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Role Of Robotic Process Automation in Managing Transportation Systems for Smart Cities

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Abstract

Half of the world's population resides in cities and this percentage is going to rise in the coming years. This rapid transformation of the economy and society is making traditional city management redundant. Intensive urbanization has brought with it some challenges. Scanty resources, population growth, increased carbon footprint, reduced air quality, congestion on roads, depriving health status, and falling food quality, all are prominent parts of cities. Does this bring a question in mind is accelerated growth sustainable? The answer and solution to this is an adaption of the Smart City Concept. A smart city integrates all the available technology with the requirements of city development and builds infrastructure which can improve the quality of life of citizens. Smart cities are designed in a manner to use minimum resources with maximum efficiency in all areas of urban life. It provides smart solutions using smart technologies. Urban needs and technological advancements meet in smart cities. It manages cities more quickly and effectively by using AI, IT technologies, and robotic process automation. Intelligent transportation, intelligent energy, intelligent governance, intelligent security, intelligent healthcare are all central to the idea of smart cities. The emphasis of this essay is on smart transit as a component of smart cities. The movement of people and goods across several geographical boundaries has been significantly aided by the transportation sector. Globally, the majority of smart cities face logistical and transportation issues. Both the fast growing human population and the increase in the number of cars on the road are to blame for this. In order to design and run a sustainable transportation system, technology may be of great assistance. Robotic systems for real-time vehicle data collection, traffic management, and using mobility on demand in trip planning through a single user interface have emerged as cities struggle with traffic congestion. The transportation industry, which faces difficulties including traffic congestion, unanticipated delays, and routing issues that cause businesses to lose money, has successfully used robotic process automation. Robotic process automation provides reliable results and affordable solutions while reducing uncertainty in the decision-making process. It is very helpful in designing and running a successful transit system. Robotic Process Automation (RPA) systems for obtaining real-time data from vehicles, buses, and trucks for traffic management and using mobility on demand in trip planning through a single user interface have emerged as cities struggle with poor management and congestion. By examining different uses of robotic process automation, it is possible to evaluate precise prediction and detection models that are intended to forecast traffic volume, an appropriate route, traffic conditions, accurate information about timing, incidents, and which time and roadway for transport are suitable for running and mobility. The application of RPA in smart cities could be

seen in Intelligent Transportation Systems' Traffic Management, Public Transportation, Safety Management, Manufacturing, and Logistics. The research focuses on areas of concern for smart cities in the sphere of the transportation sector and related difficulties that may be solved via robotic process automation. The article emphasizes the challenges and solutions for making smart transportation more effective by using Intelligent Robotic Transportation Systems.

Keywords: Robotic process automation, Smart cities, Intelligent transport, Efficient management, Growth.

1 Introduction

The percentage of the world's urban population is increasing and is expected to keep increasing. Cities around the world are growing. There are increased pressures on cities around the world to improve their infrastructure and facilities to only house all existing and prospective people, but also to provide them with a good quality of life(1). To manage this situation, the concept of "smart city," entered. Smart cities employ technology to supplement urban services such as transportation, utilities, and energy to increase efficiency, minimize waste, and operate more sustainably. Even the government of India has launched the Smart Cities Mission to make Indian cities more sustainable and citizen friendly(2). One of the crucial parameters of Smart Cities is 'transport and mobility. As cities become more "smart", smart transportation is turning ou6t to be a major factor to make smart cities successful. Smart transportation includes infrastructures that provide users with better services and efficient transportation networks. The IT-based infrastructures allow newer ways to evolve like automated surveillance systems, parking management, improved traffic performance, and efficient fuel solutions. Smart mobility solutions contribute to the greater security that we all expect from future smart city infrastructures. The use of technology has developed systems like real-time ticket management, traffic jam prevention, smart parking, enhanced security, and smart traffic monitoring which has led to better information for passengers making reaching destinations safer and faster.Robotic process automation is a field of technology that can learn from experience how to carry out ever-more-complex tasks, automate decision-making, and provide assistance in a variety of areas of life. Big data and the rapidly declining cost of computing and connectivity have enabled the explosion of AI. Applications for robotic process automation are now widespread in industries including online shopping, public safety and surveillance (facial recognition), manufacturing (process control), and transportation (traffic control, advanced driver assistance systems). Together, these factors make robotic process automation very significant for the creation of smart cities.. Analysis of IT tools indicates that robotic process automation (RPA) is the fastest growing tool of digital transformation(3). It uses advanced software robots to automate the tasks which are performed by humans. RPA automates processes and procedures carried out by humans by imitating them. These bots do not only work on the set algorithm rather they are more based on artificial intelligence and as a result, but they can also easily make complex decisions. Smart cities are moving toward using RPA in their process because of its abundant benefits(4). Some of the benefits include reduced costs of performing processes, refining the quality of work ethics of employees and authorities by making them perform only the core activities, providing improved quality of the services delivered to the citizens because of minimized errors, increased rate of innovations for different processes and systems needed in smart cities. The objective of this paper is to define the prospective use of RPA tools in carrying out the digital transformation of transportation and, thus, its contribution to smart transportation in the smart city concept(5). The paper also tries to show possible solutions developed for total management of transportation exploring developments in intelligent transportation systems. The introduced concept to improve the total transportation management is a fresh approach that is realistic but needs further improvements keeping into consideration the size and intensity of the transport industry(6). The paper gives an account of the present and prospective total transportation system

