iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 13 **Issue:** IV **Month of publication:** April 2025

DOI: https://doi.org/10.22214/ijraset.2025.69971

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 13 Issue IV Apr 2025- Available at www.ijraset.com

Public Private Partnership for Redevelopment of Shivaji Garden, Nashik

Miss. P.D. Sonawane[1], Prof. P.D. Aher[2]
[1]*P.G.Student,* [2]*Profeser, Dept of Civil Engineering, NDMVPKBTCOE Nashik, Maharashtra, India*

Abstract: ***The Public Private Partnerships (PPPs) have emerged as a very feasible, viable, and growing mode of creating infrastructure for our country. Though public sector will continue to play a dominant role in building of infrastructure, the PPPs have enabled us to channelize private sector investment in infrastructure. Keeping in mind that our country is still starved of adequate infrastructure required for high level development, the opportunities for the growth of joint venture between both the sectors are huge and desirable. A Public Private Partnership is a legally-binding contract between government and business for the provision of assets and the delivery of services that allocates responsibilities and business risks among the various partners. Nashik is regional centre of northern Maharashtra and very famous for its grapes growing. The city has become the centre of attraction because of its beautiful surroundings and cool, calm, pleasant climate. Nashik has a personality of its own due to its mythological, historical, social and cultural importance. Shivaji Garden which is located at the heart of the city and is oldest recreation centre for the public but now days the condition of the garden is very poor and it is not in use therefore it may plan to redevelopment of the Shivaji Garden under the PPP project***
Keywords: ***Public Private Partnership (PPP), RII method, SPSS.***

I. INTRODUCTION

Public-private partnerships (PPPs) create a long-term partnership between municipalities and the private sector, under the premise that the private sector can do some things better than the public sector, in particular around innovation, service delivery, commercial orientation, and the drive for efficiency. In some cases, a municipality can simply hire a private entity to provide a service or deliver a product, for example, under a contract for sale or a construction contract. But for many services, the best way for a project to mobilize the combined strength of the municipality and of the private sector is a PPP, where both parties share critical risks and liabilities to align interests and coordinate efforts. If they are well designed and managed, PPPs can deliver quality, reliable, and cost-efficient infrastructure. By mobilizing private expertise and human and financial resources, PPPs can accelerate the construction of infrastructure, improve the efficiency of public services, and foster innovative solutions that offer a better response to user needs than would poorly functioning public service provision. A growing number of local governments are turning to PPPs for municipal services, solid waste management, recycling, water and sanitation, energy-efficient street lighting, primary health care, local transport terminals, public markets, parking facilities, parks, affordable housing, municipal facilities and 'Smart City' applications. Shivaji Garden which is located at the heart of the city and is oldest recreation centre for the public but now days the condition of the garden is very poor and it is not in use therefore it may plan to redevelopment of the Shivaji Garden under the PPP project

A. Objectives

1) To study the problem related to the city garden and its infrastructure.
2) To find the factors affecting public private partnership and to do the analysis using SPSS.
3) To collect the data pertaining to the selected site. Make Survey & collect data regarding different public utility units which are feasible at city garden
4) To suggest effective public private partnership for redevelopment of city garden.

II. METHODOLOGY

The entire investigation and experimental work was carried out from identification of problem up to the result and discussion for the problem. The following flow chart gives the detail work carried out with the sequence of the activities from starting to the end of investigation.

