APPLICATION OF ROBOTIC PROCESS AUTOMATION (RPA) IN SUPERMARKET

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ABSTRACT

The ongoing expansion of information technology and the growing use of artificial intelligence in today's modern supermarkets have a significant impact on how people live. The grocery industry is looking into new ways to increase profitability through the use of artificial intelligence and information technology, which has led to more limited possibilities in the field of robotic accounting. In order to fully automate the accounting process, there are a number of uses for artificial intelligence that will be explored in this article. The problems and solutions for this usage will also be identified. This essay discusses a few of the potential and difficulties that supermarket robotic process automation faces. The issues of managing line-ups and the billing system at supermarkets effectively have led to the development of automation and the application of artificial intelligence as powerful tools. A pandemic that hit the world recently highlighted the necessity of automated processes with little to no human involvement. This article's goal is to analyse the parts of robotic process automation that supermarkets could use and to comprehend the difficulties in implementing automated operations. Robotic process automation has become crucial for the development of global economies as a result of technological improvement and information technology development. As the country becomes more urbanized, supermarkets offering a variety of consumer items under one roof are proliferating.

Keywords: Robotic Process Automation, Artificial Intelligence, Information Technology, Business Environment, Supermarkets.

INTRODUCTION

Many supermarkets have only recently implemented cutting-edge technical and scientific developments. Supermarkets automation processes have altered rather gradually. However, the firms still rely on robotic knowledge and paper-based work, which has its own drawbacks and difficulties. Since "Artificial Intelligence" can now be used to the automation process of supermarkets, which results in the automation of robotic duties, there has been a tremendous improvement in the field of supermarkets. It would be of unimaginable benefit to use cutting-edge technology to develop robotic processes automation because they would dramatically reduce the amount of time required for automation. However, the retail industry, especially supermarkets, has been slower to accept new technology. The main cause of this legging behind is reportedly a dearth of research in the field and a lack of funding for the development of artificial intelligence to meet consumer expectations. The study of individual customers is a challenging endeavour since people are incredibly unpredictable and their behaviour and choices vary from person to person and location to location.

REVIEW OF LITERATURE

The investigator can acquire knowledge from along with gain knowledge obtained from earlier theories on the issue thanks to an effective literature study. Study conducted by Singh, & Singh (2014) based their study on the consumers buying decision of private label

brand. Similarly, Kamat, (2019) study is based on income on the shopping habits of consumers with respect to shopping malls focused on Human guided smart shopping cart system for shopping mall in the micro-market of Whitefield. this study is limited to International Journal of scientific and research publications. Ahuja & Tailor (2021) is based as application of Robotic Process Automation in Unorganized Sector. Kumar & Tailor, (2020) is focused on application of robotic process automation in queue management system of shopping malls of Rajasthan. Study conducted by aims at understanding challenges of automation adoption in banking and financial services. Similarly, Abhishek & Divyashree (2019) based their study on business and financial information in accounting and auditing only. Rao, Abhilash Nissankara (2019) conducted study on one city and only one mall has been selected. Ahuja, et al. (2019) study is based on multi-server queue, balking, optional service and finite population. Osaremwinda, et al. (2018) focused on ATM Service queues only this study is limited to queue management using conveyor belt and sensors at public or holy places.

Concept of RPA in Supermarkets

In India's urban and suburban areas, supermarkets and retail establishments are a recent development. Before the concept of supermarkets and retail outlets emerged, people had to travel from store to store or shop to shop to buy various goods, making shopping a difficult task. Now, almost all FMCG (Fast Moving Consumer Goods) are available under one roof. Supermarkets and other retail establishments have grown as a result of rising urbanisation and middle-class consumers' rising spending power at a time when globalisation is at its height. In the world of supermarkets and retail stores, robotic process automation (RPA) is a new idea. RPA has lately gained popularity in the BPO and KPO industries, but the use of automated processes in the retail and consumer products industries is relatively new. As a result, fresh research and applications are urgently needed. To meet the needs of supermarkets and retail establishments while minimising human intervention and saving time, RPA requires the creation of software and applications. Processes like queue management and billing are greatly aided by artificial intelligence Kumar & Tailor, (2022); Kumar & Tailor, (2022); Reddy et al. (2019).

Advantages of Supermarkets

Supermarkets provide a variety of options. It allows customers the freedom and opportunity to choose their own products from a variety of available possibilities, free from outside pressure. It lists fixed, non-negotiable selling prices for the products. Customers have faith in businesses since prices are the same for everyone and there is no room for negotiation. The supermarkets offer a wide variety of brands and items, giving customers many choices. Since supermarkets are brands in and of themselves, they provide goods of a standard caliber. Customers trust the reputational supermarkets' products to be of high quality. While keeping the profit margin low to draw in more customers, it offers items at competitive and cheapest pricing. However, overall profits are significant due to the volume of goods sold. They buy products straight from the manufacturer at very competitive pricing because it is a large-scale operation, which increases earnings. Since supermarkets operate on spot payments, there is no worry about bad debts Tailor & Kumar (2020).

