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Impact of Terrorism on Tourism in India

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Abstract

This present study empirically examines the impact of terrorism activities on inbound tourism and foreign exchange earnings from tourism in India using annual data covering period 1980-2011. The empirical estimates based on an ARDL approach show that, there exists an inverse relation between terrorism activity and foreign tourist arrival in India. Similarly, there exists a positive relationship between economic development (proxied by per capita income) and tourist arrival in India. For robustness check we have included physical development indicators such as fixed telephone subscriptions (per 100 people) and railway line (total route-km). Railway infrastructure shows a positive and significant impact on foreign tourist arrivals and foreign exchange earnings in India.The findings of the study suggest that, Government should invest more in the tourism sector, which would help in generating more employment and foreign exchange earnings. Further, the empirical results also suggest that the measures adopted by the Government of India such as bringing 150 countries under the ambit of Visa-On-Arrival as well as increasing FDI in the sector will go a long way in stepping up inbound tourist arrivals and consequently boosting foreign exchange earnings as well. Additionally, the Government must also work to improve the tourism infrastructure and provide a greater sense of security for tourists, particularly women, among other things.

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Abstract

This present study empirically examines the impact of terrorism activities on inbound tourism and foreign exchange earnings from tourism in India using annual data covering period 1980-2011. Using Auto-Regressive Distributed Lag (ARDL) model, we find that there is a long-run relationship among variables such as foreign tourist arrival, foreign exchange earnings and terrorism in India. The long-run coefficients based on ARDL approach show that, there exists inverse relation between terrorism activity and foreign tourist arrival in India. Similarly, there exists positive relationship between economic development (proxied by per capita income) and tourist arrival in India. The findings of the study suggest that, Government should invest more in tourism sector, which would help in generating more employment and foreign exchange earnings. Further, the empirical results also suggest that the measures adopted by Government of India such as bringing 180 countries under the ambit of Visa-On-Arrival as well as increasing FDI in the sector will go a long way in stepping up inbound tourist arrivals and consequently boosting foreign exchange earnings as well. Additionally, Government must also work to improve the tourism infrastructure and provide a greater sense of security to tourists, particularly women, among other things.

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1.Introduction

Tourism has emerged as an important sector due to the significant developmental impact it has on the economy in terms of rise in income and employment, foreign exchange earnings and the improvement in infrastructure that it entails. As a result, Governments all over the world are paying attention to developing this all-important sector. The United Nations World Tourism Organization (UNWTO) in its vision statement has predicted global annual tourism expenditure to hit US$2 trillion and the number of foreign tourists to reach 1.5 billion by 2020 (Alsarayreh et al 2010). However, the growth of the tourism industry has not been smooth. The economic factors such as variations in demand or growing transport costs due to changes in the international price of oil have slowed down the growth of the tourism sector. Apart from these economic forces, other political tensions created due to wars and terrorism has also contributed to declining the prospects of tourism industry.

In India, the tourism sector has witnessed significant growth in recent years. Tourism sector can also be considered as the backbone for allied sectors, such as hospitality, civil aviation, and transport. According to a report by the World Travel and Tourism Council, (WTTC) released in March 2015, tourism sector in India is expected to rise by 6.5 per cent per annum over the next 10 years to Rs 4,337.8 billion and has the potential to contribute 46 million jobs to the India economy by 2025. Growth of the sector is being largely driven by an increase in inbound tourists from abroad. Better connectivity with the world, numerous destinations spread across the country and stable political and economic environments are some of the key reasons that can attract foreign tourists.

During the period 2000 to 2014, the compound annual growth rate (CAGR) of foreign tourist arrivals (FTA) and foreign exchange earnings (FEE) from tourism (in rupee terms) stood at 7.9 per cent and 15.7 per cent respectively. The year 2014 witnessed a growth of 10.6 per cent in FTAs in India, which is higher than the medium growth rate of 4.7 per cent witnessed in international tourist arrivals globally. FTA's during 2014 stood at 77.03 lakh as compared to FTAs of 69.68 lakh during 2013 (see figure 1 in appendix). The foreign exchange earnings from tourism in rupee terms during 2014 stood at Rs 1200 billion recording a growth of 11.5 per cent over the previous year (see figure 2 in appendix).

