictable nature of traffic congestion and transportation delays can disrupt work schedules, increase stress levels, and negatively impact time management skills. Commuting time has a negative correlation and a weak or moderate effect on academic performance (Kaushik et al., 2023). The design of urban spaces and transportation systems plays a crucial role in shaping commuting experiences and influencing their impact on work efficiency (Fernando et al., 2013).

Review of Literature

Dr. Dawood Jamil et al. concluded that students with longer commutes experienced significant physical difficulties and higher levels of stress. Additionally, their study established that commuting harms academic performance, as students who commuted for extended periods were shown to have decreased academic performance and less time to study.

K. K. Lakhani's research found that long-distance travel causes physical and mental fatigue, which reduces students' concentration and participation in academic activities. Crowded trains increase stress and discomfort. Furthermore, irregularities in train schedules create difficulties in arriving on time, leading to missed classes, increased anxiety, and disruptions in the learning process.

Kiron Chatterjee et al.'s assessment of the evidence shows that mood is lower during the commute than other daily activities, and stress can be induced by congestion and unpredictability. People who walk or cycle to work are generally more satisfied with their commute than those who travel by car, and especially those who use public transport.

Christian T.'s research indicates that longer daily commuting time is associated with males spending decreased time with their spouse and children, and both males and females spending decreased time with friends.

Materials and method

This study is based on survey. I have collected data from students, teachers, Doctors, government employees, private workers and others. Questionnaire based data from the dhule and jalgaon district.

I have used statistical method Simple Correspondence Analysis. Correspondence Analysis (CA) is an exploratory data technique used to analyze categorical data. Goal of CA is to explain the most inertia or variance in the model. One way to understand dimensions is that they are comparable to a principal component in factor analysis, the association between the categorical variables.

CA uses the chi-Square statistics to measure the distance between points on the biplot.

Results and discussion

Commuting's impact on health, family, and work necessitates awareness and mitigation. The daily grind significantly affects individual well-being, family harmony, and professional effectiveness.

The survey results indicate that the majority of commuters, 39.01%, are graduate-level respondents. This suggests that the commuting population under study is predominantly educated.

Regarding public transportation, a significant proportion of bus commuters (73.27%) reported that the bus frequency is sufficient, while a slightly lower percentage of train commuters (61.73%) expressed satisfaction with the train frequency. Similarly, a majority of bus commuters (63.37%) and train commuters (75.31%) found the available concessions to be sufficient.

In terms of commuter satisfaction, 69.31% of bus commuters and 59.26% of train commuters reported being satisfied with the overall bus service.

The data also reveals insights into the commuters' health and sleep patterns. Most commuters do not appear to experience severe negative health consequences due to their commuting routines. However, a notable percentage (4.95%) reported getting 5 hours or less of sleep per day, which could potentially impact their well-being.

The commuters' family life is also affected by their commuting habits. A significant majority (76.92%) spend 5 hours or less per day with their families, and a substantial proportion of both bus (61.39%) and train (65.43%) commuters indicated difficulties in completing their family responsibilities.

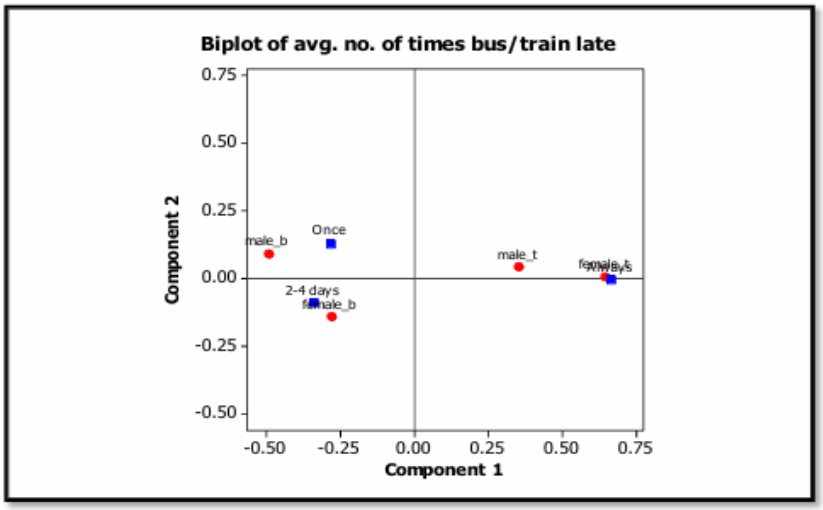
Overall, the results highlight the multifaceted impact of daily commuting on the physical, mental, and social well-being of individuals, as well as the challenges faced in balancing work and family commitments.

