



An Empirical Study On Factors Determining Displacement Of Jobs In Automation Sector In The Current Scenario

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Abstract

The advent of AI, RPA and all the cloud-based technologies is ready to dispose of millions of current job positions and even have the tendency to make a huge number of new ones. Technically the entire globe is driven by technology and innovation. People have become habituated to a comfort lifestyle (Abi Ghanem & Mander, 2014). As these advancements add on to the efficiency and make jobs easier in our lives, their utilization will fill in for some of the tasks performed by people right now. This is an improvement in technology which has created a lot of public concern. Switching from manual labor to automated robots used by industries seems much easier and convenient for carrying out the repetitive and monotonous jobs. However, the risk associated to the automated machines is just as simple as it seems. There is a lot of anticipation on the fact that automation will consume the jobs of workers from the market and the labors seeking jobs shall be devoid of jobs even more. On the other hand, the labors not yet fired are also affected by the fear that they would lose their jobs in near future and their work shall be done by robots. Presently, the situation of fear and anxiety is leading to higher level of dissatisfaction among workers, so ultimately the production gets affected (Goswami, 2015). There is a negative impression being carried by employees for automation which is adversely affecting them as well as their careers. Sample of 199 people from different industries and organizations were surveyed to know the factors that determines the role of automation in displacing jobs and the impact of automation in present job market setting. It is found that customizable and cost effective, high productivity, efficient and high quality performance are the factors that determine the role of automation in displacing jobs and there is a significant impact of automation in present job market setting.

Key Words: Automation, Job Market, Job Displacing, Efficiency, Productivity, Cost Effectiveness.

Introduction

The technology has driven the world to a place where anything and everything is accessible to people from anywhere in the world. The mundane repetitive tasks which

were earlier done by humans have an automated intervention to it and the process is so much easier that one need not worry about boring work anymore. Not only in a personal sense, but also in the work, the business leaders are influencing the individuals to engage their minds in innovation and design thinking. However, with comfort there comes difficulties in the system as well which shall be dealt with in this paper. Different kinds of illustrations are available for automation in the job scenario, especially the technological advantages. These offer automated features such as self-driven cars, X-ray detecting machines, various scientific calculators and so on and so forth (Shen et al., 2021). Many more innovatively designed products are being launched in the market with automated software to meet the requirements of the clients.

Automation has its foot in almost all the fields be it healthcare, hospitality, production, banking and so on and so forth. While business analysts frequently consider the impacts of automation as far as regardless of whether it makes or obliterates occupations, less consideration is paid to how it changes occupations and the wages paid to the laborers who have the responsibility to perform them. There are situations where digitalization of processes can make more lucrative positions in the market for jobs. But, even more it drives the compensation for workers down (Stanford, 2017). For organizations considering various tools and techniques tied on to automation for the daily routine tasks, this can appear to be an aid, as cost reserve funds on the operational work can expand edges. Yet, there are additional drawbacks that come along these kinds of jobs, as organizations might wind up in a difficult situation when these automated jobs are fundamentally disturbed. Further, some technical errors might occur which need to be rectified well on time.

As per many studies, there will be more job positions made over the course of the following years to come that would then be lost via digitalization by the rate at which developments are occurring. The test confronting world pioneers and strategy creators following the COVID-19 pandemic will be to ascertain that people aren't neglected in the hurry to revamp the world economy and the nations. Corona virus has made its way into the global economy by also acting as a catalyst to speed up the process of technological disruption into the age of the Industrial Revolution 4.0 (Chiles et al., 2021). We need to ensure that the new advances in all aspects especially the biological, physical as well as digital world stay human-focused and serve the entire society all in all, furnishing everybody with reasonable access to all the necessities in life.

Modern advanced mechanics artificial intelligence in the industry has progressively been utilized in the manufacturing activities over the recent years. This has prompted the computerization of many different routine activities that were recently completed by laborers, and that would now be able to be performed by shrewd machines. Along the same lines, there is also a fear that probably these mechanical advances might have sensational results on the fate of work. It has cultivated the improvement of new financial aspects research concentrating on the impacts of automation in the domain of

industrialization or businesses. The recent business models and observational surveys on this subject show that the advent of automation can have a direct or indirect impact on the business interest and the monetary compensation for employees, and especially so for laborers that perform schedule-based jobs in the companies that can even more effectively be uprooted because of this new technologically driven job structure (Furman & Seamans, 2019). Then again, in any case, these new advances may likewise have beneficial outcomes by expanding efficiency in the organizations.

