Automation and Robotics in Workplace

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Abstract

In the current research study, the impact of automation and robotics on the employees and overall productivity of the organization has been investigated in detail. As a methodology, the interviews were conducted with a total of 5 participants. All five managers were chosen from the professional organizations because they had vast experience and better knowledge about the field of information technology. The results of the study showed that automation and robotics will have a negative impact on employees because it will cause a large number of existing employees to lose their jobs. Moreover, the automation and robotic technology is expected to bring a positive revolution by increasing productivity and providing cost effective solutions to a large number of organizations. The results of the current study were clearly aligned with the findings of the past researches. The implications of the current research showed that robotic and automated technology can help to enhance the overall productivity of the firm to a greater extent.

Keywords: Automation, Robots, workplace

1. Introduction

1.1 Introduce the Problem

Low work productivity is considered as one of the major problem in large number of organizations. As human beings can handle only limited number of tasks, the productivity of the organizations gets seriously impeded. It is important to address this problem because it will help to resolve productivity issues in organizations. The adoption and implementation of

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automation and robotic technology will help to increase overall productivity in organizations.

In past researchers, it has been reported that revolution in the form of robotic technology is backed by the breakthrough technology convergence such as Internet of Things, robotics and artificial intelligence (Desley, 2018). In past, little research has been carried out to measure and investigate the use and impact of automation and robotics on employees within organizations. Moreover, only few researches have been carried out to investigate the impact of robotic and automation technology on productivity of the organizations. The hypothesis that is to be tested in the current research is:

H1) Automation and robotic technology has positive impact on employees of organizations.

H2) Automation and robotic technology has positive impact on work productivity of organizations.

The basic objective of the current research is to investigate the role of artificial intelligence to measure the effects and use of automation and robotics on employees of the organization. The research is also focused at investigating that how automation and robotics can improve overall productivity of the organizations.

The practical and theoretical implications of the current research shows that it will help to bring cost savings and higher productivity within organizations. Moreover, it will also improve communication with employees in a natural processing language through the use of smart agents.

1.2 Explore the Importance of the Problem

It is highly important to explore the problem because a large number organizations are facing the problem of low productivity and less efficient work performed by human beings. Although

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the implementation of robotic technology and automation result in job loss for a large number of individuals, but it will eventually provide benefit in the form of increased cost savings and increased productivity. By resolving the problem of low productivity, the organizations can become able to make large profit stream in long run.

1.3 Describe Relevant Scholarship

It has been demonstrated by Desley (2018) that the traditional kind of automation in business processes has been carried out on the basis of predetermined set of requirements. The best illustration of traditional automation processes include Supply Chain Management, Customer Relationship Management and Enterprise Resource Planning that were extensively adopted and used by a large number of organizations. These techniques were generally taken into consideration to aid enterprise knowledge workers so that they can improve flexibility and quality, enhance productivity and generate higher output. It has been demonstrated by Francesco, Ekkehard & Enzo (2018) that robot use is rapidly increasing in both emerging and developed states across the world. The concept of robotization offers a better proxy about the effect of automation for performing different mechanical activities, which however, represents only a subset of activities performed by human workers. The results of the study showed that robotic technology has brought significant reduction in the employment at global level, which has been recorded to be 1.3% from 2005 to 2014. The effect is significantly less in comparison to developed states, which has experienced a reduction in employment of -0.54%, however it is significantly high in emerging states with approximately 14%. It has been concluded by Francesco, Ekkehard & Enzo (2018) that in developed countries, the

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robotization negatively impact the employment, offering the initial evidence of cross country impacts through re-shoring driven via robots.

In a research conducted by Georg & Guy (2015), it has been demonstrated that industrial robots are effective in terms of value addition and increased productivity of labor. The results of this research reported that the increased robot use has made significant contribution to the growth of economy. Particularly, it was reported that densification of robots has increased both total wages and total factor productivity. Although no significant impact of industrial robots on overall rate of employment was observed, however it became quite evident that the implementation of robots throw out the middle skilled and low skilled workers in the organizations (Georg & Guy, 2015).