Statistical Analysis

- **Distribution of Gender & Avg. no. of time Bus/Train late:**

No. of time bus/train late	Bus commuters			Train commuters		
	Male	Female	Total	Male	Female	Total
Once	23	13	36	10	7	17
2-4 days	27	24	51	11	8	19
Always	5	9	14	20	25	45
Total	55	46	101	41	40	81

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.346	34.57	Once	0.13	13
Female_b	0.115	11.49	2-4 days	0.22	22
Male_t	0.128	12.79	Always	0.65	65
Female_t	0.412	41.16	Total	1	100
Total	1.001	100			



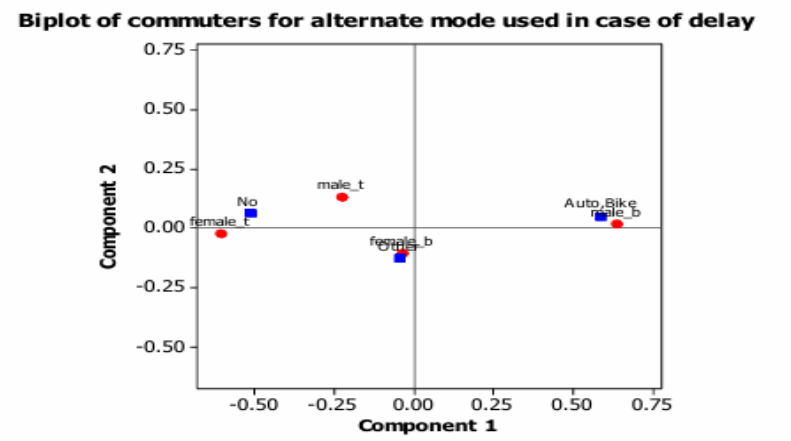
Conclusion:

- Male bus commuters found to report the late arrival of bus once in a week.
- Female bus commuters found to report the late arrival of bus 2-4 days in week.
- Male & Female train commuters found to report the late arrival of train always in week.

- **In case of delay what alternate mode respondents use:**

Alternate mode used by commuters	Bus commuters			Train commuters		
	Male	Female	Total	Male	Female	Total
Auto	12	10	22	0	0	0
Bike	22	4	26	11	3	14
Other	15	16	31	10	13	23
No	6	16	22	20	24	44
Total	55	46	101	41	40	81

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.553	55.30	Auto, Bike	0.534	53.4
Female_b	0.015	1.50	Other	0.025	2.5
Male_t	0.069	6.90	No	0.441	44.1
Female_t	0.363	36.30	Total	1	100
Total	1	100.00			



Conclusion:

- Male and female train commuters do not use any alternate mode in case of delay.
- Female bus commuters use other alternate mode in case of delay.
- Male bus commuters use auto and bike in case of delay.

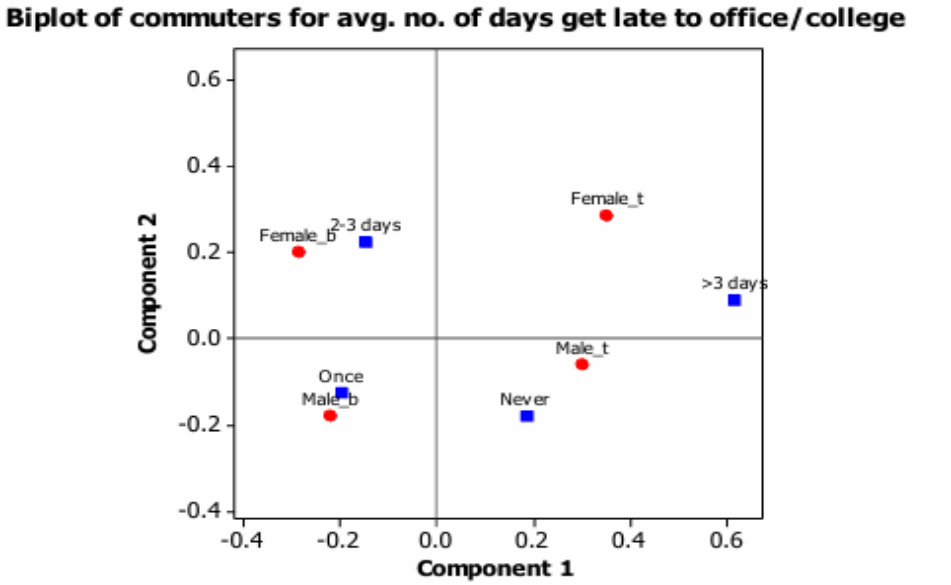
➢ **Average no. of days Respondents are late to workplace/college in a week:**

Avg. no. of days late in week	Bus commuters		
	Male	Female	Total
Never	11	5	16
Once	26	18	44
2-3days	15	20	35
>3 days	3	3	6
Total	55	46	101

Avg. no. of days late in week	Train commuters		
	Male	Female	Total
Never	8	10	18
Once	12	12	24
2-3days	15	14	29
>3 days	6	4	10
Total	41	40	81