This paper has up to this point stayed focused about automation. Its direct as well as indirect impact with the perusal of computerization, modern robots and machine learning algorithms has spurred the entire workforce. This is affecting the interest in jobs and wages. Nonetheless, while business and wages are two focal aspects which are encircling the career of individual worker's prosperity, it is additionally vital to call attention to those other non-financial investors to have an interest in shaping laborers' affluence and that robotization may conceivably critically affect these (Hanelt et al., 2015). There is a genuine fear prevailing among the individual workers related to the jobs being automated at a greater pace. The support groups of these workers are the labor unions, and their concern is literally focused on the well-being of the workers (Hall et al., 2019). They are finding ways to mitigate such issues so that the workers can have proper jobs that will help them in sustaining their livelihood.

The prime agenda of the connection of robotization and the satisfaction related to work is that the inclusion of modern robots in the indigenous job markets shall influence the set expectations of the employees regarding their future positions, for example it will lead a few laborers to expect that their function of the work entrusted with may be supplanted by a shrewd automated machine in the years to come. The subsequent aspect which the paper has taken into consideration is the expectations from the job markets. Overall, the outcomes generated from the surveys add to, and expand, the factors affecting labor markets because of the ongoing trend of everything being automated or digitization and work by focusing more on the harsh impacts that job losses are creating on human emotions (Marek et al., 2020). These are genuinely being reflected in the job satisfaction levels of these individuals which ultimately become a cause of low production, and significant loss for the companies. The reviews from various authors demonstrate that robotization in modern firms lately has incited laborers that are as of now in work to expect that their work may be supplanted by automated tools in the future.

Literature Review

Artificial Intelligence, Robotization, and all the digitized technologies built on complex algorithms as well as reasoning have over the most recent couple of years experienced generous advances. These have tracked down an expanding number of automated machines; machine learning algorithms and technology in the manufacturing, which have created as two unmistakable logical as well as innovative fields for quite a while. As of late they have combined and cross-prepared. Automation is a broad term and the jobs

which fall under the category of automation may differ (David, 2015). The main analysis must be based on the level of understanding of the pre-existing technologies that the workers have and thereafter doing a training need analysis to find out how well they can be trained to adapt to the new technologies. However, there is a need to understand that with technology boosting and automation taking shape in the industries there are several pros and cons lined to it. Even if jobs are getting lost due to some cause, there is creation of new jobs in the market as well. The demand for workers is rising simultaneously because of few catalysts. The first reason is the increase in the consumption class of people. Along with this, there is a dire need for working class people in healthcare. The implementation of automation in the firms also requires workers, deployment of the technological products and to make the working environment facilitated with IT support there is again a scope of hiring people (Tschang& Almirall, 2021). The demand for individuals in the real estate companies is also growing because investors are considering it a good place to invest. The good part about automation in the job market is that with automation in place, the working individuals can safely and securely work on-site, zero hassles and efficient work. It may seem like a possible threat to the livelihoods of people. But, there are chances of gelling up with technology to produce better outcomes.

The authors suggest that there are some industries which are at a greater risk of job losses than the others because social and personal needs of human beings are eradicated with the use of automation in every process. Therefore, many individuals believe that an automated work environment is introduced by investigations of the work polarization speculation (Gruel& Stanford, 2016). To put the idea forward in simple terms, the fundamental thought of this study is that digital innovations supplement profoundly the mundane work, clarifying its usability in the business arena and development of the salary structure lately in most innovative as well as developed nations. However, the labors who are low-skilled or semi-skilled are being even more adversely impacted by the new techniques especially the manual jobs that have been side-lined by the automated softwaresuch as RPA, IPA, BPA and so on and so forth on the grounds that their assignments are generally simpler to mechanize (Mookerjee, 2021). An intellectual contends anyway that the interest for high-skilled and technically sound laborers has declined at a huge rate after the year 2000 because of diminishing re-visitations of interests in data and correspondence especially in the ICT domain. The individuals who are highly skilled have then started to go after bringing down the job positions requiring more skilled employees. This review, however, depends on the observed and explicit records on the impacts of AI and robotization on the existing jobs.