2 Literature Review

Santos,Braga, et al. (2020) examine in their study that enhancing productivity and cutting expenses by utilising software robots that communicate with systems through their user interface. However, if the wrong procedure is used for some crucial tasks, including identifying operations that can be automated with RPA, it can have a significant negative effect on enterprises.**Syed, Suriadi, et al. (2020)** observed in his paper on Towards investing in RPA technology to enhance their current operational and business processes.Similarly, **Qu, Fengzhong, et al. (2010)** observed in his paper on Intelligent Transportation Spaces: Vehicles, Traffic, Communications, and Beyond that the bottom layer challenges of wireless communication technologies, such as transmission power, bandwidth, data rate, and channel characteristics, were primarily addressed. **Nguyen, Dinh Dung, et al. (2020)** presented in their study A hierarchical model was used to categorise the many types of vehicles used in transportation, including passive or non-collaborating, semi-active or simple cooperating, active or cooperating, connecting vehicles, contract-based vehicles, priority transport, and supporting partners. A fresh optimization approach was also offered to address the traffic optimization issue. This method may be used to maximize the energy utilized by vehicles from the point of departure to the point of arrival. **Mantelero, Alessandro (2015)** examine in their study terms of data management and information access, it is possible to strike a balance between individual and collective interests. From this vantage point, the regional government has taken on the political responsibility of planning and monitoring mobility data processing, as well as providing aggregate or comprehensive information to municipalities, transportation firms, and consumers. **Kopacek, P et al. (1986)**, "Robots in Transportation" From the standpoint of transportation systems, robots may be seen as highly adaptable automation equipment. **Tewolde, Girma S (2012)** provided an overview of the technological advances that are paving the way for the implementation of intelligent transportation systems. Similarly, **Wang, Fei-Yue (2010)** examine in their study as more research and Before ideas and techniques in the ACP-based approach, especially the parallel system approach, which incorporates both parallel control and parallel management, can become well established, efficient, and generally recognised in addressing actual complicated issues, application efforts are necessary. **Owen, Wilfred (2013)** assessed the disadvantage of recognizing the benefits of changing technology derives from the fact that each element of the transportation system is given and scheduled independently, with no thorough evaluation of possible alternatives. **Sullivan, Mac et al. (2021)** observed in their study that Process mining and mapping are key steps in finding jobs that may be automated and improved through process improvement. Consider adopting RPA based on the number of jobs that are repetitive, independent of human input, require no physical input, have minimal subjectivity requirements, and are significant in terms of the number of tasks performed by internal personnel. **Echelmeyer, Wolfgang, et al (2018)** observed in their study that Robotics-logistics may be defined as the realm of activities in which industrial robot technologies are supplied and needed to optimize internal material flows.