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.227	22.68	Never	0.12	12
Female_b	0.286	28.57	Once	0.189	18.9
Male_t	0.315	31.47	2-3 days	0.206	20.6
Female_t	0.173	17.28	>3 days	0.485	48.5
Total	1.001	100.00	Total	1	100

Biplot of commuters for avg. no. of days get late to office/college



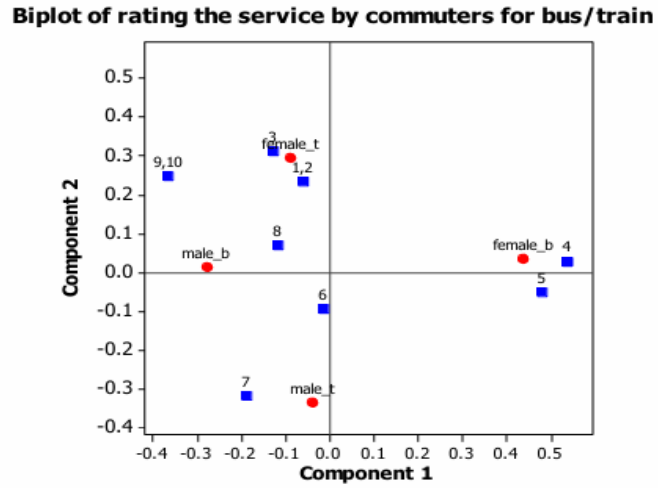
Conclusion:

- Female bus commuters found to report the 2-3 days in week get late to office/college.
- Male bus commuters found to report the once in week get late to office/college.

➢ **Rating the Bus/Train service on 10 point scale:**

Respondents gender	Bus commuters										Total	Train commuters										Total
	1	2	3	4	5	6	7	8	9	10		1	2	3	4	5	6	7	8	9	10	
Male	1	3	8	2	3	9	13	12	4	0	55	1	1	3	5	3	7	14	5	1	1	41
Female	0	3	5	10	7	7	6	7	1	0	46	0	4	8	5	2	5	6	6	4	0	40

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.214	21.40	1,2	0.033	3.30
Female_b	0.384	38.40	3	0.115	11.49
Male_t	0.215	21.50	4	0.285	28.47
Female_t	0.187	18.70	5	0.159	15.88
Total	1	100	6	0.014	1.40
			7	0.231	23.08
			8	0.063	6.29
			9,10	0.101	10.09
			Total	1.001	100



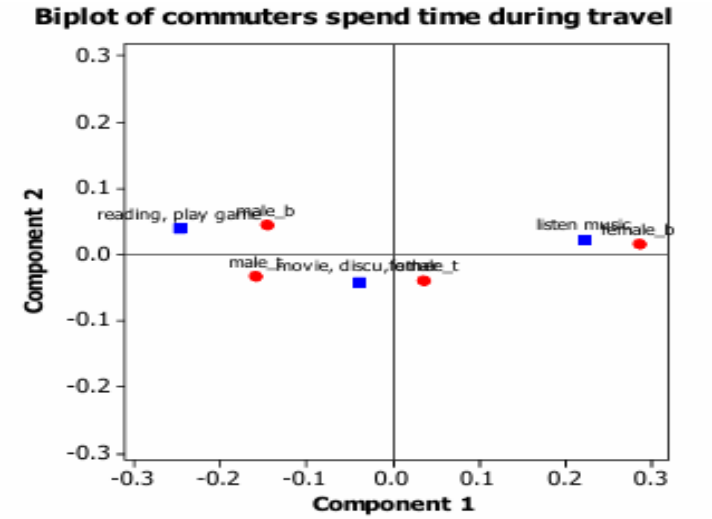
Conclusion:

- Male bus commuters give rank 9 or 10 to the bus service.
- Female bus commuters give rank 4 to the bus service.
- Male train commuters give rank 7 to the train service.
- Female train commuters give rank 1 or 2 or 3 to the bus service.

➢ **Distribution of spending Time during travel of Respondents with Gender & Mode:**

Spending objects during travel	Bus commuters			Train commuters		
	Male	Female	Total	Male	Female	Total
Listen music	16	21	37	11	14	25
Reading	12	7	19	4	6	10
Play game	5	0	5	8	3	11
Movie	1	1	2	0	2	2
Discussion	18	13	31	15	15	30
Other	3	4	7	3	0	3
Total	55	46	101	41	40	81

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.203	20.3	Listen music	0.508	50.8
Female_b	0.602	60.2	Reading, Play game	0.454	45.4
Male_t	0.175	17.5	Movie, Discussion, Other	0.038	3.8
Female_t	0.02	2	Total	1	100
Total	1	100			