Individuals regularly envision robots working inside the production workspace when one talks about automation. A critical variable to see, nonetheless, is that digitalization and automation are two separate things. Indeed, hybrids exist between the two, yet to see the value in the subtleties of the innovation; it's a smart thought to keep them differentiated. Automation is the term used while describing or portraying an interaction or any kind of task performed by programming or a machine which is normally accepted

and used by a human (Beer et al., 2014). It very well may be mechanical or virtual; basic or confounded. Advanced technologies like automation are a part of the innovation which simply is connected to the work done by systematically designed technology. It follows a set pattern and completes the tasks that had been programmed in a certain manner, while RPA is a technology keen on planning and building robots which will function in a different manner to carry out the jobs which were previously done by humans shall now be done by bots. While robots might mechanize a few errands, in the primary, they have practically nothing to do with the automation of jobs outside of modern settings. Furthermore, even inside these manufacturing plants, different sorts of machines are operated which don't go under the advanced mechanics standard. In the industrial scenario, there are different uses for robots and other mechanized machines in the modern settings. 3D printing is an undeniable model, as are independent vehicles for the operations of the logistic function (Hur et al., 2018). Yet additionally, explicit automated machines are utilized in perilous conditions including something known as 'cobots,' which gets closed by people, helping with hard work and other possibly risky undertakings. Programming for the automated software likewise assumes an inexorably fundamental part in the functioning existences of people and there are varieties which are worth considering.

The processes of business operations can be automated as well. This is particularly known as Business Process Automation or BPA (Jovanović et al., 2018). It includes an association taking its entire essential non- cycles of production in manufacturing firms and looking for ways of further developing effectiveness via the process of automation. Different programming devices are utilized across regions like accounts management, human resources, and other functions, basically making an administrative center capacity without individuals intervening in these processes. In the similar way, under the umbrella term of automation there is another category, called as RPA. Different from the mechanical form of mechanical technology of automation, RPA is the term given to more significant level computerization, where programming is utilized in specific conditions to increase process execution and perform complex assignments (Alles & Gray, 2020). Rather than being a part of a BPA arrangement, it satisfies an essential capacity in one basic region. For example, client request handling, an eccentric speculation, rather than focusing on business upgradation. Though RPA is follower to guidelines which have been previously set, IPA programming is coherent to Artificial Intelligence to figure out how to create exact copy of human made decisions in the organizations and convey optimized results (Lee et al., 2020). One more part of IPS is the experience of machine learning. It is a sort of AI that empowers the automated systems to adapt to the conditions, change accordingly and even test various methodologies dependent on the recovery of pertinent information. A lot of studies confirm that most of the jobs in the market shall be consumed because of the technologies coming forth. It is difficult to imagine that a major part of the jobs that is, nearly 1.8 million positions shall go inside the following two years, and thereafter in the coming ten years that figure increments by a large portion of at least 1,000,000, which is hard to acknowledge. In any case, change is coming, which is

inevitable, and as the innovation portrayed in the past segment turns out to be more predominant and implanted inside various areas of the economy. The UK administrative bodies talk about diminishing expense of AI authorizing models and sensors, just as rising work costs as driving advancement of and interest. While automation is being accepted and implied in industries, it could be very well sweeping the pre-existing and conventional manual jobs.

Outside of the manufacturing industry, low-level regulatory capacities for the workers will no doubt decrease for the time being. Information section, investigation, and office support occupations notwithstanding some client association, will be quick to go. In its instructions paper, the Government features as to how innovation could assist organizations with overseeing expanded responsibilities and convey quicker as well as more exact administrations. Chatbots which is an illustration of IPA innovation are an apparatus previously entering standard business practice (Kim & Kwon, 2018). The build yearly development pace of chatbots is 24%, for certain examinations showing more than half of online customers favor getting to applications rather than utilizing email, telephone or contact structures when making enquiries. Other programming mechanization is helping law offices direct record look, help distributors. For example, the Associated Press composes profit reports, processes contract applications for loan specialists, and surprisingly offers transient market expectations for dealers. All experience preferred for quicker results over assuming people had accomplished the work, as per the Government. A region where innovation is accessible yet misses the mark concerning human aptitude incorporates text, discourse interpretation and deals. Outside of the workplace, McKinsey additionally uncovers improvements in programming that could supplant laborers inside the movement and relaxation industry, banking, food administration and cleaning. Transport also will see boundless changes when independent vehicles are adequate to supplant individuals.