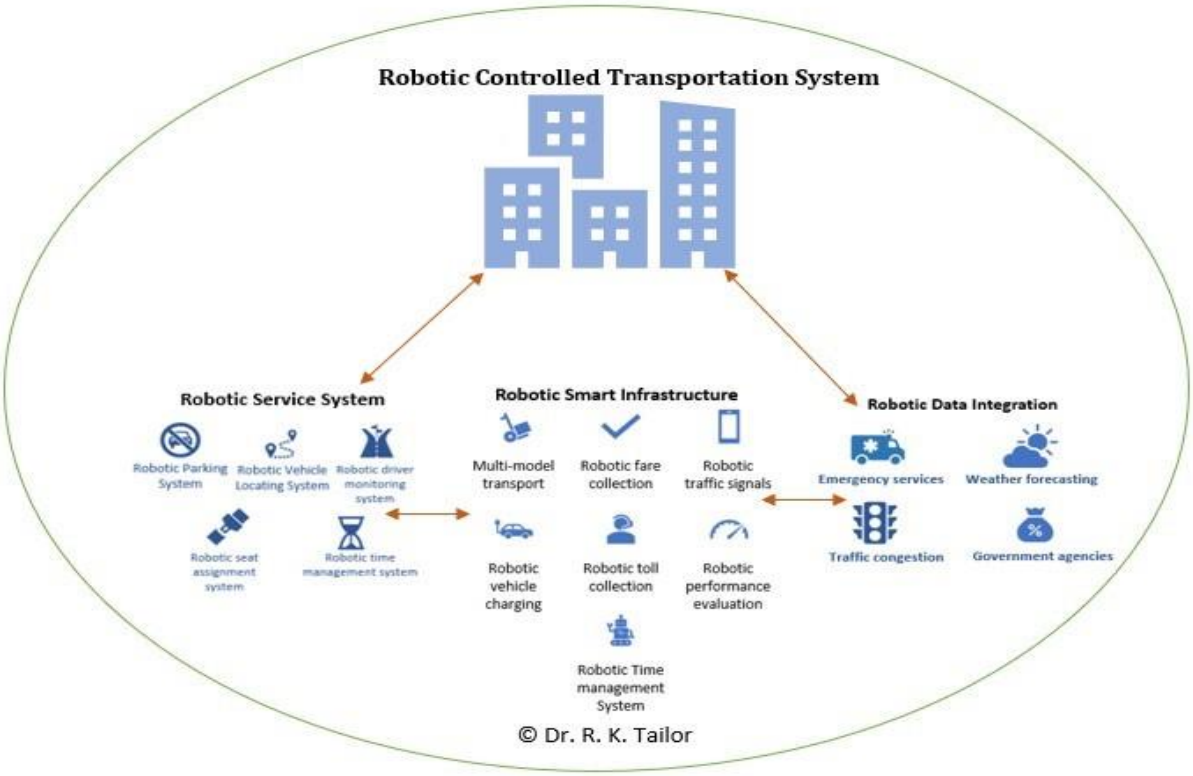

Figure 1. Robotic System in transport

3 Application of RPA in transportation

The application of robotic process automation (RPA) in transportation can help achieve high levels of accuracy, reduce process cycle times, and increase revenue creation potential. RPA tools are easy to install and require a minimum of time to enhance the work process, efficiencies, and increase financial returns(7). The ongoing competition has pressurized companies to serve the customers with the best outputs, at this point a refined tool like RPA can help to meet the demands of mature markets. The authorities need to club RPA with other technologies to make transportation smart. Transportation has two verticals; passenger transport and logistics, both the verticals need RPA as part of the technology used in their different processes. The use of RPA leads to effective management as RPA uses management by exception and unlocks efficiency and cost benefits. Some of theareas where RPA is applied are as follows:

- Real-time bus tracking of buses leads to wholesome management on behalf of authorities and is very helpful for customers to plan their journey. The real-time data helps the authorities to have updated knowledge of all the buses simultaneously,which helps in better scheduling and traffic management.

- cameras installed on roads detect speeding vehicles, accidents, and violations. The intelligent transport management system is smart enough to adapt to situations and change the timing of traffic lights to keep the flow of traffic optimized. The system observes, integrates, and analyses the real-time just like humans but at a quicker pace(8).

- RPA-enabled software aids in real-time route analysis, fare calculation according to the distance traveled, and automatic fare collection. subsectionIncident Management systems exist in smart cities which cater to all events reported including breakdowns, accidents, etc.

- Mobility as a Service could be software aiming to resolve the issues associated with urban density and thus make mobility efficient and easy. The software acts as a single platform via which users can access data regarding different modes of transport. Customers can plan their journey using different modes of transport, with the help of data provided by the software. This software would bring seamless connectivity among different platforms.