However, terrorist activities have time and again threatened to disrupt the flow of tourist arrivals in the country. India in the past has faced many terrorist attacks - the 26th November, 2008 being the most recent and brutal one in which many lives were lost. There was a 3.3 per cent drop in foreign tourist arrivals in 2009 from the previous year (Minister of State of Tourism in a reply to question in Lok Sabha). Additionally, as a result of these attacks, India was figured in the Global Lists as an unsafe country to visit. Though, after 26/11 attacks, any major terrorist act was prevented in the country, but sporadic terrorist activities have continued.

Foreign tourist flow into a country is also determined by the nature of its visa policies in place. In this context, the moot question which arises is that have the changes in visa policy of the Indian Government over the years impacted tourist flow into the country. For example, in November 2009, Government of India had imposed restrictions on tourist visas which had mandated a two-month gap between consecutive visits by foreign nationals. This was done in the

aftermath of the Mumbai terror attacks of 2008. However, this restriction was eased three years later (with an exception of a few countries) after concerns were raised by the tourism ministry that the move had affected flow of tourists to India. Indeed, the data for flow of foreign tourist arrival during the three years (2010-2012) when this restrictive visa policy was in place shows that the increase in foreign tourist arrivals had slowed down to an average 6 per cent in this period as compared to a healthy average of over 10 per cent in the three years before the period when the visa rules were changed. Similarly, ever since the introduction of tourist visa-on-arrival scheme for citizens of some select countries since January 1, 2010, foreign tourist arrivals have jumped by a staggering 33 per cent till 2014.

In a significant move to boost tourism in the country, Government of India plans to extend Visa-On-Arrival facility to residents of 150 countries by end of March-2015. This move is expected to have a significant positive impact on tourist flows in the years to come. Thus, there is clear link between visa policies adopted by India and the consequent foreign tourist arrival.

Globally too, terrorism has time and again threatened to put tourism potential of a country on the back foot. Infact it has emerged as one of the major reasons impacting the tourism industry in a country. However, the literature on terrorism's impact on tourism is still fledgling area. The existing literature so far contains only a few research papers that provide empirical evidence on the impact of terrorism on tourism. In one of the earliest published papers in this area, Enders and Sandler (1991) have provided empirical evidence indicating the existence of a significant relationship between terrorism and tourism in Spain. Using Vector Auto-regression (VAR) methodology of the data of number of foreign tourists visiting Spain and the number of terrorist incidents that took place, the authors found out that terrorism has affected tourism but not the reverse. Enders et al. (1992) have used monthly time-series data for Spain and a sample of European countries from 1974 to 1988 to prove that terrorist incidents have an adverse effect on the revenues obtained from tourism. The authors have found that terrorist activities not only reduced tourism in the targeted countries, but also affected the neighboring countries negatively.

Turkey is a popular country among tourists in the Middle-East. As a result, there have been a few studies which have estimated the impact of terrorism on tourism in the case of Turkey. Yaya (2008) has found that for the period 1985–2006, the impact of terrorism on tourism in Turkey is negative, but the magnitude of reduction of foreign tourist inflow is small. Moreover, the duration of the impact is observed approximately within one year. In another study, Feridun (2011) has investigated the causal impact of terrorist attacks on the tourism industry in Turkey based on the Autoregressive Distributed Lag (ARDL) bounds testing procedure for the period between 1986 and 2006. The study has shown that tourism is in a long-run equilibrium level relationship with terrorism. Further, the evidence obtained from the long-run and short-run parameter estimates have indicated the existence of a negative causal effect of terrorism on tourism.

Drakos and Kutan (2003) have tested the cross-country effects of terrorism on tourist arrivals in the Mediterranean region, and showed that the tourism industry is indeed vulnerable to terrorism. Specifically, their study has revealed three findings: (1) terrorism can cause a significant decline in tourist arrivals to these countries; (2) the intensity of casualties and geographical location of

terrorist incidents can have significant own and spill-over effects on the affected countries; and (3) substitutability between Greece and Turkey as tourism destinations is evident when one of the countries experience a terrorist-related incident.