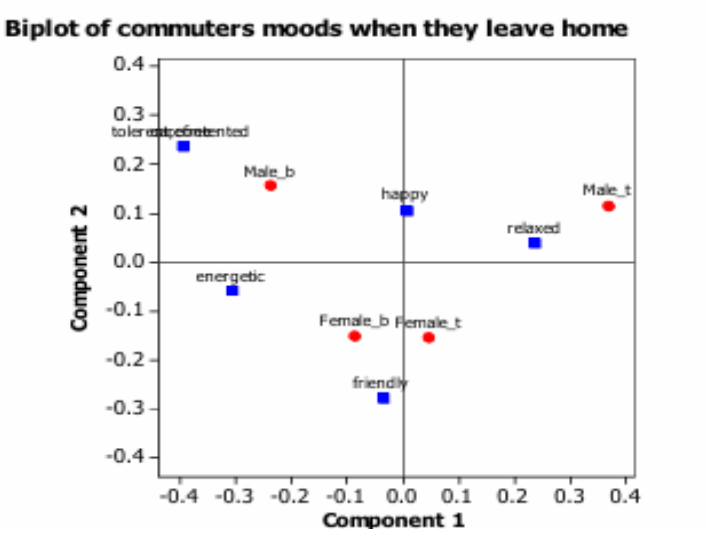
Conclusion:

- Male buses commuters read a book or play game in mobile during travel. In this way they sped time during travel.
- Female buses commuters‟ listened music during travel.

➢ **Distribution of Respondents mood when they leave home:**

	Mood	Bus commuters			Train commuters		
		Male	Female	Total	Male	Female	Total
1	Relaxed	16	16	32	22	14	36
2	Friendly	7	10	17	5	9	14
3	Happy	13	7	20	9	9	18
4	Energetic	11	9	20	3	6	9
5	Carefree	4	2	6	1	1	2
6	Tolerant	2	2	4	1	0	1
7	Contented	2	0	2	0	1	1
	Total	55	46	101	41	40	81

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.322	32.17	Relaxed	0.294	29.4
Female_b	0.128	12.79	Friendly	0.178	17.8
Male_t	0.443	44.26	Happy	0.071	7.1
Female_t	0.108	10.79	Energetic	0.209	20.9
Total	1.001	100	Carefree	0.124	12.4
			Tolerant, Contented	0.124	12.4
			Total	1	100



Conclusion:

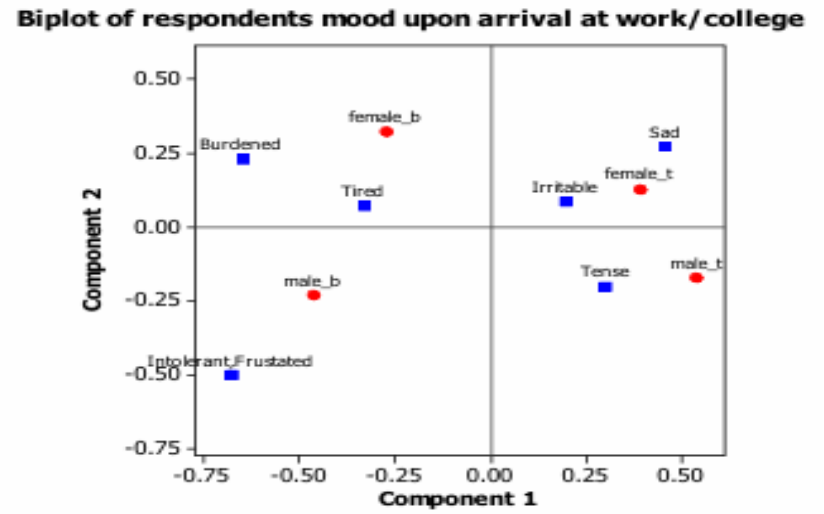
- Male bus commuter's found to report that their mood is carefree, tolerant and contented when they leave home.
- Female bus commuter's found to report that their mood is friendly when they leave home.

- Male Train commuter's found to report that their mood is relaxed when they leave home.