All the reports describing the impacts, regardless of whether making short or long-term predications, concur those net increase in positions is logical because of computerization. Robotization in various areas is developing quickly affected representatives just as manager. Now and again robotization is shelter for exceptionally talented and taught leader, administrative workers since it very well might be useful for them to do the job inside cutoff time of the board (Brodny& Tutak, 2021). It is likewise favorable to laborers at working environment for performing high danger errand. For example, dealing with weighty, basic material, foundry, and heaters work, this can be performed by utilizing computerization mechanical technology, various advances, and gadgets. Actual effort and wellbeing security of laborers can be made do via mechanization. Boss can keep away from creation surge, hazard in unsafe regions like wellbeing and coincidental issues, compensation on after some time. The boss can work even more successfully and more proficiently for accomplishing the objective and to endure with the present worldwide as well as cutthroat world. Usefulness and yield improvement can be accomplished by all around planned mechanization (Kamaruddin et al., 2016). Industry puts enormous

measure of cash in business mechanization though the reception of business robotization innovation instrument extraordinarily impacted business activity, human asset conduct, association structure just as their proficiency and viability. There is an emphatic effect of mechanical robotization on monetary turn of events. Expansion in advanced mechanics speculation by 1% is related with a long – run gain in GDP per capita of 0.03% (Daway-Ducanes& Gochoco-Bautista, 2019).

New advancements are the maker of many new positions. Some are straightforwardly or in a roundabout way identified with it. Advances and computerization will bring about the development of efficiency, livelihoods, and riches. Additionally, it emerges work interest and pay use. A few effects of mechanization on various fragments of industry are Productivity, Yield and Quality (Ernst et al., 2019). Creation assumes an imperative part in expanding compensation, generally work, request, influencing by and large area economy. Because of robotics and mechanization efficiency improves at organization level besides achieving industry and public seriousness. Indeed, even later monetary emergency in US fabricating ventures both creation and efficiency consistently ascended with the becoming mechanical and computerization. There is a connection between usefulness, company intensity, expanded interest for which computerization and advanced mechanics play a critical part. During the hour of 1993 and 2007, microeconomics research had done by utilizing information from 17 nations of 14 businesses, the investigation discovered that, robot usage in the business for this nation results normal GDP development rates (Koch et al., 2021). Consequently, it is observed that robot and mechanization emphatically affect efficiency and GDP development.

Computerization and mechanical developments and headway prompt the working on long haul expansion in proficiency and efficiency, which further develops yield as well as quality. Mechanical appropriations bring about dropping of cost of transport and interchanges. Further, coordination and worldwide production network become more powerful and quicker. Each one of these will open new market and useful in financial development. Modern upset likewise prompted yield extraordinary imbalance because of net relocation of laborers by machine. Because of digitization development, low talented and low work laborers will be supplanted by higher gifted and more generously compensated work, which brings about working on personal satisfaction likewise it prompted social strain. The fourth modern transformation in assembling area is having sway both positive too as bad, it can raise pay level by new creative mechanical thoughts, it will likewise be useful in working on personal satisfaction by fulfilling customers request by new inventive thoughts execution by utilizing fourth modern revaluation. It is very simpler undertaking to work on quality and yield of industry and further develop representative effectiveness and execution all over the planet.