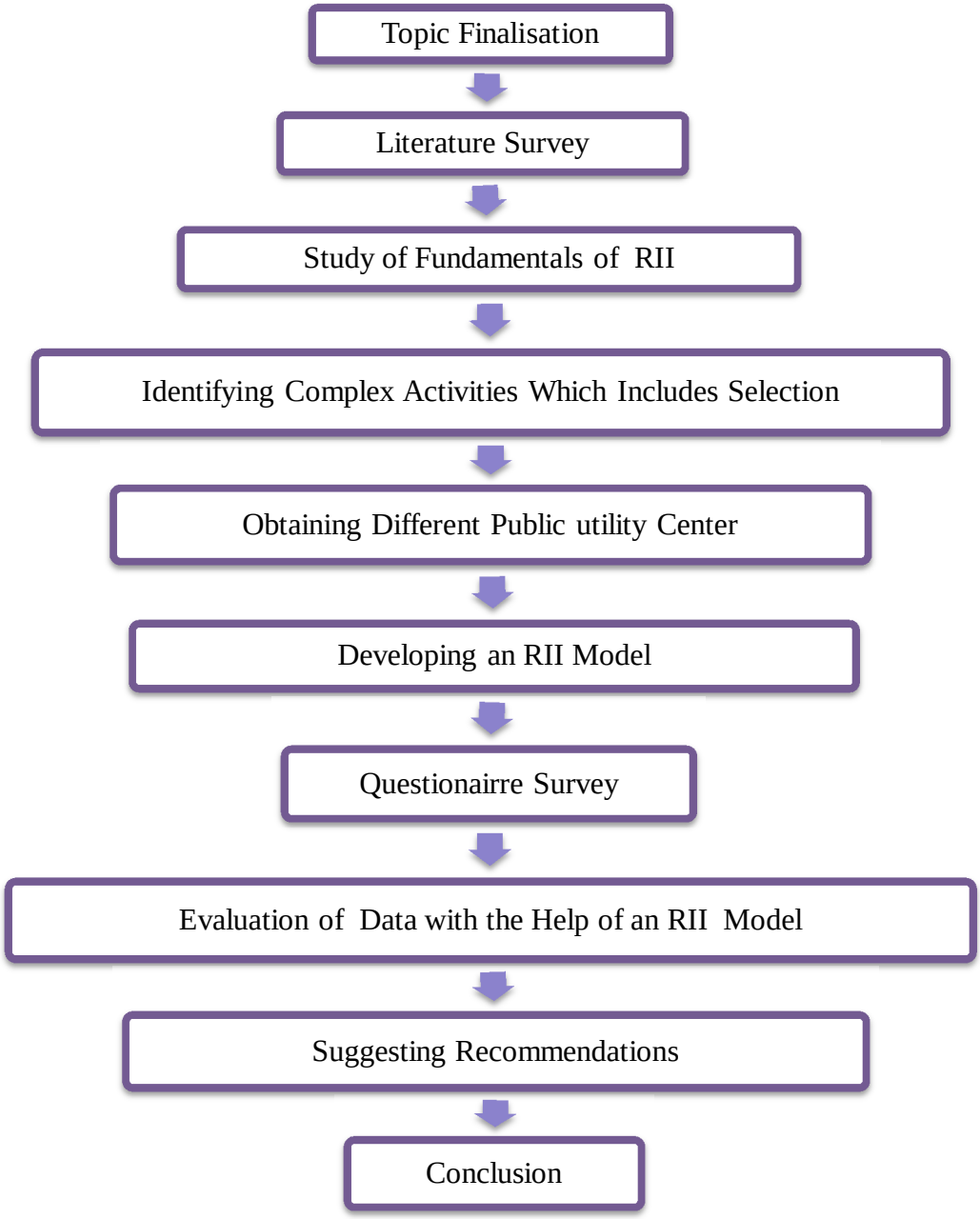


Fig.1 Flow chart of work

A. Case Study of Public Private Partnership For Redevelopment of Shivaji Garden, Nashik

SITE DETAILS:

Name of site - Shivaji Udyan, Nashik.

Location - In front of Central Bus Stand (CBS), Shalimar, Nashik.

Area -16000 m^2.

Land owner- Nashik Municipal Corporation (NMC)

1) Command Area

The command area of shivaji udyan nashik is shown in Fig.2. The shivaji udyan Nashik is located at heart of city this area always facing the problem of traffic due to lack of space for vehicle parking. So to avoid such problems we need to redevelope shivaji udyan, Nashik by providing necessary amenities.