It has been demonstrated by Jesus & Ana (2019) that one of the major benefits linked to robotics is that it helps to bring considerable improvement in the working conditions of workers by enabling them to execute less repetitive activities and preventing exposure to hazardous activities. It has been recommended by Jesus & Ana (2019) that certain sources to reduce risk should be taken into consideration so that expected contact between the robot system and employee do not cause any harm to the employee. Different measures have been proposed to achieve this objective. These mainly included: 1) recognizing the situation in which contact will take place, ii) evaluating the expected risk of such contacts, iii) identifying the collaborative space and the robot system so that such contact is avoidable and infrequent, iv) considering the measures of risk reduction that sustain situation of contact below the values of a specific limit.

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1.4 State Hypotheses and Their Correspondence to Research Design

In the following section of the report, the hypothesis have been developed.

H1: Automation and robotic technology positively impacts the workers in an organization.

H2: Automation and robotic technology has a positive effect on the overall productivity of the organization.

The hypothesis developed in the current research have a strong correspondence with the research design because these hypothesis will help researchers in drawing inferences that how automation and robotic technology impacts the workers of the organization and how they help to enhance the overall productivity of firms.

2. Method

In the current research study, the internet was used to access a large number of journal articles. Moreover, different other tools were also taken into consideration to conduct the research. These mainly included internet connection, computer, the market, pencils and documents. The validity of the resources were evident from the fact that they were published in well authenticated journal articles.

Moreover, in order to measure the impact of automation and robotic technology on workers and also on the overall productivity of the organizations, some interviews were conducted to analyze the viewpoints and perception of professionals in the industry.

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2.1. Participant (Subjects)

A total of 5 managers were selected for the purpose of conducting the interview. Each manager had a vast experience in the field of information technology. They fell in the age bracket from 35 to 60 years.

2.3 Sampling Procedures (Measurement Approaches, interviews)

The research study followed stratified sampling in which the participants were chosen in accordance with their experience in the field of information technology, the knowledge about the use of robotic and automation technology and the knowledge they about automation and robotic technology. As the percentage of the interviewers who took participation in the interview process is concerned, all 5 managers took active participation in the interview process. The data was conducted in non contrived environment, where the researcher did not change the natural environment of the place in which the interview was conducted. The researcher did not pay any amount to the participants.

2.3.1 Sample Size, Power, and Precision

The same size was five in number. The achieved sample had same characteristics as rest of the targeted population.

2.3.2 Measures and Covariates

Interview was used as a method to conduct the research study. The interview mainly consisted of 5 items in which most of the questions were raised about the impact that automation and robotic technology will bring in the future workplaces. Moreover, the interview questions also measured the impact of automation and robotic technology on the overall productivity of the

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firms. No training was provided to the participants.

2.3.3 Research Design

The current research followed the qualitative research design in which interviews were conducted to analyze the impact of automation and robotic technology on the productivity of the firms. The subjects were placed in non-contrived (natural) environment and they were not manipulated by the researcher.

3. Results

The results of the current research were aligned with the past research studies. Based on the results obtained from the current research, it was analysed that automation and robotic technology will bring a new revolution in every field of life.

According to all five managers, the use of automation and robotic technology will result in the loss of many jobs, but it will prove to be highly beneficial for the organizations. According to one of the participants, robotics and automation will bring new job challenges for all organizations and it will require companies to hire new skilful and talented candidates to deal with the advanced problems arising out of the automation and robotic technology.

As the question about the use of robotic technology and cost effectiveness was raised, four managers held a similar viewpoint while one of them presented a different side of the same situation. All four participants stated that robotic and automation will bring cost effective solutions for the organizations, but only one participant stated that the use of robots in organizations will increase the overall business costs of the firms. According to him, the robotic technology needs huge investment and these technological tools would require continuous

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repair and maintenance services to ensure the better performance of company's operations.