➢ **Distribution of Respondents mood when they reach to office/college:**

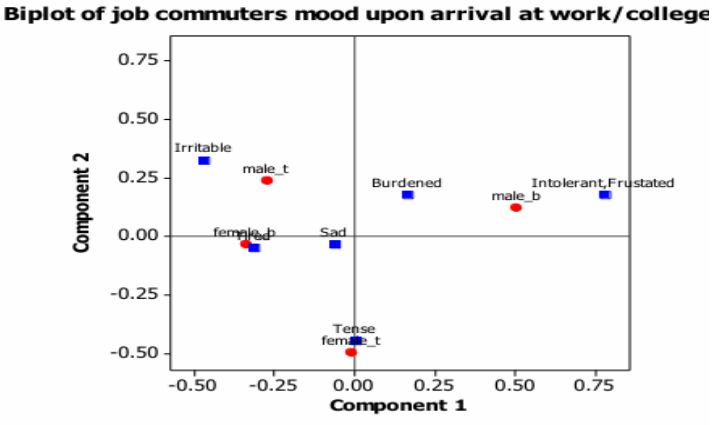
	Mood	Bus commuters			Train commuters		
		Male	Female	Total	Male	Female	Total
1	Tense	15	9	24	22	13	35
2	Irritable	6	5	11	5	9	14
3	Sad	2	8	10	9	10	19
4	Tired	11	9	20	3	5	8
5	Burdened	12	13	25	1	2	3
6	Intolerant	4	0	4	1	0	1
7	Frustrated	5	2	7	0	1	1
	Total	55	46	101	41	40	81

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.32	32.00	Tense	0.184	18.42
Female_b	0.188	18.80	Irritable	0.063	6.31
Male_t	0.307	30.70	Sad	0.179	17.92
Female_t	0.185	18.50	Tired	0.07	7.01
Total	1	100.00	Burdened	0.297	29.73
			Intolerant, Frustrated	0.206	20.62
			Total	0.999	100.00



Conclusion:

- Here we cannot get good interpretation from this biplot, so we draw new biplot who is only for those commuters who are doing job. It is given below:



Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.375	37.50	Tense	0.224	22.40
Female_b	0.149	14.90	Irritable	0.257	25.70
Male_t	0.219	21.90	Sad	0.013	1.30
Female_t	0.257	25.70	Tired	0.069	6.90
Total	1	100	Burdened	0.107	10.70
			Intolerant, Frustrated	0.33	33.00
			Total	1	100

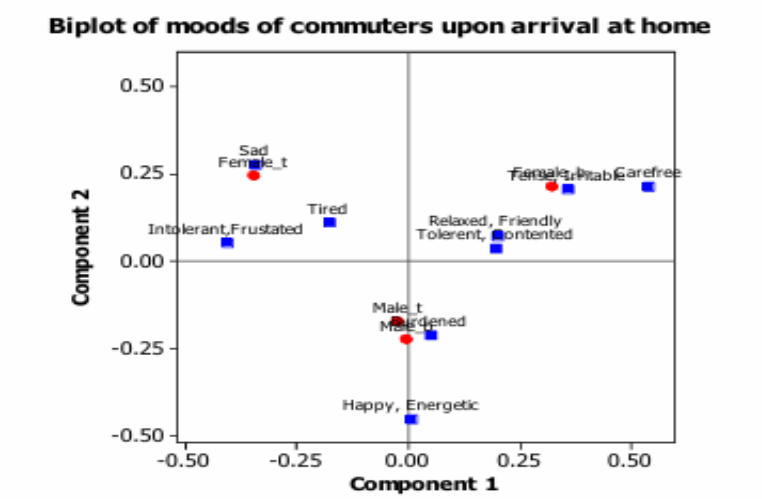
Conclusion:

- Male bus commuters who are doing job found to report that their mood is intolerant and frustrated upon arrival at work/college.
- Female bus commuters who are doing job found to report that their mood is tired upon arrival at work/college.
- Male train commuters who are doing job found to report that their mood is irritable upon arrival at work/college.
- Female train commuters who are doing job found to report that their mood is tense upon arrival at work/college.

➢ **Distribution of Respondents mood upon arrival at home after office/college time:**

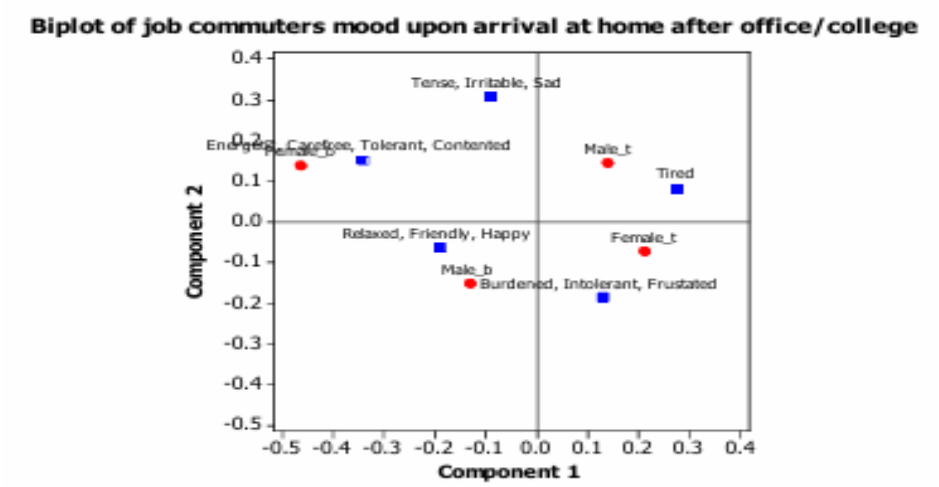
	Name	Bus			Train		
		Male	Female	Total	Male	Female	Total
-1	Tense	0	2	2	2	1	3
-2	Irritable	1	1	2	0	0	0
-3	Sad	1	1	2	1	2	3
-4	Tired	18	15	33	15	21	36
-5	Burdened	4	3	7	5	2	7
-6	Intolerant	3	1	4	1	3	4
-7	Frustrated	0	0	0	0	0	0
1	Relaxed	10	7	17	3	5	8
2	Friendly	0	5	5	4	1	5
3	Happy	12	4	16	6	3	9
4	Energetic	1	0	1	2	0	2
5	Carefree	3	5	8	1	1	2
6	Tolerant	2	1	3	0	0	0
7	Contented	0	1	1	1	1	2
	Total	55	46	101	41	40	81