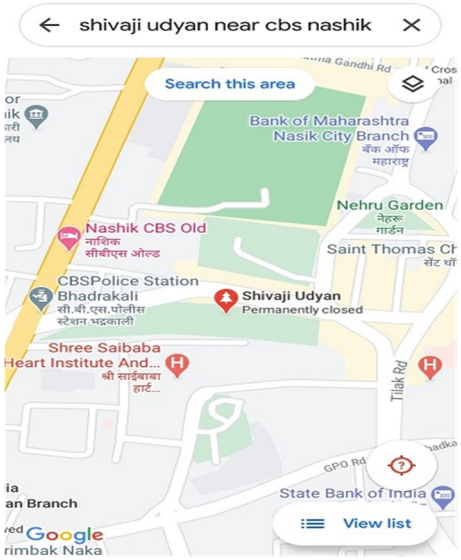


Fig.2 location map of shivaji udyan, Near Old CBS, Nashik

2) Data Collection

For the purpose of data collection, we have carried out a survey of people who are continuously arrive at CBS, Nashik from different places by their own vehicles, Students of School And Colleges, shop keepers, pedestrians etc.

The sources of data are as follows:

a) Collection of data through questionnaire survey.

b) The collection of data from scholarly articles, research papers and academic studies.

c) The collection of data from media reports.

ANNEXURE

Sample form for main questionnaire survey (for finding Relative Important Index) as follows:

DEPARTMENT OF CIVIL ENGINEERING

Nashik District Maratha Vidya Prasarak Samaj's
Karmaveer Adv. Baburao Ganpatrao Thakare College Of Engineering
Nashik – 422013

QUESTIONNAIRE FORM

Topic Name: "Public private Partnership for Redevelopment of Shivaji Garden, Nashik"

Name: _____

Address: _____

Phone No.:_____

Age: _____ Occupation: _____

Frequency to come nearby
Shivaji Garden (Daily/weekly/monthly):_____

Mode of Transportation (Private vehicle/Public Transport):_____

Item	Very Important	Important	Some what important	Not Important
Scale	4	3	2	1

Table 2.1 Ordinal scale used for data measurement

Sr. No.	Types Of Public Utility Centre	Very Important (4)	Important (3)	Some what Important (2)	Not Important (1)
1	Art Museum				
2	Cafeteria				
3	Mini Mall				
4	Community Centre				
5	Food Court				
6	Gymnasium				
7	Parking				

Table 2.2 Main Questionnaire (For Finding Relative Importance Index)

Instruction: Indicate by ticking the appropriate column the relative importance of each of the following different Public Utility Centres which is to be constructed at Shivaji garden, Nashik under the Public Private Partnership (PPP). Tick mark according to only in one column in each row.

III. RESULT AND DISCUSSION

A. Analysis of RII for various Public Utility centres

Table 2 deals with the different public utility centres and then by doing questionnaire survey we get responses from public and on the basis of responses recorded we apply RII method and calculate rank. According to questionnaire survey the most needed and important utility centre is Parking. And then all ranks are calculated respectively.

$$RII = \text{Sum of weights } (4n_4+3n_3+2n_2+1n_1) / A*N$$

Where;

n_4 = Total number of Very Important weightage
n_3 = Total number of Important weightage
n_2 = Total number of some what Important weightage
n_1 = Total number of Not Important weightage

A = Highest weightage
N = Total number of respondents

Sr. No.	Types of Public Utility Centres	Very Important (4)	Important (3)	Somewhat important (2)	Not important (1)	Total	Total respondent	A*N	RII	Rank
1	Art Museum	8	8	26	15	64	35	140	0.457143	6
2	Cafeteria	0	0	22	16	62	35	140	0.442857	7
3	Mini Mall	20	20	14	3	97	35	140	0.692857	4
4	Community Centre	52	52	26	3	99	35	140	0.707143	3
5	Food Court	16	16	12	0	103	35	140	0.735714	2
6	Gymnasium	24	24	32	10	75	35	140	0.535714	5
7	**Parking**	**72**	**72**	**20**	**0**	**113**	**35**	**140**	**0.807143**	**1**