- The real-time data collected through an Intelligent traffic management system can help city planners in preparing different traffic models. Using the data records and tracking the area-wise movement of people, they can propose models wherein public transportation and traffic lights get deployed in areas of maximum movement thus ensuring better connectivity(9).

- Smart Parking is one of the world's fastest-growing Smart City Solutions. The substantial benefits of automated parking technologies are only now being realized by city parking lots, airports, universities, shopping malls, and offices. RPA and its capability to connect, evaluate and automate data collected from devices are what makes smart parking a reality. Smart Parking includes the use of sensors, real-time data, and applications that help consumers to check available and unavailable parking spots. The final goal is to automate and reduce time spent searching for the ideal parking floor, lot, and spot. Some of the applications can even integrate a complete set of services such as parking time notifications, online payments, booking, etc.

- The systems provide real-time information to passengers who are using the public transport system. The expected time of arrival is shown on sign boards at the bus stands, Airports, and Railway stations. The same information can also be provided to the mobile device of users. This decreases the ambiguity about ETA and reduces the crowd in waiting areas.

- Smart Integrated cards is a technology that will allow users to pay for any type of transportation using a single smart card.These cards will open doors for multi-modal transportation with great ease.

- Electronic toll collection systems are based on Radio Frequency Identification which is read from a distance and the toll is deducted automatically at each entry. This save waiting time, long queues, and fuel costs for users.

- With the use of RPA in logistics, companies and customers can automatically track goods. Expected delivery time or any delivery delays can also be checked, thus helping companies to use RPA to manage inbound calls. This feature of RPA helps the resources of companies and helps in planning. It allows companies to automatically give responses to customers and vendors. The system does not require a human to deliver the information, thus reducing the chances of human error risk(10). The software also enables disruption management. In case of any issue or discrepancy, the system itself adjusts accordingly to accommodate the changes. If any major issue arises then the system would notify the required party or authority. The automated procedures increase the efficiency of business and society(5).

- Customers and vendors are not the only parties who are benefiting from RPA. This software helps all the parties in the freight management chain be it drivers, back-office people, or any other party. All supply chain partners can betterunderstand what's taking place to ensure needs can be met.

- RPA also allows the vendors in the transportation business to keep their inventory data updated. The efficient management of inventory linked with efficient flow of goods, overall makes the total logistic system effective(11).

- With RPA, report generation has also become very quick. This sector needs an enormous quantity of reports. Reports like payment status, vehicle update, customer feedback, order status, etc. Preparing these reports with such high frequency and quantity can be tiresome. RPA tools themselves extract data from the system and prepare the required reports. Therefore, RPA reduces the need for human intervention, leading to quick and error-free reports

- The transport sector has a huge chain of participants, thus appropriate and accurate communication plays a key role. This long chain makes communication among concerned authorities difficult. In this situation RPA chatbots RPA comes to the rescue, they automatically send the required updates via mail or notifications to the concerned authority. Chatbots also respond to customer queries, making the transport business smooth and satisfactory for customers(12).

- An indirect application of robotics in transportation is road maintenance. RPA automated systems can detect broken roads, and potholes and repair the roads in the earliest possible manner. Thus, making roads safer and faster and, indirectly helping the transportation industry to run smoothly(13).

4 Benefits of RPA in transportation

RPA has an abundance of benefits. Following are a few benefits of implementing RPA has the following benefits:

- Automation tools are faster than humans at completing jobs. RPA solutions speed up the execution of routine operations, allowing firms to cut down on process cycle time.

- Smart traffic management systems disperse traffic flows away from congested locations via push notifications that provide drivers with real-time information about city traffic. Chatbots can automatically generate online tickets, thus leading toefficient ticket management(14).

- Smart transportation is well planned and energy efficient. It directs the user to take the shortest route with the least traffic by analysing the real-time data collected via GPS and street sensors. Smart management leads to fuel saving, thus reducing the carbon footprint. The use of an intelligent management system considerably reduces empty miles, reduce jams, fuel consumption, and many other extra expenses. The system provides users (passengers, transport companies, shipping companies, etc.) with plenty of refined data, thus reducing irrelevant expenses and overall movement costs(15).

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- Logistics is all about order processing, and it involves a pile of paperwork and human intervention. This makes the processing time-consuming, and resource concentrated. To add to it, the human element brings errors with it. The use of RPA to complete the process makes it quick and efficient. The RPA bots themselves pick the required order data from the database and push it further to the transportation chain, making the process fast, error-free, streamlined, and updated. This efficiency also leads to savings in resources and capital.