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.183	18.30	Tense, Irritable	0.084	8.41
Female_b	0.332	33.20	Sad	0.047	4.70
Male_t	0.141	14.10	Tired	0.144	14.41
Female_t	0.344	34.40	Burdened	0.075	7.51
Total	1	100	Intolerant, Frustrated	0.091	9.11
			Relaxed, Friendly	0.078	7.81
			Happy, Energetic	0.282	28.23
			Carefree	0.182	18.22
			Tolerant, Contented	0.016	1.60
			Total	0.999	100



Conclusion

- 0.50 Here we cannot get good interpretation from this biplot, so we draw new biplot who is only for those commuters who are doing job. It is given below:



Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.178	17.80	Tense, Irritable, Sad	0.078	7.81
Female_b	0.431	43.10	Tired	0.344	34.43
Male_t	0.187	18.70	Burdened, Intolerant, Frustrated	0.146	14.61
Female_t	0.204	20.40	Relaxed, Friendly, Happy	0.218	21.82
Total	1	100	Energetic, Carefree, Tolerant, Contented	0.213	21.32
			Total	0.999	100

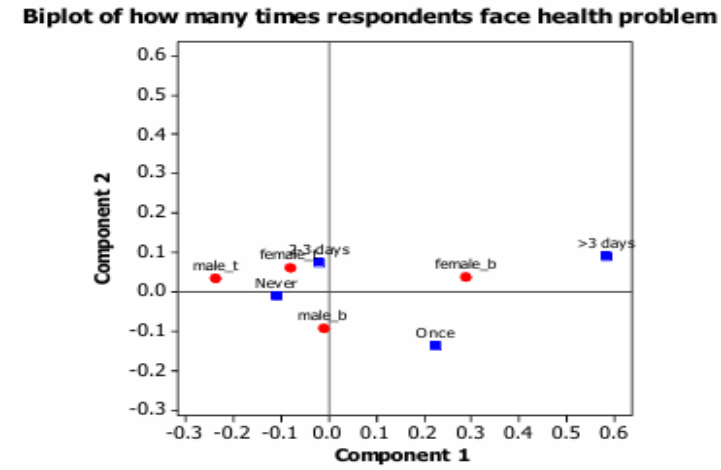
Conclusion:

- Some Female bus commuters who are doing job found to report that their mood is Energetic, carefree, tolerant and contented upon arrival at home after office/college.
- Male train commuters who are doing job found to report that their mood is tired upon arrival at home after office/college.
- Female train commuters who are doing job found to report that their mood is burdened, intolerant and frustrated upon arrival at home after office/college.

➢ **Distribution of how many times Respondents face health problems in week:**

	Bus commuters			Train commuters			Grand Total
	Male	Female	Total	Male	Female	Total	
Never	32	22	54	27	23	50	104
Once	8	7	15	3	4	7	22
2-3 days	12	11	23	10	11	21	44
>3 days	3	6	9	1	2	3	12
Total	55	46	101	41	40	81	182

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.071	7.10	Never	0.17	17.02
Female_b	0.54	54.00	Once	0.212	21.22
Male_t	0.324	32.40	2-3 days	0.042	4.20
Female_t	0.065	6.50	>3 days	0.575	57.56
Total	1	100	Total	0.999	100



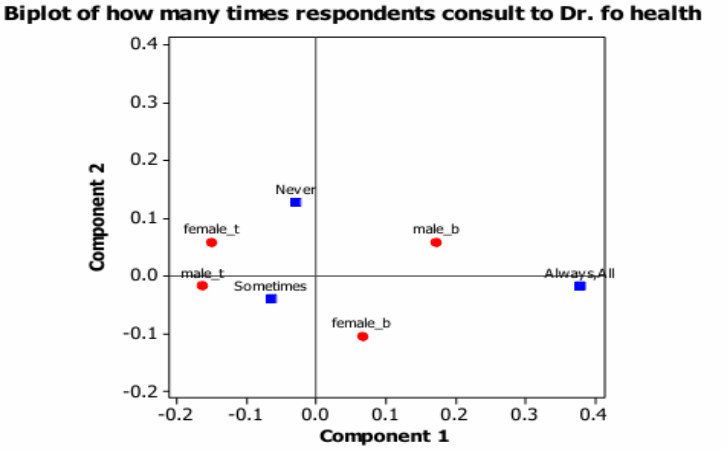
Conclusion:

- By observing above biplot we only conclude that, Female bus commuters faced health problems greater than 3 days in a week.