Summary of RII for various Public Utility centres

Sr. No.	Public Utility centres	Relative Importance Index(RII)	Rank
1	Art Museum	0.457143	7
2	Cafeteria	0.442857	6
3	Mini Mall	0.692857	3
4	Community Centre	0.707143	4
5	Food Court	0.735714	2
6	Gymnasium	0.535714	5
7	Parking	0.807143	1

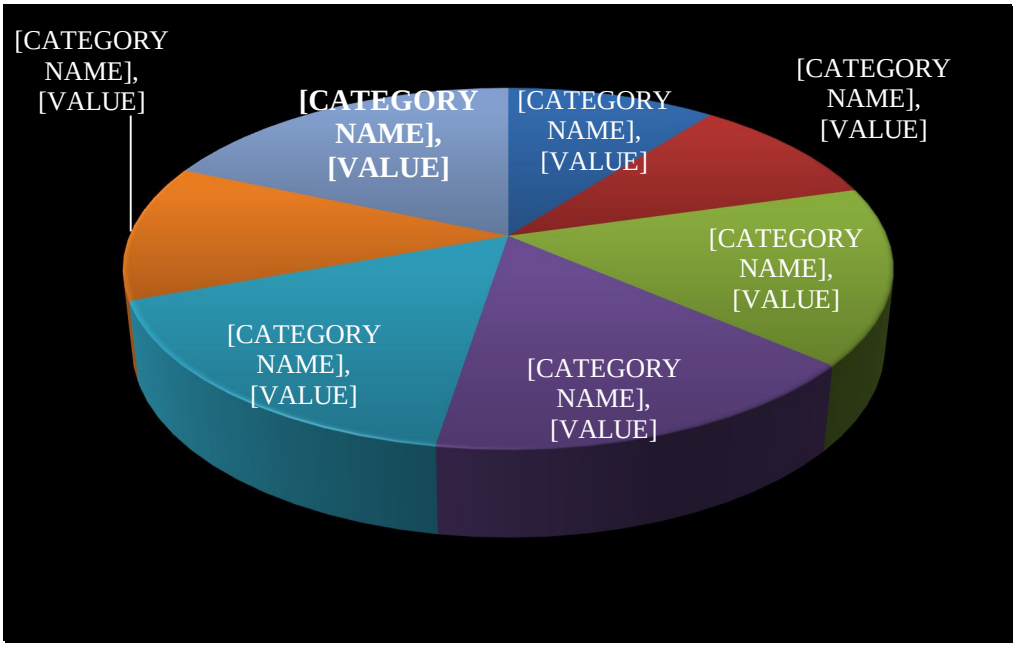


Fig 3.1.1 Graph showing the importance of different Utility Centre

IV. CONCLUDING REMARK

The all ranking indices explained earlier were used to rank different public utility centre from viewpoints of the public. The Relative Importance Index (RII) was computed for each centre to identify the most significant, relevant, revenue generating for Government body utility centre for public use. The analysis of the given data is shows that what would be the weightage to different public utility centre which is helpful to government body for making decision about how to be redevelop the Shivaji Garden. Also to know the what exact project to be constructed under the Public Private partnership (PPP).