Disadvantages of Supermarkets

One important disadvantage of this business module is the need for enormous resources to create and operate supermarkets because they require a wide range of products

and brands to be accessible under one roof. It needs a lot of area to operate properly, which is a major issue, especially in major cities. Customers are left to make their own decisions in supermarkets because there are not enough salespeople employed there. Most clients require the assistance of salespeople in order to make decisions. Due to their perishing nature, sales of perishable items including vegetable, dairy, and meat products are less successful than those of other goods. Supermarkets only accept cash or quick payments; this is a significant drawback. Because there are far fewer salespeople employed, there are far less employment chances in supermarkets Nair (2018).

Objectives

The study's aims are as follows:

1. To investigate robotic process automation prospects in contemporary supermarkets.

2. To study the robotic process automation implementation elements.

Hypothesis

H_0:   *There is no understanding of robotic process automation in supermarkets.*

H_1:   *There is adequate understanding about the robotic process automation in supermarkets.*

Research Methodology

Universe   :   Users of supermarkets in Jaipur

Sampling   :   Convenience sampling method

Data collection   :   Structured questionnaire through online

S.NO	Statements	% of Responses		
		Agree	**Neutral**	**Disagree**
1	Robotic process automation (RPA) is helpful during shopping.	80.00	13.00	7.00
2	The performance of employees of supermarkets has increased after implementing Robotic process automation (RPA).	78.00	13.00	9.00
3	The customer satisfaction has increased with Robotic process automation (RPA).	77.00	17.00	6.00
4	The overall service quality of supermarkets has been improved after implementation of Robotic process automation (RPA)	76.00	18.00	6.00
5	Robotic process automation (RPA) has made supermarkets more organised and easier to access.	76.80	16.20	8.00
6	Robotic process automation (RPA) is helpful in minimizing the waiting time for billing supermarkets.	74.00	22.00	4.00

Table 1
Respondent of Responses

7	The application of Robotic process automation (RPA) in supermarkets is helpful in inventory management and Realtime stock information.	72.80	21.20	6.00
8	The Robotic process automation (RPA) can be applied for queue management.	68.70	22.20	9.10
9	Application of Robotic process automation in queue management in supermarkets will help in stress free shopping experience.	77.00	17.00	6.00
10	The application of Robotic process automation (RPA) in supermarkets can enhance overall customer satisfaction.	74.00	21.00	5.00
	Average Response	75.43	18.06	6.61

* Agree includes Strongly Agree

** Disagree includes Strongly Disagree

Data Analysis and interpretation

The table represents the response collected from 100 respondents regarding awareness of the robotic process automation and its usage in the supermarket. For example, in response of question no. 1, 80% of the respondent believes that RPA is helpful during the shopping whereas only 7% disagreed from this point of view and 13% were neutral. In respect of the question no. 2, 76% of the respondents believes that RPA has increased the performance of the employees in the supermarkets whereas only 9% of the respondents disagreed. On the question of Stress-free shopping experience at sr. no. 9, 77% respondent agrees that RPA is helpful in stress free shopping experience. Similarly, in response to the question no. 10 regarding application of Robotic process automation (RPA) in supermarkets to enhance overall customer satisfaction, 74% of the respondents have given positive response while only 5% have given negative response. However, 21% of the respondents are neutral on this aspect. It transpires that a whopping 75.43% of the respondents have given very positive response in respect of usage of RPA in supermarket and its application for enhanced customer satisfaction, experience and management of the supermarket and only 6.61 percent of respondents disagreed. It is noteworthy that 18.06% of the respondent remained neutral.

CONCLUSION

RPA is being used and applied more frequently in various supermarkets. While automated procedures have advanced significantly in some industries, like retail and banking, they have done so much more slowly in others, like the healthcare and education sectors. Lack of information and study on the topic, as well as the fact that existing research does not address the constraints and challenges in developing algorithms in the robotic field, are the main causes of such an uneven distribution of technology. There has been a digital revolution in recent years, and the Indian government is promoting digital payments, start-ups in the banking and finance industry, and the creation of AI-based apps, all of which have accelerated the adoption of RPA across all business sectors. To use RPA for corporate growth and customer pleasure, however, a lot of ground must be covered and government, customers, and other stakeholders must be motivated.

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