As per McKinsey Global Institute, it was tracked down that because of the execution of mechanization and advance advances practically 46% of time spent on work exercises can be diminished. While on other hand it will influence work, wages, and pay of

individuals in the work market, as coin has different sides comparably computerization affected representatives just as business in both the way (Bennett, 2016). Computerization may add to responsibility on representatives, yet it very well may be likewise useful in decrease of actual effort and tedious assignment. Work and wages are for the most part impacted by modern mechanical technology, the proof for that U.S neighborhood work market that were generally presented to modern robotization bringing about incredible falls in business and wages level between 1990 and 2007 (Acemoglu and Restrepo 2017). Where Berg et al. 2017 fostered a model, which creates short run gains for gifted laborer as well as capital proprietors yet since a long time ruined the individuals who can't put resources in the process of childbirth and computerization. A singular researcher has cited in his exploration, computerization prompts the work and undertaking redistribution rather than work replacement in which robots are only a supplement for a human, work for performing standard, risky, perilous assignment (Pauliková et al., 2021). Because of computerization sway higher talented representative gets a premium in the area, while lower gifted works find another line of work in another area. At last, he demonstrated in his examination that mechanization doesn't cause total deficit of occupation rather it brings about considerable redistribution of occupation from one area to other people. There is a positive co connection among Automation and work.

Robotization is an extraordinary substitute for higher work interest. Human work and robotization blend are supplementing to expand usefulness and rising income of the business. Work situated, work escalated and intellectually work requesting task are very killing as well as reducing because of advanced mechanics and robotization versatile nature of industry for similar benefits. Although robotization dispenses with the requirement for human cooperation, as people, we need relational correspondence. In this manner, robotization will influence the work market in specific ventures more than others. Mass shippers, utility and tech organizations might computerize client support through internet-based gateways; yet the individuals who keep up with human communication in their call communities will overwhelm. Every year, around 9% of the laborers in the example are utilized at firms that make significant interests in robotization. However, somewhat couple of laborers are antagonistically impacted (Xu & Ye, 2021). Just around 2% of tenured specialists at mechanizing firms leave the extended time of the computerization occasion in view of mechanization; following five years, 8.5% will have left, aggregately.

All things considered, the people who do leave experience huge monetary expenses, generally because of spells of joblessness. As such, generously compensated laborers are even more generally impacted, however the impacts are more extreme for less generously compensated specialists. To get what happens when firms present computerization for a huge scope, the paper inspects mechanization spikes, which we characterize as a year wherein a firm makes consumptions on robotization that are something like multiple times its normal spending on robotization in any remaining years

(Waldman-Brown, 2020). Contrasting laborers who experience such a spike every year with a benchmark group that encounters spikes later empowers investigation of what the spikes mean for laborers. The paper takes a gander at both tenured specialists (three years or more at the firm) and as of late employed laborers.

In this computerized world we can't expect industry development without digitization and mechanizations. At the point when the technology and robotization utilized with legitimate mix of Human expertise and information nothing will go about as revile for representatives and business. In this progressive world robotization can be utilized to work on quality, effectiveness of laborer, keep away from unsafe as well as hazardous errand, further develop usefulness, and help to accomplish objective of industry. Rather than accusing impediment one can further develop expertise, information to develop with globalization and seriousness. Robotization incredibly affects representative, manager, and industry. However, it is relying upon the impression of individuals how they respond to it. At long last, computerization is itself made, customized, observed, and took care of by human. So, robotization can't substitute the human labor force totally, yet it just used to assist labor with further developing productivity of work and keep up with balance between serious as well as fun activities among representative and industry to develop with market interest.

Objective of Study

1. To know the factors that determines the role of automation in displacing jobs.
2. To know the impact of automation in present job market setting.

Research Methodology

Sample of 199 people from different industries and organizations were surveyed with the help of a structured questionnaire to know the factors that determines the role of automation in displacing jobs and the impact of automation in present job market setting. This study has empirical method to collect the primary data through random sampling. The statistical tools like factor analysis and multiple regression analysis were used to analyze the data and get the results.

Findings of Study

Table 1 is showing the general profile of the respondents where it is observed that total 199 people have been considered for survey process in which 58.8% are males and 41.2% are females. Among them 39.7% are from the age group 32-38 yrs, 31.6% belongs to age group of 38-42 yrs and rest 28.6% of the respondents are above 42 yrs of age. 43.2% of the people are employers and rest 56.8% are the employees that are working in different industries and organizations.