- order processing, the next step is order tracking. Because of sensors and RPA, the orders can be tracked in real-time. Employees and customers will have fully updated information pushed by the RPA software. The software would keep track and dispense information to users from time to time, thus keeping

users aware of delivery dates and delays if any. In case the order is misplaced then it could be tracked with help of sensors and interpretation of data collected previously(7). Overall, the use of RPA makes performing business easier and increases the satisfaction level of customers.

- The transportation industry deals with a huge number of orders on daily basis and thus many invoices. Processing such a substantial number of invoices is a cumbersome task. With the use of RPA, the Invoice processing could be done in a structured form automatically. RPA can handle the whole process of invoicing through automated solutions for reading invoices, extracting information, observing the pending invoices, and making payments on due dates. The software also sends automatic emails to the parties involved to keep them updated about the status of the invoice(17).

- An intelligent and integrated transportation system leads to enhanced security, smart parking, and better information and communication. RPA cumulated with GPS and sensors allows smart traffic monitoring. Therefore, the overall connected structure makes roads faster and safer(18).

5 ROLE OF ROBOTIC PROCESS AUTOMATION IN SMART TRANSPORTATION

5.1 Actual Exception-Based Management

The foundation of robotic process automation (RPA) in transportation management is a straightforward idea: it imitates actions based on historical and current data to replicate human movements while using a supply chain management platform. Adapting to logistics is a "fast-growing technology that mimics human behaviour and has established itself in the financial services and hotel industries." Robotic process automation (RPA) is intelligent automation software that uses machine learning, natural language processing, and artificial intelligence to mimic the repetitive tasks that people do on a daily basis, such reading emails and quoting rates(**?**). RPA technology might eventually give every broker an assistant to execute lower-level duties, allowing them to focus on higher-level strategies." This allows personnel to focus on higher-priority tasks, eliminates the inconvenience of manually monitoring exceptions, and effectively reduces the demand for resources.

5.2 Lower Total Costs

Other potential Robotic process automation (RPA) uses in transportation management are around optimization capabilities. It may be used to examine, assess, and constantly improve systems and routes since it works independently and in the background of virtual settings. This feature naturally implies the use of freight forecasting capabilities and indices, as well as extracting more specifics about the projected time of arrival (ETA), selecting the best method for cargo, and so on. "RPA may be looked on as a tool for worker optimization, rather than workforce replacement," White adds(19). All of this reduces the overall landing cost of freight management and transportation.

5.3 Reduce Chaos by Sharing Data Within and Outsider

In order to apply RPA in transportation management, reliable information must be exchanged with the passengers as well as with other parties. Additionally, there are two methods to define customer service. The first is providing the shipment’s receiver with customer service. RPA may handle duties like as authorizations for return management, status enquiries, and complaints.RPA, on the other hand, may be utilised by freight management partners like agents, forwarders, and other logistics service providers to track team member performance, end booking delays by giving automation the reins, and save money. All of this results in more streamlined processes that use flexible rulesets and analytics to share information with partners in the supply chain and generate value. The benefits of using RPA to handle data input across systems are further highlighted by the applications of automated data entry and sharing, such as inputting cargo information collected via emails into a particular transportation management platform.

5.4 RPA's Potential in Transportation

In the current supply chain, RPA's usefulness and applications in transportation management will only grow. The capacity to use robotic process automation (RPA) in transportation will become an increasingly more significant competitive differentiate as the global supply chain moves towards total automation and maximum optimisation. However, enterprises must first put in place a complete transportation management platform.

5.5 Feedback And Automated Reporting

Others desire automated reporting information outside only shippers and their clients. RPA in transport aids in concentrating the efforts of drivers and other participants in the goods management chain. To guarantee that demands are satisfied, all supply chain participants can better understand what is going on. Automation guarantees that freight passes across the network as effectively as possible.

5.6 Fewer Transport Check Calls as a Result of Auto-Tracking Features

The capacity to automatically monitor products is one benefit of using RPA in transportation. Customers may check their accounts to see where their items are by logging in. Additionally, they might see if there are any shipping delays and when goods is anticipated to arrive. The opposite is also accurate. Therefore, companies may use RPA to handle incoming cheque calls. This helps with preemptive planning and saves a lot of money. For any deliveries that need a signature or for items that shouldn't be left unattended, for instance, the customer might make plans to be present(2).

5.7 Making Decisions Based on Insight

Improve its capacity to supply consumers with quality and efficiency. Keep drivers and partners up to date. Find out where the company is having problems with the shipment. Allow the system to automatically adjust to disturbances as they occur. Find innovative ways to automate additional operations to achieve success.

5.8 Inventory Management

Maintaining competitiveness is much more achievable when the proper transportation procedures are automated. Better inventory management skills and prompt inventory updates and maintenance provide businesses a competitive edge. RPA may be utilised efficiently in transportation and logistics processes. Reordering and procurement tasks may be turned into virtual processes that operate covertly in the background.

6 PROBLEM OF TRANSPORTATION SYSTEM

6.1 EMPLOYEES PROSPECTIVE

6.1.1 Workload

The management tries to maximise productivity from present workers by overloading them, while employees want to have less work given to them. Similar to how management want to pay workers less to save costs, workers want to earn more with less work. In any case, employee performance is important. Significant attention has been given to the issue, and several factors affecting employee performance have been researched. An empirical relationship between wages and achievement, business atmosphere and achievement, performance and stress, and workload and performance has been documented in many research.In reality, it seems like every worker is talking about the workload problem.

6.1.2 *Network optimization*

Network optimization refers to the entire range of technologies and tactics that a company uses to optimize the operation of its network domain. Employees encounter network optimization and connectivity issues If robotic process automation technology is not used. The network and network domain refer to your organization's collection of physical devices, as well as the software and supporting technologies that are unable to connect with the automobile and interact with one another(20). The goal of network optimization via robotic process automation is to deliver the best possible network experience for the origination and transport departments. Employees are experiencing network issues and applying businesses may begin to fix these connections.

6.1.3 *Inventory management*

Inventory relies on swiftly locating the proper item in the correct location. It is extremely difficult for employees to maintain stocks manually, and there is mismanagement in the supply chain. It has the potential to influence the entire production process. If the inventory stock is accessed for shipping and cannot be identified, it results in incomplete or incorrect shipments and has a negative influence on customer satisfaction(21). In any case, inventory visibility issues have a significant influence on business performance and are one of the indicators of inadequate inventory management.

6.1.4 *Resource planning*

The acquisition, allocation, and administration of resources such as personnel and their skills, funds, technology, materials, machines, and natural resources necessary for a project is referred to as resource management. Employees who lack the necessary skills to handle the transportation sector's resources face difficulties. Resource management guarantees that internal and external resources are utilized efficiently and on schedule. Resources can be accessed either internally from the host organization or other sources.

6.1.5 *Route optimization*

The period of time required to fulfil an order might be directly impacted by a failure to manage routes effectively. Additionally, it could lead to engine idling (when a car is stuck in traffic), longer commutes, and exorbitant car maintenance expenditures. A typical transport system requires a specialised staff to make hundreds of calls each day to get an update on the consignment'sprogress.

6.2 CUSTOMERS PROSPECTIVE

6.2.1 *Safety and security*

Physical security has recently been a top priority. While both attempts to exploit transportation security flaws, they do so for quite different objectives. Customers encounter several security and safety difficulties in transportation, as well as the robbery of logistical materials and other products. Safety is the most important service in the transportation business from the standpoint of the customer's personal and their products' safety.

6.2.2 *Lack of accurate information*

In a lack of accurate, reliable, and timely information, individuals and organisations will make poor decisions; they will be unable to guide or influence others to make better decisions; and nobody will be able to figure out if the decisions made by specific individuals or organisations were the best ones that might have been taken at the time.(22).

6.2.3 *Poor services*

Organising public transit effectively is challenging since it is a complicated industry with many moving parts. Service may be delayed as a result of a single mistake or delay at a single point in the chain, such as a driver's absence.(23).

6.2.4 *Time-consuming*

It may be incredibly difficult and time-consuming to locate information about commercial goods trucks and passenger-carrying vehicles.

7 Objectives

Followings are the main objectives:

- To study the opportunities of application of RPA for smart cities.
- To identify the factors affecting application and adoption of RPA for smart cities.
- To analyses the result of factors affecting application and adoption of RPA for smart cities.

8 Hypotheses of the study

H01: There is no impact of awareness of RPA on satisfaction of adoption of RPA for smart cities.