As the interview proceeded further, the researcher raised a third question about the association between the use of robotic technology and productivity of the firm. There was a positive response on the part of all interviewers as they stated that robotic technology will spur the productivity of firms to a greater extent. They further added that the use of robotic technology which would help organizations in achieving financial objectives in the short run.

The fourth question was raised about the impact of automation and robotic technology on the employees of the organization. There was a mix response obtained from all participants. Two participants held a viewpoint that automating the organizational processes would positively impact employees because companies will still be in need of human workers to operate the robots and automated technology. They further added that robotic technology will require the services of highly technical employees who will get better salaries than previous workers. On the other hand, rest of the three interviewers reported that automation and robotic technology will prove to be destructive for the employment sector. It will result in job loss for a large number of people because human work will be replaced by the robots and other automated technologies.

The last question was about the complexities involved in using robotic and automated technologies across the workplace. Two interviewers reported that the se of robots will complicate the operational processes of the organization. It will eventually give rise to complicated technical issues that might take some time to get resolved. Such delay in repair and maintenance services can reduce the productivity of the organization because robots will no longer be available to perform the desired tasks. On the other hand, rest of the three interviewers

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reported that automation and robotic technology will provide convenience and the robotic technology will only be implemented when possible solutions for expected complexities will be provided by the organizations.

4. Discussion

Based on the entire results, it can be stated that robotic technology and automation is going to bring a revolution in different sectors. Hypothesis 1 has not been supported by the results of the current study because the responses obtained from the interviewers clearly showed that a large number of employees will lose their jobs after the implementation of robotics in various manufacturing and industrial sectors. Based on these results, it can be concluded that the use of automation and robotic technology will negatively impact the workforce.

Hypothesis 2 “Automation and robotic technology has positive impact on work productivity of organizations”, has been supported by the results obtained in the current study. While conducting interviews, all participants held a similar viewpoint that automation and robotic technology will improve overall productivity of the organizations. It will help organizations to increase their productivity in cost effective way.

The results of the current research have been supported by the past researches. For example, it has been demonstrated by Rolleman (2016) that job loss in future may be considerably greater than in the past because all kinds of activities will be impacted, rather than only low skilled workers. It shows that past researches have clearly manifested that automation and robotic technology will have a negative impact on the employees of the organization.

Although automation and robotic technology has proven to be really helpful in improving the

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productivity of the organization, but there are certain barriers to the implementation of such technology. Some of these barriers might include: maintenance, updating and initial costs, size and fragmentary nature of the business, difficulty in developing and using technologies, incompatibility with current practices and operations, low literacy of using robotic technology, difficult replacement or repairing of the robotic and automated technology and difficult acceptance of advanced technology by workers.

The major limitation of the current research is that it did not perform any quantitative analysis to measure the results. As it is a qualitative study, hence, interviews were conducted with the selected participants. Another major limitation of the current research is that it has low generalizability due to small sample size. In future studies, the interviews can be conducted with more than five participants to get accurate results. The sample used in the current study has clearly represented the targeted population.

The findings of the current research were important because it explained the impact of using automation and robotic technology on employees as well as on productivity of the organizations. Although it has been reported that the introduction of robotics will result in increased loss of job, but at the same time the use of robotics will have a positive impact on overall productivity of the organizations.

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References

Desley var der, Z. (2018). Robotic Process Automation: An Employee's Perspective. University of Amsterdam.

Francesco, C., Ekkehard, E. & Enzo, W. (2018). Robots worldwide: The impact of automation on employment and trade. International Labor Office. Retrieved from https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_648063.pdf

Georg, G. Guy, M. (2015). Robots at Work. CEP Discussion Paper No 1335

Jesus, R. M. U. & Ana, B. M. R. (2019). Robotics and Health and Safety at Work, 8 (1).

Rolleman, A. (2016). Exploring consequences of robotics for the labour market. A microeconomic approach. Radboud University

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