Table 1: General Profile of Respondents

| Variables | Respondents | %age |
|-------------------|-------------|------------|
| Gender | | |
| Males | 117 | 58.8 |
| Females | 82 | 41.2 |
| Total | 199 | 100 |
| Age | | |
| 32-38 yrs | 79 | 39.7 |
| 38-42 yrs | 63 | 31.6 |
| Above 42 yrs | 57 | 28.6 |
| Total | 199 | 100 |
| Occupation | | |
| Employers | 86 | 43.2 |
| Employees | 113 | 56.8 |
| Total | 199 | 100 |

Exploratory Factor Analysis

KMO and Bartlett's Test were applied in which KMO value found is .884, which is more than the 0.6 (Table 2). Hence, it confirms the validity of the factor analysis.

Table 2: KMO and Bartlett's Test

| | | |
|--|--------------------|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .884 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2714.003 |
| | Df | 136 |
| | Sig. | .000 |

It is found from Table 3 that the 4 factors explain total 74% of the variance. The 1st Factor explains 22.143% of the variance followed by the 2nd Factor that explains 20.421% of variance, 3rd Factor explains 16.651% of variance and 4th factor explains 15.133% of variance.

Table 3: Total Variance Explained

| Component | Initial Eigen values | | | Rotation Sums of Squared Loadings | | |
|-----------|----------------------|----------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variables | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 7.597 | 44.688 | 44.688 | 3.764 | 22.143 | 22.143 |
| 2 | 2.449 | 14.405 | 59.093 | 3.472 | 20.421 | 42.564 |
| 3 | 1.563 | 9.196 | 68.289 | 2.831 | 16.651 | 59.215 |

| | | | | | | |
|----|-------|-------|---------|-------|---------------|---------------|
| 4 | 1.030 | 6.059 | 74.349 | 2.573 | 15.133 | 74.349 |
| 5 | .720 | 4.235 | 78.584 | | | |
| 6 | .662 | 3.893 | 82.476 | | | |
| 7 | .580 | 3.413 | 85.889 | | | |
| 8 | .503 | 2.958 | 88.847 | | | |
| 9 | .411 | 2.420 | 91.268 | | | |
| 10 | .339 | 1.995 | 93.263 | | | |
| 11 | .279 | 1.642 | 94.904 | | | |
| 12 | .237 | 1.396 | 96.301 | | | |
| 13 | .214 | 1.256 | 97.557 | | | |
| 14 | .171 | 1.008 | 98.565 | | | |
| 15 | .109 | .639 | 99.203 | | | |
| 16 | .071 | .416 | 99.619 | | | |
| 17 | .065 | .381 | 100.000 | | | |

Development of Factors

'Customizable and Cost Effective' is the first factor that includes the variables Social and personal needs of human beings are eradicated with the use of automation for their customizable feature; New technologically driven job structure is cost effective; Mundane repetitive tasks which were earlier done by humans have an automated intervention at less cost; Cost reserve funds on the operational work can expand edges; and Machines are customized as per requirement. The second factor namely 'High Productivity' associates with the variables such as automated machines work much faster as compared to manual machines; Automation has a direct or indirect impact on the business interest; Machines need less rest and can work continuously; and Industries adopt automation for high productivity. 'Efficient' is explored as the third factor that includes the variables Computerization and modern robots are more efficient than humans; Automated machines show less errors; New advances have beneficial outcomes by expanding efficiency in the organizations; Automated machines are easier and convenient for carrying out the repetitive and monotonous jobs in efficient manners; and Robotics and mechanization efficiency gains at organization level. The fourth and the last factor is 'High Quality Performance' that includes three variables such as Manual jobs have been sidelined by the automated software for their high quality performance; Organizations considering various tools and techniques tied on to automation for high quality work; and Innovative procedures and techniques used in organizations in result give work of good quality.

Construct wise Reliability of Factors

The factor reliability of Customizable and Cost Effective is 0.899; High Productivity has 0.944; Efficient has 0.800; and High Quality Performance has 0.938 factor reliability.