➢ **Distribution of how many times Respondents consult doctor for health problems**

Respondents consult doctor for health	Bus commuters			Train commuters			Grand Total
	Male	Female	Total	Male	Female	Total	
Never	13	8	21	9	10	19	40
Sometimes	32	31	63	29	27	56	119
Always	10	5	15	3	3	6	21
All	0	2	2	0	0	0	2
Total	55	46	101	41	40	81	182

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.394	39.40	Never	0.17	17.02
Female_b	0.152	15.20	Sometimes	0.143	14.31
Male_t	0.235	23.50	Always, All	0.712	71.27
Female_t	0.22	22.00	Total	1.025	102.60
Total	1.001	100.10			



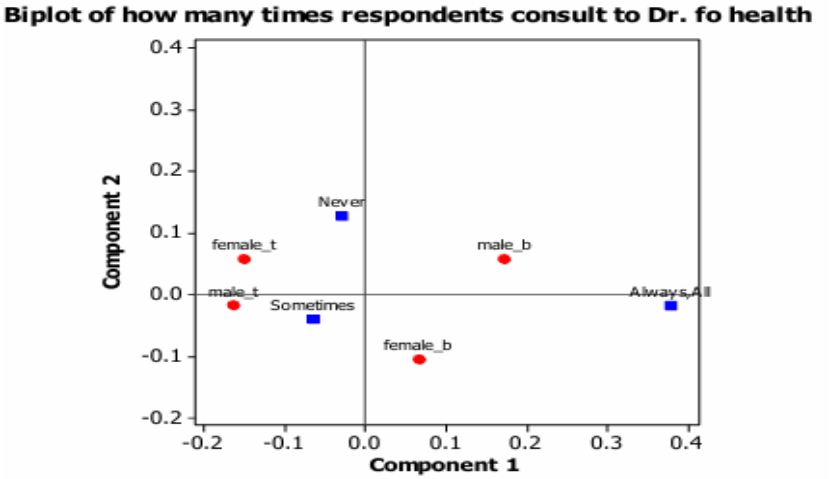
Conclusion:

- From above biplot we only conclude that male train commuters consult to doctor sometimes.

➢ **Distribution of how many times Respondents consult doctor for health problems**

Respondents consult doctor for health	Bus commuters			Train commuters			Grand Total
	Male	Female	Total	Male	Female	Total	
Never	13	8	21	9	10	19	40
Sometimes	32	31	63	29	27	56	119
Always	10	5	15	3	3	6	21
All	0	2	2	0	0	0	2
Total	55	46	101	41	40	81	182

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.394	39.40	Never	0.17	17.02
Female_b	0.152	15.20	Sometimes	0.143	14.31
Male_t	0.235	23.50	Always, All	0.712	71.27
Female_t	0.22	22.00	Total	1.025	102.60
Total	1.001	100.10			



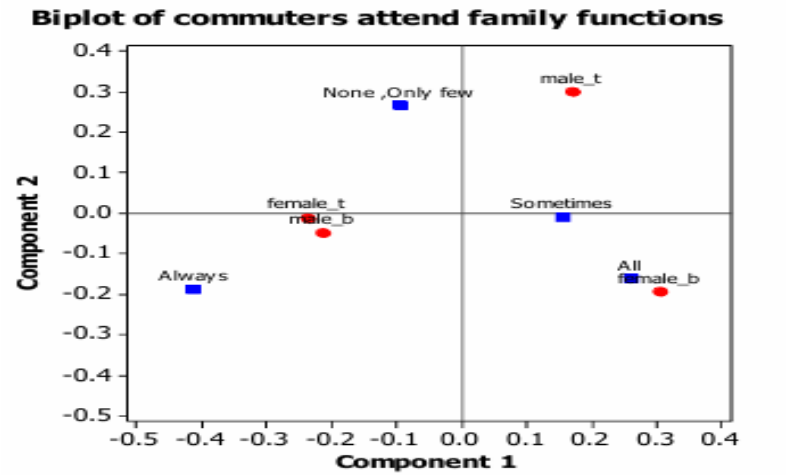
Conclusion:

- From above biplot we only conclude that male train commuters consult to doctor sometimes.