Llorca-Vivero (2008), using the cross-sectional gravity equation for tourism over the period 2001–2003, showed that domestic incidents and international events affect tourist inflows negatively. The impact of a domestic event is less when compared with an international event. They also found that cost of the terrorist attacks in developing countries in terms of tourist flows is more severe than developed countries.

Sonmez (1998) has warned that persistent terrorism in a country can harm a country's reputation as a safe tourist destination. He has further argued that the media attention surrounding a terrorist attack is usually intense, especially when tourists are among the casualty list. Sonmez and Graefe (1998) have observed that though terrorist events have waned since 1980s, but the lethality has remarkably increased manifolds. Blake and Sinclair (2003) used a Computable General Equilibrium (CGE) model to estimate the impact of 11 September 2001 attacks in the United States on travel and tourism. The authors found out that the impact was severe in terms of loss of income and employment. Their estimate has shown a loss of US$30 billion GDP and more than half a million jobs in the US economy.

Kim et al. (2006) have examined the causal relationship between tourism expansion and economic development in Taiwan. The authors used granger causality test to reveal the direction of causality between economic growth and tourism expansion in Taiwan. Test results indicate a long-run equilibrium relationship and further a bi-directional causality between the two factors. Arunatilake et al. (2001) have estimated the cost of civil war in Sri Lanka for its tourism industry and found that the conflict has resulted in a loss of revenue from tourism among other consequences.

While there exists a reasonable number of studies done globally to examine the causal relationship between terrorism and foreign tourist arrivals, there is a dearth of similar research in the context of Indian economy. A few studies have examined the link between terrorist activities and foreign tourist arrivals in India. There is at present no study which has established the relationship between foreign exchange earnings from tourism & terrorism and the relationship between per capita income (proxy of economic development) & tourism in the context of Indian economy. Bhattacharya and Narayan (2005) have examined the stability of tourist arriving in India from 10 major countries using random walk hypothesis suggested by Augmented Dickey and Fuller (ADF) (1979) and Maddala & Wu (1999) panel unit root tests. Their findings suggest that exogenous shocks (like natural calamities, border tension between India and Pakistan and Gulf war) do not have any permanent effect on visitor arrivals to India. These factors are transitory and will have only short-run effects on the industry.

Given the importance of tourism sector in the Indian economy and the potential negative impact of terror related activities on this sector, the focus of the present paper is to analyze the impact of terror related activities on foreign tourist arrival and foreign exchange earnings in India. The

impact of per capita income (proxy of economic development) has also been analyzed on the tourism related parameters. As a robustness check, impact of two physical development indicators, vis, fixed telephone subscriptions (per 100 people) and railway line (total route-km) has also been conducted. This study is unique in the sense that no study based in India has so far examined the relationship between all these variables taken together. The rest of the paper is organized as follows. Section 2 discusses the data and the methodology used in the analysis. Section 3 discusses the empirical results. Section 4 provides conclusion and policy implications.

Objectives of the Study

The objective of the study is to analyze the impact of terror related activities on foreign tourist arrival and foreign exchange earnings in India. We further estimate the relationship between economic development and tourism. The results of the study are expected to provide significant insights for the policy makers in order to improve the prospects of the tourism sector. The hypotheses of our study are as follows:

Hypothesis 1: Terror related activity adversely affects the foreign tourist arrival and foreign exchange earnings in India.

Hypothesis 2: Economic development (proxied by per capita income) has led to an increase in the foreign tourist arrival and foreign exchange earnings in India.

Section-2
Data and Methodology

The impact of all terror activities on foreign tourist arrival and foreign exchange earnings from tourism in India is analyzed using annual time-series data covering the period from 1980 to 2011. The data has been collected from different sources for parameters such as gross domestic product (GDP), foreign tourist arrival, foreign exchange earnings from tourism, total population and total number of mortalities including numbers of injured in all terror attack data. The source of real and nominal GDP is Central Statistical Organization (CSO), Government of India. Foreign exchange data has been collected from *Hand Book of Statistics on Indian Economy* published by Reserve Bank of India and various volumes of *Economic Survey*. Tourism data has been obtained from various volumes of *India's Tourism Statistics* published by Ministry of Tourism, Government of India. Data on foreign tourist arrival has been collected from the latter source as well. The data related to other development indicators such as fixed telephone subscriptions (per 100 people) and railway line (total route-km) have been collected from *World Development Indicators* of World Bank.

For empirical purpose, we have first normalized the ratio of foreign exchange earnings from tourism to nominal GDP. In addition, since population census in India takes place after every ten years (such as 1981, 1991 and 2001); we have linearly interpolated the total population data for the remaining intervening years. Terror related mortality and injured data are obtained from Global Terrorism Database. The database provides details regarding total number of civilians, security forces and terrorist deaths, including data on injured persons in all terror related events, which have happened in various years in different parts of India. For empirical purpose, we have

also introduced reforms dummy variable, in order to see the impact of reforms on foreign tourist arrival and foreign exchange earnings from tourism. In India, reforms started in the year 1991. For exposition purpose all the variables have been transformed into their natural log form. The summary statistics of all the variables used in the study are mentioned in Table IV in Appendix. The basic variables for empirical analysis in the present study are as follows:

LDEATH = Log of number of deaths and injured persons by all terror activities
LRGDPC = Log of real per capita income (proxy of economic development)
LFTORARV = Log of foreign tourist arrival
LNFEE = Log of ratio of nominal foreign exchange earnings from tourism to nominal GDP
D91= Reform dummy variable (year after 1991=1 and 0 otherwise)
FTS = Fixed telephone subscriptions (per 100 people)
Lrail lines = Railway lines (total route-km)

In the first model, we try to establish the link between terrorist activities and foreign tourist arrival in India. In the second model, we try to explore the impact of terrorist activities on foreign exchange earnings from tourism. For empirical purpose, we have estimated both these models using Auto-regressive Distributed Lag (ARDL) approach. The following models have been estimated for the existence of a long-run relationship among the variables.

$$\Delta LFTORARV_t = \alpha_1 + \beta_1 LDEATH_{t-1} + \beta_2 LRGDPC_{t-1} + \beta_3 D91_t + \sum_{i=1}^{p} \delta_i \Delta LDEATH_{t-1} + \sum_{i=1}^{p} \phi_i \Delta LRGDPC_{t-1} + \sum_{i=1}^{p} \varphi_i \Delta LFTORARV_{t-1} + \varepsilon_{1t}$$

$$\Delta LNFEE_t = \alpha_2 + \beta_1 LDEATH_{t-1} + \beta_2 LRGDPC_{t-1} + \beta_3 D91_t + \sum_{i=1}^{p} \delta_i \Delta LDEATH_{t-1} + \sum_{i=1}^{p} \phi_i \Delta LRGDPC_{t-1} + \sum_{i=1}^{p} \varphi_i \Delta LNFEE_{t-1} + \varepsilon_{2t}$$

where Δ denotes the first difference operator. α_1 and α_2 denote the constants terms, β_1, β_2 and β_3 are the long-run coefficients. δ_i, ϕ_i and φ_i show the short-run dynamics and ε_{1t} and ε_{2t} are white noise errors terms. *P* signifies the maximum lag length. We use Akaike Information Criterion (AIC) to determine the maximum lag length of the models.

Section-3
Empirical Results

We have employed ARDL approach to test the long-run relationship among the variables used in our study. Before testing for cointegration amongst the variables, we have used Augmented Dickey Fuller (ADF) and Phillips Perron (PP) test to check the order of integration of the variables entering our models. The unit roots results are presented in Table III of Appendix. The results of unit root tests suggest that, all the variables except LDEATH are non-stationary in levels but stationary in first difference. The variable LDEATH is stationary only in level. This implies, that the variables in the study are a heady mix of I(1) and I(0). Hence, in this situation, we can apply the ARDL approach to examine the presence of cointegration among the variables. The results of the bounds test approach of cointegration are presented in Table IV of Appendix. The calculated values of F-statistic and W-statistic for both the models are significant at 10 per cent level. Cointegration results reveal that there exists a long-run relationship among the variables in both the models. The long-run coefficients using the ARDL approach are presented

in Table I. In model-1, the estimated coefficient of LDEATH shows that there exists an inverse relationship between mortality rates in terror related events and foreign tourist arrival in India. The results suggest that 1 per cent increase in mortality rate in any terror related events leads to decline in the inbound tourist by 0.044 per cent in India.

Table-I: Estimated Long-Run Coefficients using the ARDL Approach

Variables	**Model 1** ARDL(2,0,2,2) Selected Based on Akaike Information Criterion (AIC)	**Model 2** ARDL(2,0,0,1) Selected Based on Akaike Information Criterion (AIC)
Dependent Variables	LFTORARV	LNFEE
Independent Variables		
LDEATH	-0.044* (-1.786)	-0.102* (-1.743)
LRGDPC	1.297*** (15.888)	0.438*** (3.267)
D91	-0.025 (-0.523)	0.297** (3.062)
INPT	1.781** (2.377)	-13.539** (-11.523)
Ecm(-1)	-0.616*** (-4.867)	-0.570*** (-4.186)

Note: 1. t-statistics are in parentheses.
2. ***, ** and * denotes 1%, 5% and 10% level of significance respectively.

Further, model-1 shows that, there exists a positive relationship between per capita income (proxy of economic development) and foreign tourist arrival in India. The estimated coefficient of log of real per capita income (LRGDPC) is positive and statistically significant at 5 per cent level. It implies that 1 per cent increase in per capita income (proxy of economic development) leads to increase in foreign tourist arrival in India by 1.297 per cent. In other words, in India, tourism and economic development reinforce each other.

The results of model-2 show that while the log of the number of deaths and injured persons by all terror activities (LDEATH) is negatively associated with foreign exchange earnings whereas the per capita income (LRGDPC) has a favorable impact on foreign exchange earnings from inbound tourism in India. The estimated coefficient of LDEATH in the second model is statistically significant at 10 per cent level. The results show that 1 per cent increase in mortality rate due to terror related events lead to a fall of foreign exchange earnings to GDP ratio by 0.102 per cent. Similarly, coefficient of LRGDPC is significant at 5 per cent level. It further shows that 1 per cent increase in per capita income (proxy of economic development) leads to an increase in foreign exchange earnings to GDP ratio by 0.438 per cent. In model-2, coefficient of reform

dummy variable (D91) is positive and significant at 5 per cent level, which implies that reforms in the Indian economy have resulted in a positive and significant impact on foreign exchange earnings from tourism to GDP ratio. The error correction term (Ecm(-1)) in both the models is negative and statistically significant. The diagnostic results have been presented in Table IV of Appendix. The test results show that both the models are robust and consistent. The Ordinary Least Square estimates are shown in Table VII in Appendix for comparison with long-run estimates of ARDL models.

Table-II: Estimated Long-Run Coefficients using the ARDL Approach

Variables	**Model 3** ARDL(1,1,2,2,0) Selected Based on Akaike Information Criterion (AIC)	**Model 4** ARDL(2,0,1,2,1) Selected Based on Akaike Information Criterion (AIC)
Dependent Variables	LFTORARV	LNFEE
Independent Variables		
LDEATH	-0.090* (-1.734)	-0.141** (-2.413)
Lrail Lines (Total route-km)	53.067** (4.736)	16.802** (2.031)
Fixed Telephone Subscriptions (Per 100 people)	0.042 (0.813)	0.78e-3 (0.021)
D91	-0.153 (-1.011)	0.256** (2.088)
INPT	-570.608** (-4.625)	-194.559** (-2.134)
Ecm(-1)	-0.353** (-3.710)	-0.600*** (-4.760)

Note: 1: t-statistics are in parentheses.
2: ***, ** and * denotes 1%, 5% and 10% level of significance respectively.

The robust results using ARDL approach are presented in Table II. In model-3 and model-4, we have studied additional development indicators such as railway lines (Total route-km) and fixed telephone subscriptions (Per 100 people) instead of economic development. We observe a positive and significant impact of railway infrastructure on tourist arrival and foreign exchange earnings from tourism in both the models. The terror related attacks have significantly reduced foreign tourist arrival as well as foreign exchange earnings. The error correction term is negative and statistically significant in both the models.

Section-4
Conclusion & Policy Implications

The present study endeavors to examine the impact of terrorism on tourism in India. The results of the bounds test approach of cointegration reveal that there exists long-run relationship among the variables used in the study. The long-run estimates based on ARDL model show that economic development has a positive impact on both foreign tourist arrival and foreign exchange earnings from tourism in India. On the other hand, terrorist activities have an adverse impact on both foreign tourist arrival and foreign exchange earnings from tourism in India. Reforms in Indian economy have led to positive impact on foreign exchange earnings from tourism. The empirical results suggest that, improving the tourism related infrastructure and stepping up measures to prevent terror incidents in the country have a positive impact on boosting foreign tourist arrivals and foreign exchange earnings from tourism. Thus, amongst other measures, Government should simplify its tourist visa policy further and encourage FDI in the sector, which in turn will boost tourism in the country. There is a lot of scope for further research on tourism in India. As a possible area of research, the impact of crime and foreign direct investment on foreign tourist arrival in India could be examined.

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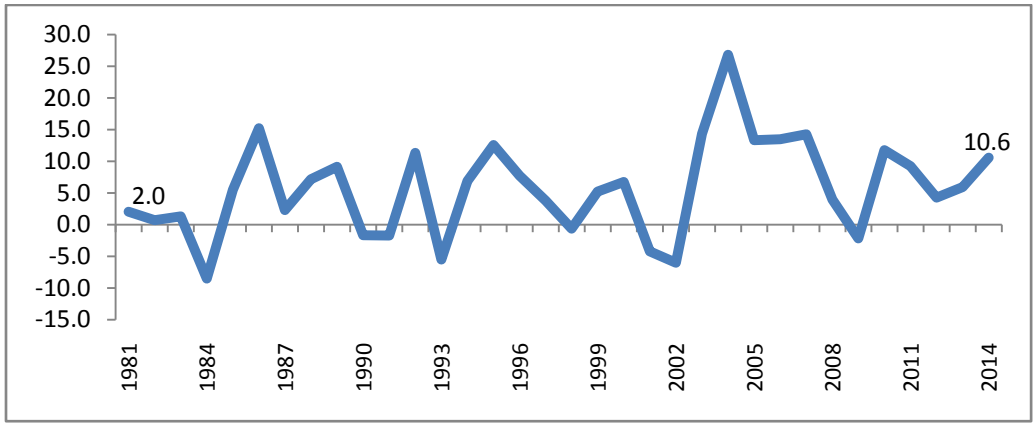
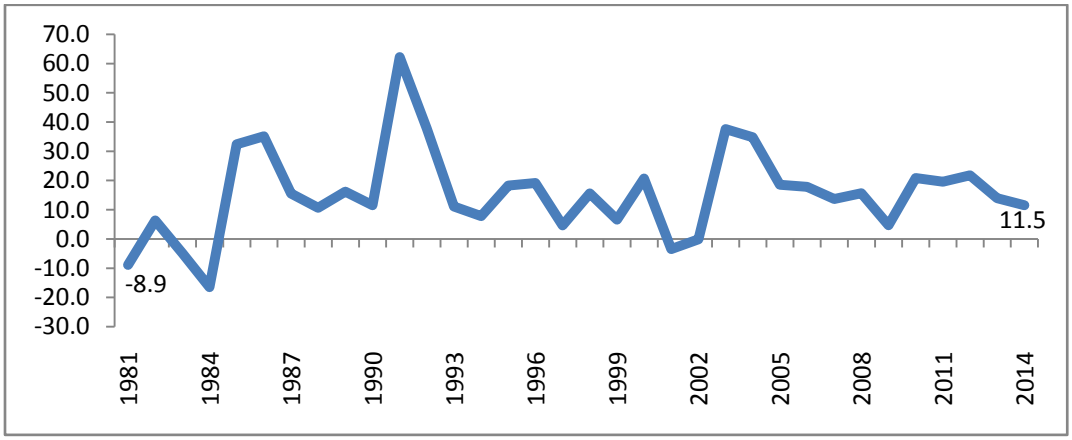
Appendix

Figure 1: Growth in Foreign Tourist Arrivals (FTAs) in India (y-o-y%)



Source: Various Issues of Ministry of Tourism Annual Report & Author's Calculation

Figure 2: Growth in Foreign Exchange Earnings (FEEs) from Tourism in India (y-o-y %)



Source: Various Issues of Ministry of Tourism Annual Report & Author's Calculation

Table-III: Unit Root Test

Variables	ADF Test		PP Test		Decision
	Level	1st Diff.	Level	1st Diff.	
LNFEE	-1.338	-4.192*	-1.533	-7.129*	I(1)
LDEATH	-4.428*	-	-6.533*	-	I(0)
LFTORARV	-1.957	-4.129*	1.371	-4.168*	I(1)
LRGDPC	1.784	-4.201*	5.684	-4.182*	I(1)
FTS (Per 100 people)	-1.201	-3.029*	-0.947	-2.973*	I(1)
Lrail Lines (Total route-km)	-3.436*	-	-3.475*	-	I(0)

Note: * Denotes statistically significant

Table-IV: ARDL Bounds Testing Procedure Tests of Long-Run Relationships

Model Specification	Dependent Variables	F-statistics	90% Lower Bound	90% Upper Bound	W-statistics	90% Lower Bound	90% Upper Bound	Result
Model 1	LFTORARV	7.687	3.0123	4.1752	30.751	12.0492	16.7008	Co integration
Model 2	LNFEE	4.470	3.0123	4.1752	17.880	12.0492	16.7008	Co integration
Model 3	LFTORARV	4.716	3.0123	4.1752	18.864	12.0492	16.7008	Co integration
Model 4	LNFEE	4.623	3.0123	4.1752	18.495	12.0492	16.7008	Co integration

Note: Model 3 and Model 4 included other development variables for robust result.

Table-V: Diagnostic Tests

	Model 1	**Model 2**	**Model 3**	**Model 4**
Dependent Variables	LFTORARV	LNFEE	LFTORARV	LNFEE
Auto. $[\chi^2(1)]$	0.002 (0.958)	0.360 (0.548)	0.232 (0.629)	0.053 (0.817)
Func. $[\chi^2(1)]$	0.061 (0.804)	0.274 (0.600)	0.005 (0.940)	1.842 (0.175)
Norm. $[\chi^2(2)]$	1.366 (0.505)	1.360 (0.507)	0.842 (0.656)	1.023 (0.599)
Hetro. $[\chi^2(1)]$	0.999 (0.317)	1.837 (0.175)	0.537 (0.464)	3.435 (0.064)

Note: 1: P-Value are in parentheses

2: Model 3 and Model 4 included other development variables for robust result.

Table-VI: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
LRGDPC	32	10.01	0.38	9.47	10.75
LFTORARV	32	14.65	0.51	13.99	15.66
LDEATH	32	6.83	1.14	3.40	7.96
LNFEE	32	-9.64	0.26	-10.26	-9.30
FTS (Per 100 people)	32	1.84	1.42	0.31	4.45
Lrail Lines	32	11.04	0.01	11.02	11.07
D91	32	0.66	0.48	0.00	1.00

Table-VII: OLS Regression Result

Variables	Model 1	Model 1#	Model 2
Dependent Variables	LFTORARV	LFTORARV	LNFEE
Independent Variables			
LDEATH	-0.01 (-1.25)	-0.02* (-1.70)	-0.09** (-3.38)
LRGDPC	1.41** (26.19)	1.37** (31.50)	0.34** (3.35)
D91	-0.05 (-1.39)	@	0.34** (4.35)
INPT	0.63 (1.27)	1.10** (2.87)	-12.63** (-13.39)
No of Obs	32	32	32
R-squared	0.98	0.98	0.75

Note: 1: t-statistics are in parentheses, @ drop the D91 dummy variables from Model # 2: ***, ** and * denotes 1%, 5% and 10% level of significant respectively.