REFERENCES

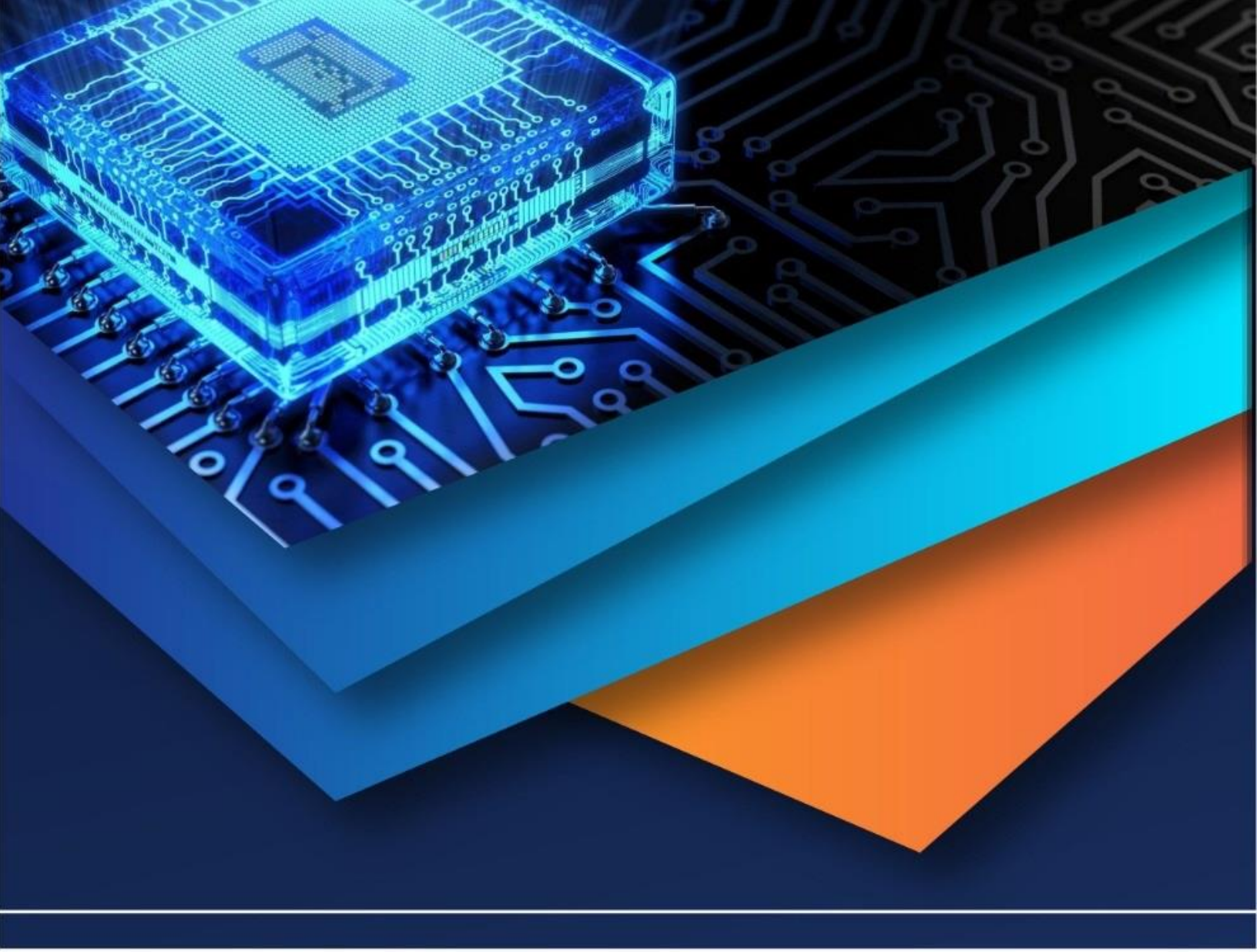
[1] Mr.S.B.Kulavmode,Dr.S.S.Valunjkar,(2017), Feasibility of Pipe Distribution Network (PDN) over M. Regan, ; P. E. D. Love, ; and J. Smith,Public-Private Partnerships: Capital Market Conditions and Alternative Finance Mechanisms for Australian Infrastructure Projects, JOURNAL OF INFRASTRUCTURE SYSTEMS © ASCE / SEPTEMBER 2013,pp 335-342

[2] Albert P.C.Chan; Patrick T. I. Lam; Yang Wen; Ernest . Ameyaw; Shouqing Wang; and Yongjian Ke Cross-Sectional Analysis of Critical Risk Factors for PPP Water Projects in China, J. Infrastruct. Syst., 2015, 21(1): 04014031, pp 1-10

[3] E. E. Ameyaw, and Albert P.C.Chan, A Fuzzy Approach for the Allocation of Risks in Public–Private Partnership Water-Infrastructure Projects in Developing Countries, J. Infrastruct. Syst., 2016, 22(3): 04016016, pp 1-13