Table 4: Rotated Component Matrix

| Sl. No. | Role of Automation in Displacing Jobs | Factor Loading | Factor Reliability |
|---------|---|----------------|--------------------|
| | Customizable and Cost Effective | | .899 |
| 1. | Social and personal needs of human beings are eradicated with the use of automation for their customizable feature | .891 | |
| 2. | New technologically driven job structure is cost effective | .861 | |
| 3. | Mundane repetitive tasks which were earlier done by humans have an automated intervention at less cost | .785 | |
| 4. | Cost reserve funds on the operational work can expand edges | .734 | |
| 5. | Machines are customized as per requirement | .679 | |
| | High Productivity | | .944 |
| 1. | Automated machines work much faster as compared to manual machines | .849 | |
| 2. | Automation has a direct or indirect impact on the business interest | .846 | |
| 3. | Machines need less rest and can work continuously | .804 | |
| 4. | Industries adopt automation for high productivity | .768 | |
| | Efficient | | .800 |
| 1. | Computerization and modern robots are more efficient than humans | .786 | |
| 2. | Automated machines show less errors | .738 | |
| 3. | New advances have beneficial outcomes by expanding efficiency in the organizations | .733 | |
| 4. | Automated machines are easier and convenient for carrying out the repetitive and monotonous jobs in efficient manners | .711 | |
| 5. | Robotics and mechanization efficiency gains at organization level | .704 | |
| | High Quality Performance | | .938 |
| 1. | Manual jobs have been side-lined by the automated software for their high quality performance | .830 | |
| 2. | Organizations considering various tools and techniques tied on to automation for high quality work | .819 | |
| 3. | Innovative procedures and techniques used in organizations in result give work of good quality | .799 | |

It is found from Table 5 that there is total 17 numbers of items that includes all the variables for the factors related to role of automation in displacing jobs and total reliability found is 0.909.

Table 5: Reliability Statistics

| Cronbachs Alpha | N of Items |
|-----------------|------------|
| .909 | 17 |

Multiple Regression Analysis

Table 6 presents the summary of the model for multiple regression analysis.

Table 6: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|-------------------|----------|-------------------|----------------------------|
| 1 | .892 ^a | .796 | .792 | .40236 |
| a. Predictors: (Constant), Customizable and Cost Effective, High Productivity, Efficient and High Quality Performance | | | | |

The Value of adjusted R- square is found to be 0.792, which means that the model explains around 79% of the variation. Table 7 shows the values of ANOVA, which is significant (sig. value below 0.05), which reflects the impact of independent variables is significant on dependent variable.

Table 7: ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|--|------------|----------------|-----|-------------|---------|-------------------|
| 1 | Regression | 122.583 | 4 | 30.646 | 189.294 | .000 ^b |
| | Residual | 31.407 | 194 | .162 | | |
| | Total | 153.990 | 198 | | | |
| DV: Overall impact of automation in present job market setting | | | | | | |
| Predictors: (Constant), Customizable and Cost Effective, High Productivity, Efficient and High Quality Performance | | | | | | |

The value in the significance column is 0.000 which means that one or more variables are significant on dependent variable.

Table 8 shows that all the factors namely Customizable and Cost Effective, High Productivity, Efficient and High Quality Performance are showing significant impact on dependent variable Overall impact of automation in present job market setting as the value in the significant column for all the factors is below 0.05. Figure 2 presents the standardized beta value along with the independent and dependent variables (pictorial presentation of the results of multiple regressions).

Table 8: Coefficients^a

| Model | Un standardized Coefficients | | Standardized Coefficients | t | Sig. |
|---------------------------------|------------------------------|------------|---------------------------|---------|------|
| | B | Std. Error | Beta | | |
| (Constant) | 3.899 | .029 | | 136.716 | .000 |
| Customizable and Cost Effective | .225 | .029 | .255 | 7.866 | .000 |
| High Productivity | .718 | .029 | .814 | 25.110 | .000 |
| Efficient | .096 | .029 | .109 | 3.361 | .001 |
| High Quality Performance | .209 | .029 | .237 | 7.314 | .000 |