H02: There is no impact of transparency through RPA on satisfaction of adoption of RPA for smart cities.

H03: There is no impact of effective adoption through RPA on satisfaction of adoption of RPA for smart cities.

H04: There is no impact of proper utilisation of RPA on satisfaction of satisfaction through RPA for smart cities.

9 Data Analysis and Interpretation

The data analysis and interpretation are explained in the following tables:

9.1 Data Analysis

The values of skewness and kurtosis were in the range i.e., ±3 hence, the data is found as normal. In the data multicollinearity is detected but the variables are correlated. In this research, SPSS AMOS was used for data analysis. To check common method biasness, Harmans single factor test has been used. In this data, biasness is not found as the total variance obtained by one factor is 37.24

9.2 Measurement Model

To assess measurement model, CFA was used. The drawn model shows a good fit as chi-square value is 1674.267 at 485 degree of freedom and the value is also significant as it is showing as $p < 0.01$; RMSEA is 0.044; NFI is 0.94; CFI is 0.95; GFI is 0.93; AGFI is 0.91. The reliability of research factors is 0.894 which shows higher reliability of data. The correlation among independent variable shows 0.79 which defines discriminant validity of data.

9.3 Structural Model

To test the hypothesis of data, Structural Model was applied. The model represents a good fit with chi

square value is 1792.741 at 485 degrees of freedom. The value is also significant as p < .01; RMSEA is 0.039, NFI is 0.91; CFI is 0.92; GFI is 0.90; AGFI is 0.90. All the values shows that the model is quite fit. As it is shown in the table no 3, awareness of RPA does not support satisfaction through adoption of RPA (H1 is accepted). Transparency through RPA; effective adoption and performance upgradation through RPA have positive impact on satisfaction through adoption of RPA (H0 is rejected). The satisfaction through adoption through RPA does not support actual utilisation of RPA resources (H0 is rejected). This analysis shows that the robotic process automation is very essential in managing the effective management in smart cities and increases the efficiency and capacity among the employees and parties which are directly and indirectly involved in it.

Table 1. Reliability, Factor Loading and AVE

Construct	Indicator	Factor Loadings	Cronbach's Alpha	AVE
Awareness	AW1	0.545	0.63	0.42
	AW2	0.572		
	AW3	0.562		
	AW4	0.534		
Transparency	TP1	0.786	0.82	0.54
	TP2	0.764		
	TP3	0.892		
	TP4	0.877		
Satisfaction	SF1	0.886	0.84	0.67
	SF2	0.873		
	SF3	0.869		
Effective Adoption	EA1	0.812	0.81	0.55
	EA2	0.837		
	EA3	0.762		
	EA4	0.847		
Performance Upgradation	PU1	0.892	0.94	0.68
	PU2	0.922		
	PU3	0.875		
	PU4	0.858		
Actual Utilisation	AU1	0.786	0.88	0.75
	AU2	0.761		
	AU3	0.827		
	AU4	0.833		

Table 2. Correlations

Constructs	1	2	3	4	5	6
1. AW	0.42**	-				
2. TP	0.379**	-0.319*				
3. SF	0.302*	-0.402*	0.872*	-		
4. EA	0.427**	-0.332*	0.812**	0.847	-	
5. PU	0.231**	-0.354*	0.719**	0.765**	0.715**	-
6. AU	0.242*	-0.323**	0.721**	0.841**	0.811**	0.827**

Table 3. Structured Model Result

	Hypotheses	Path Co-efficient	t-statistic	P Value	Inference
H1	AW→SF	0.107	5.69	>0.05	Not Supported
H2	TP → SF	0.239	3.14	<0.001**	Supported
H3	EA →SF	0. 389	2.16	<0.001**	Supported
H4	PU →SF	0.372	2.39	<0.001**	Supported
H5	SF →AU	0.294	2.65	<0.001**	Supported

10 Conclusion

The capabilities and benefits of robotic process automation have been presented in this article to help you develop a smart robotic transportation system. A city-by-city review of robotic process automation adoption to address transportation concerns shows that most industrialized countries have quickly embraced these technologies.Since it requires senior management commitment and long-term vision, its adoption requires the support of the different companies and leadership. For one of two reasons—either they are worried about the risks associated with robotic adoption or there is a low level of technology adoption in these countries—some companies and governments are still reluctant to embrace robots. It has been noted that wealthy nations adopt transport management technologies quickly.

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