[4] R. O.Kyei and Albert P.C.Chan Developing a Project Success Index for Public–Private Partnership Projects in Developing Countries, J. Infrastructure. Syst., 2017, 23(4): 04017028, pp 1-12

[5] Yao Yu; Albert P.C.Chan; Chuan Chen, A.M.ASCE; and A.Darko Critical Risk Factors of Transnational Public–Private Partnership Projects: Literature Review, J. Infrastruct. Syst., 2018, 24(1): 04017042, pp 1-11
[6] N. S.Grigg, F.ASCE Unbundling Infrastructures to Identify Attractive Public-Private Infrastructure Partnerships in the United States, J. Infrastruct. Syst., 2018, 24(2): 02518001, pp 1-5
[7] F. Bao; Albert P. C. Chan; Chuan Chen, A.M.ASCE; and A. Darko ,Review of Public–Private Partnership Literature from a Project Lifecycle Perspective, J. Infrastruct. Syst., 2018, 24(3): 04018008, pp 1-12
[8] X.X.Yuan and Yuanshun Li, Residual Value Risks of Highway Pavements in Public–Private Partnerships, J. Infrastruct. Syst., 2018, 24(3): 04018020, pp 1-11
[9] Anvuur and M. Kumaraswamy "Making PPPs Work in Developing Countries: Overcoming Common Challenges" CIB W107 Construction in Developing Countries International Symposium "Construction in Developing Economies: New Issues and Challenges" January 18th – 20th; 2006 – Santiago, Chile, pp 1-849
[10] F. Islam, M. Adil, and S. A. Alvi, "PLC Based Automatic Intelligent Car Parking System" International Journal of Computer Theory and Engineering, February 2017, Vol. 9, No. 1, pp53-57
[11] B. Ramya Sri "Automatic Car Parking System using IR Sensors" International Journal of Engineering Science and Computing, April 2017 vol.7 Issue no.4 ,pp6485-6487
[12] D. Ramya "Automatic Car Parking System Using Microcontroller" International Journal of Innovative Research in Science, Engineering and Technology An ISO 3297: 2007 Certified Organization Volume 7, Special Issue 1, March 2018 6th National Conference on Frontiers in Communication and Signal Processing Systems (NCFCSPS '18) 13th-14th March 2018, pp 236-239
[13] Murali Patibandla "An Analysis of Public-Private Partnerships in Infrastructure of Provision of Public Goods through E-Governance in India" IIMB-WP N0. 564, pp 1-30
[14] N. G. Yerojwar "Automated Vehicle Parking In India and Challenges" International Journal of Electrical and Electronics Research ISSN 2348-6988 (online) Month: October - December 2015 Vol. 3, Issue 4, pp 121-124
[15] Zhanlin Ji "A Cloud-Based Car Parking Middleware for IoT-Based Smart Cities: Design and Implementation" Sensors 2014, 14, 22372-22393; doi:10.3390/s141222372,pp 1-22
[16] Zubydur Rahman "Cloud Based Smart Parking System using IoT Technology" BRAC University, Dhaka, Bangladesh 2017,pp 1-69
[17] Dr. R. R. Mergu "Multi Storey and Automated Car Parking System" IJSRD - International Journal for Scientific Research & Development| Vol. 5, Issue 02, 2017 | ISSN (online): 2321-0613, pp 1808-1810
[18] A. Pawar "Automatic multilevel car parking & controlling system using PLC" International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395 -0056 Volume: 04 Issue: 03 | Mar -2017 www.irjet.net, pp 1939-1941
[19] L. E. Brandão, Carlos Bastian-Pinto; Leonardo Lima Gomes; and Marina Labes Government Supports in \\\ OF INFRASTRUCTURE SYSTEMS © ASCE / SEPTEMBER 2012, pp218-225
[20] A. Almassi; B. McCabe, M.ASCE; and M. Thompson Real Options–Based Approach for Valuation of Government Guarantees in Public–Private Partnerships,JOURNAL OF INFRASTRUCTURE SYSTEMS © ASCE / JUNE 2013, pp 196-204



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY