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3.3.2 Number of books and chapters in edited volumes/books published and paperspublished in national/ international conference proceedings per teacher during 2021-22.

Sr. No.	Name of the teacher	Title of the books/chapters published	Title of the paper	Title of the proceeding of the conference	Name of the conference	Year of publication	ISBN number of the proceeding	Name of the publisher
1	Dr. Rupali Zope	NA	Addressing urban built environment challenges using system dynamics approach : A Perspective from emerging economies	Transport Research Procedia	World Conference On Transport Research Society	2021	2352-1465	Elsevier
2	Dr. Rupali Zope	NA	Structural Equation Model for Sustainable Transport System Performance Enhancement	Transport Research Procedia	World Conference On Transport Research Society	2021	2352-1465	Elsevier

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3	Prof. Aparna Patil	NA	A Survey Paper on Sink-hole Attack Resilience and Energy Efficiency using Internet of Things	4th International Conference on Advances in Science & Technology (ICAST2021)	International Conferences On Advances in science and Technology	Jun 2021	10.2139/ssrn.3871524	Elsevier
4	Prof. Jayant Nalawade	Advanced Technology for the Conversion of Waste into Fuels and Chemicals (pp.197-215)	NA	NA	NA	2021	978-0-12-823139-5	Elsevier
5	Prof. Vaibhav Patil	Digital Business	NA	NA	NA	2021	978-93-5495-163-3	Himalaya Publication

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Case Studies in Transport Research

Transportation Research Procedia

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Transportation Research Procedia (2021)

Addressing urban built environment challenges using system dynamics approach: A Perspective from emerging economies

Rupali Zope[a], Vasudevan N.[b], Shriniwas S. Arkatkar[c], Gaurang Joshi[d]

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Abstract

The built environment majorly focuses on clean environment. The transport sector is a major source of fuel consumption and emission and big threat for the built environment. The study proposes a framework to understand the complex interaction of transport system with built environment. The advantage of System Dynamics (SD) based simulation model is used to evaluate this complex interaction. The implicit and explicit choices made through mode choice analysis are investigated for eight Indian metro cities. The study investigates the impact probabilities of increase or decrease in public or private transport trips on fuel consumption and emission. The significant impact of population growth proved to be an influencing factor impelling demand and supply of any transport system. A concept of 'Confidence Quadrant" (CQua is proposed to map the uncertainties obtained through sensitivity simulation of travel time and travel cost of public or private transport trip The novelty of current work lies in expressing the dynamism of mode choice and its causal effect on fuel consumption and emission. T efficient prediction of causal interaction would certainly help planners and policy makers in alleviating the adverse impacts of emission on built environment.

Peer-review under responsibility of WORLD CONFERENCE ON TRANSPORT RESEARCH SOCIETY.

Peer-review under responsibility of WORLD CONFERENCE ON TRANSPORT RESEARCH SOCIETY.

Keywords: sustainable urban transport system, structural equation modelling, user perception, performance improvement

1. Introduction

The present urbanization rate of 33% in the developing country like India has translated roughly 340 million population living in urban areas. The number of million-plus cities in India is 42 now accounting for 60% of the Gross Domestic Product (GDP) of India. Consequently, travel in cities has become more dependent on personal modes due to rising level of per capita income, intensification of activities and lack of priority for strengthening the public transport system through timely interventions. Only three to four cities like Mumbai, Delhi, Chennai, and Kolkata could claim to have adequate mass rapid transit system. According to a study by Centre for Science and Environment (CSE) the share of public transport is projected to decrease from 75.7% in 2000-01 to 44.7% in 2030-31.Cycling infrastructure (like the network of roads and streets used) in 20 has reduced to less than 1% from nearly 30% in 1994 (MoUD, 2008). The two-wheelers (TW) and four-wheelers (F penetration has witnessed an exponential surge of 60 per 1000 persons in 2001 to 150 per 1000 persons in 2011. Pedestrians, cyclists, and riders of motorized two-wheelers and their passengers (who are collectively known as "vulnerable road users")

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Transportation Research Procedia (2021)

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Structural Equation Model for Sustainable Transport System Performance Enhancement

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Abstract

In today's scenario, around half of the world's population is residing in urban areas. With growing population and widespread of cities, issues of transport system and their impact on environment, urban economy and society are getting bigger. Such growing concern raised the need of sustainable transport system. Current study investigates causal effect of different variables on sustainability of transport system. The validation of proposed structural model for the collected data is done using structural equation modeling (SEM). The proposed model is used to (i) measure sustainable transport index (ii) measure contribution of user's perception for performance improvement. Regression weights and correlation value (R2) are obtained for the study. The regression weight found between SUTIndex and SUTPAttain proved that user's perception for improvement of transport system directly help to improve index value. Regression weights obtained under social and environmental dimension revels that better accessibility would help to enhance the performance.

Peer-review under responsibility of WORLD CONFERENCE ON TRANSPORT RESEARCH SOCIETY.

Keywords: sustainable urban transport system, structural equation modelling, user perception, performance improvement

1. Introduction

Transportation is considered as an essential part of human life. It has become backbone of national, regional, and local economy. It plays crucial role in booting up common user life through facilities and accessibility to them. However, the growing economy of India in recent years has contributed in terms of increase in vehicle population. It further led to different issue like congestion, pollution, fuel consumption, accidents etc. India is poised for rapid economic growth. Such future growth will largely come from the secondary and tertiary sectors of the economy, i.e., the industrial and service sectors. Since, economic activities in these sectors primarily take place in urban areas, the state of our towns and cities are crucial to India's future growth'. India's transport sector is large and diverse; it caters to the transport needs of 1.1 billion people. In 2012-2013, the sector contributed about 5.2 percent to the nation's GDP, with road transportation having a major share of it (Advance Estimates of National Income India, 2012-13). As a proportion of global population, the urban population is projected to reach 60% by 2030, with urban areas growing at a rate of 1.3 million people every week (UNDESA 2014). The provisional results of Census 2011 reveals that there is an increase of 2774 towns comprising 242 Statutory and 2532 Census towns over the decade. Growth rate of population in urban areas was 31.8% (MoUD, 2011). This resulted into immense pressure on urban infrastructure, particularly more due to diverse issues already prevailing on Transportation domain. The issues have become more complex because of rapid growth of private vehicles, with no significant growth in city bus service over the years. India has experienced a tremendous increase in the total number of registered motor vehicles as shown in

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Peer-review under responsibility of WORLD CONFERENCE ON TRANSPORT RESEARCH SOCIETY.

A Survey Paper on Sink-hole Attack Resilience and Energy Efficiency using Internet of Things

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***Abstract*— The Internet of Things (IoT) based remote monitoring of the environment gained tremendous attention from researchers. Wireless monitoring is offered through the IoT-enabled technologies under applications like Intelligent Transport System (ITS), healthcare, home automation, precision agriculture, etc. The working of IoT applications has been the basis on different kinds regards sensor nodes that were deployed for field data sensing & transmitting through a base station (BS). The Wireless Sensor Network (WSN)-assisted IoT networks to suffer from two challenges like energy-efficiency & various security threats such as sinkhole, black hole, Daniel of Service attacks, etc. This survey paper, studying the recent security measures to protect communications from such attackers. A systematic review conducted on lightweight security solutions like trust-based & probe route-based mechanisms under this research. Comparative analysis of such methods presented in terms of security technique, attacks, performance metrics, etc. The outputs of this paper have been critics of research observed through the comparative analysis of reviewed methods.**

Keywords*— *Attacks, Internet of Things, Wireless Sensor Networks, Security Measures, Trust-Based Detection, Probe-Route.

I. INTRODUCTION

A WSN (Wireless Sensor Network) consists of small nodes with the ability to sense and transmit data to the base station. The wireless sensor network is used in separate statements such as military activities to track their enemy's movement. A sinkhole attack is an unauthorized attack that a node within the network was attacker vulnerability and launched an attack. The node transmits then attempts, based on the routing algorithm's transport protocol, to accumulate all the information from adjacent routers. It will launch an assault when it has managed to accomplish that. Because of wireless sensor networks' many-to-one communication style, each node sends data to the sink, and this WSN is susceptible to sinkhole attacks. This paper describes the Sink-hole attack detection techniques in wireless sensor networks (WSN). Numerous researchers have already done various methods for the detection of malicious nodes from cluster networks or random networks. The state of Art describes the gap analysis of those existing methods which is used for the detection of network attacks. In the discussion section, we investigate detection accuracy, efficiency, and quality of service according to a specific algorithm.

II. LITERATURE REVIEW

A. *Reputation-Based Architecture for High Integrity Sensor Networks [1]*

The Bayesian formulation has used for communication data validation between the source node as well as sink nodes and reputation represented in the sensor network. This system utilized watchdog that consists of three modules WMRouting, WMData, and WMProcessing. Routing can monitor the data communication behaviours between nodes, including forwarding and receiving activity. The WMdata detects neighbour nodes malicious activities while WMrouting generates new communication links from sink to source node. The WMData model works like an intrusion detection approach that can build the networks trust and reputation during data transmission. The reputation calculation is another mechanism. The importance of i^{th} node evaluated by j^{th} node like event localization process. This framework also used Beta Reputation System (BRSN) for sensor network that used for reputation representation of each node using Bayesian network.

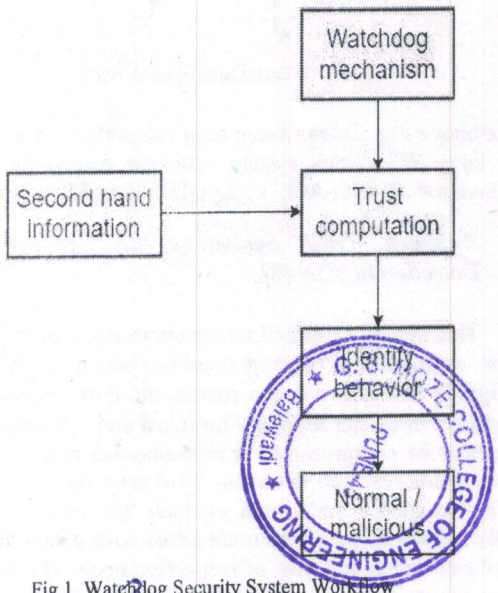

Fig.1. Watchdog Security System Workflow

The above Fig. 1 describes a watchdog security system in WSN, the watchdog mechanism can easily eliminate numerous networking attacks like flooding, buffer overflow, smurf etc.

Advanced Technology for the Conversion of Waste into Fuels and Chemicals
Volume 1: Biological Processes

2021, Pages 197-215

9 - Thermochemical conversion methods of bio-derived lignocellulosic waste molecules into renewable fuels

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Available online 20 August 2021, Version of Record 20 August 2021.

https://doi.org/10.1016/B978-0-12-823139-5.00050-2

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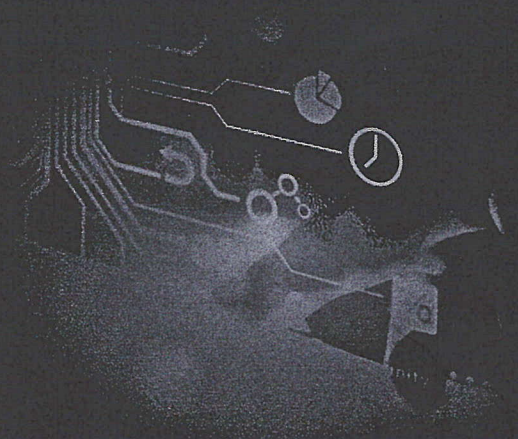

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ISBN: 978-93-5495-163-3

ISBN: 978-93-5495-163-3

PCF-0470

₹ 525/-