➢ **Family functions Respondents attend with family**

Family functions Respondent attend	Bus commuters			Train commuters		
	Male	Female	Total	Male	Female	Total
None	0	2	2	1	2	3
Only few	15	5	20	14	9	23
Sometimes	16	20	36	16	13	29
Always	15	6	21	3	11	14
All	9	13	22	7	5	12
Total	55	46	101	41	40	81

Row contribution			Column contribution		
Name	Inertia	% inertia	Name	Inertia	% inertia
Male_b	0.168	16.82	None ,Only few	0.239	23.9
Female_b	0.382	38.24	Sometimes	0.106	10.6
Male_t	0.301	30.13	Always	0.45	45
Female_t	0.148	14.81	All	0.205	20.5
Total	0.999	100	Total	1	100



Conclusion:

- From above biplot we conclude that, male bus commuters found to report that they always attend family functions.
- Female bus commuters found to report that they attend all family functions.

Final Conclusion:

So from above conclusions we report that train's average waiting is more than bus, and also time spend during travel is more than bus's total time during travel. So we conclude that buses are more convenient than train.

References

1. Dr. Dawood Jamil, Dr. Mohammed Rayyan, Dr. Ahmed khalifa Abdulla Hameed, Dr. Fatima Masood, Dr. Palwasha Javed & Anusha sreejith (2022) The impact of commute on student's performance ISSN 2710-1452.
2. Keertida Kantilal Lakhani (2024) Local train commuting impacts students academic outcomes ISSN 2348-5396 (online) ISSN 2349-3429 (Print).
3. Kiron Chatterjee, Samuel Chng, Ben Clark, Adrian Davis, Jonas De Vos, Dick Ettema, Susan Handy, Adan Martin & Louise Reardon
4. Christian, T. (2012). Automobile commuting duration & the quantity of time spent with spouse, children & friends Med prev. 55 215-218.
5. Garson, D. (2008). Corresponding Analysis.
6. Chairassamee, N., Chancharoenchai, K., & Saraithong, W. (2024). Getting there: How commuting time and distance impact students' health. PLoS ONE, 19(12). https://doi.org/10.1371/journal.pone.0314687
7. Fernando, B., Gray, E., & Kellner, J. (2013). A review of current traffic congestion management in the City of Sydney [Review of A review of current traffic congestion management in the City of Sydney]. https://trid.trb.org/view/1265289

8. Garrido-Cumbrera, M., Braçe, O., Ruíz, D. G., Lara, E. L., & Correa-Fernández, J. (2023). Can the mode, time, and expense of commuting to work affect our mental health? Transportation Research Interdisciplinary Perspectives, 21, 100850. https://doi.org/10.1016/j.trip.2023.100850
9. Haider, M., Kerr, K. D., & Badami, M. G. (2013). Does Commuting Cause Stress? The Public Health Implications of Traffic Congestion. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2305010
10. Kaushik, A., Rai, S., Thakur, G., & Kumar, P. (2023). Effect of commuting on the academic performance of students in higher technical education and their physical and emotional state. Innovations in Education and Teaching International, 61(4), 691. https://doi.org/10.1080/14703297.2023.2216677
11. Nie, P., & Sousa-Poza, A. (2016). Commute time and subjective well-being in urban China. China Economic Review, 48, 188. https://doi.org/10.1016/j.chieco.2016.03.002
12. Rüger, H., Pfaff, S., Weishaar, H., & Wiernik, B. M. (2017). Does perceived stress mediate the relationship between commuting and health-related quality of life? Transportation Research Part F Traffic Psychology and Behaviour, 50, 100. https://doi.org/10.1016/j.trf.2017.07.005
13. Sakanishi, A. (2019). Urban commuting behavior and time allocation among women: Evidence from US metropolitan areas. Regional Science Policy & Practice, 12(2), 349. https://doi.org/10.1111/rsp3.12261
14. Schaefer, A. (2005). Commuting Takes Its Toll. Scientific American Mind, 16(3), 14. https://doi.org/10.1038/scientificamericanmind1005-14
15. Stein, M., Nitschke, L., Trost, L., Dirschauer, A., & Deffner, J. (2022). Impacts of Commuting Practices on Social Sustainability and Sustainable Mobility. Sustainability, 14(8), 4469. https://doi.org/10.3390/su14084469
16. Stutzer, A., & Frey, B. S. (2008). Stress that Doesn't Pay: The Commuting Paradox*. Scandinavian Journal of Economics, 110(2), 339. https://doi.org/10.1111/j.1467-9442.2008.00542.x
17. Urhonen, T., Lie, A., & Aamodt, G. (2016). Associations between long commutes and subjective health complaints among railway workers in Norway. Preventive Medicine Reports, 4, 490. https://doi.org/10.1016/j.pmedr.2016.09.001