Dependent Variable: Overall impact of automation in present job market setting

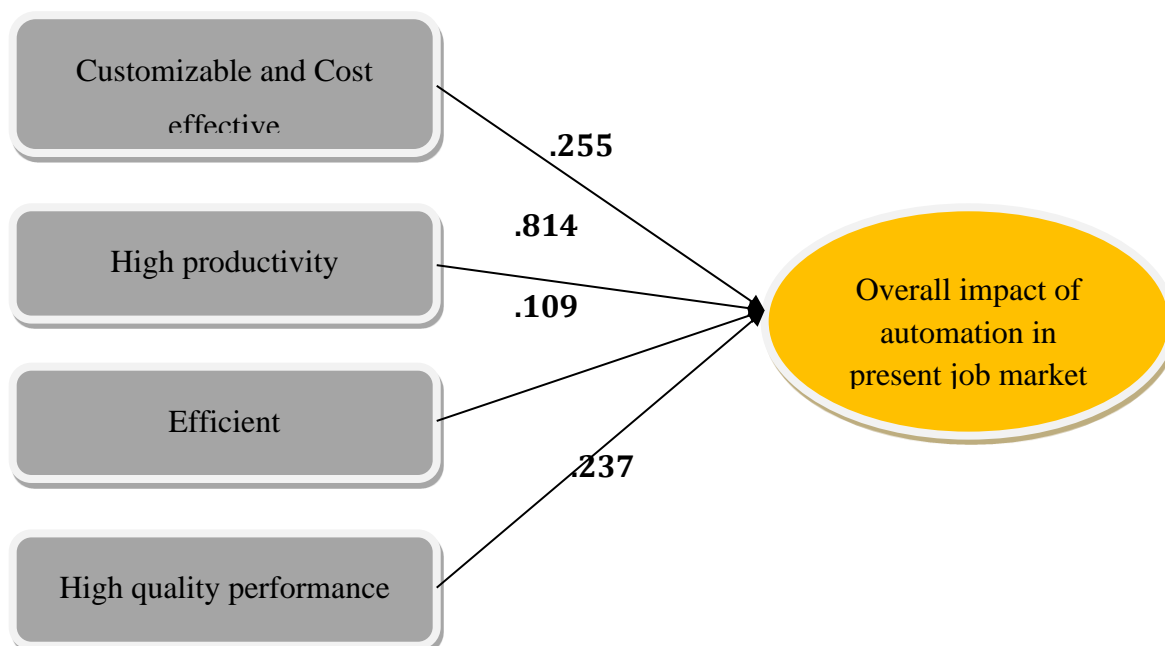


Figure 2: Overall Impact of Automation in Present Job Market Setting

Conclusion

The study reveals the factors essentially impacting jobs due to the advent of automation. However, while the review suggests the underlying drawbacks of automation, there are some measurable solutions that could be handy to the industrialists and government to solve the problem of insignificant job losses. There are different drives to assist with counterbalancing the interruption brought about via computerization. A portion of these is being sought after, while others stay at the theoretical stage as strategy creators and financial backers work out how to convey results. On the strategy side, they incorporate advancing work sharing, just as different expense changes pointed toward expanding capital, business or utilization charges while decreasing assessments on work (Vivarelli, 2014). There is an answer for employment misfortunes and there is a need to present a general essential pay. This was at that point tested in Finland in 2017 and is generally

bantered by European approach producers. With respect to venture, McKinsey distinguishes three regions where they accept uplifted speculation will drive an interest in work.

The first is creating an elaborative framework and explicit development of jobs in the market. 80 million to 200 million positions could be made by assessments, helping offset the relocation of laborers in different areas. Lodging deficiencies is one primary driver for speculation and the scope of occupations the area upholds are wide. This incorporates draftsmen and architects, talented exchanges individuals, development laborers, hardware administrators as well as other lower gifted positions. Energy is another area where speculation is required and where the positive thump on impact for business would be invited during rising automation and digitalization (Pedwell, 2019). Environmental change is a conspicuous impetus for development. As indicated by McKinsey, it gives a lift to enterprises supporting sustainable power and energy proficiency that could make up to 20 million positions by 2030. At long last, one more petulant arrangement is the marketisation of already neglected homegrown work including childcare, youth instruction, cleaning, cooking, and planting. Simultaneously, along with positive measures of creating jobs, the administrative bodies are supposed to prepare financing in the sector of digitization, automation, and innovation, just as looking for ways of making strategies as well as plans for organizing programs that empower people to hold a benefit over robotization advancements. This can possibly be done with the help of best-suited training facilities that would help the workforce to be adapted to the new work-environment.

The study concludes that Customizable and Cost Effective, High Productivity, Efficient and High Quality Performance are the factors that determine the role of automation in displacing jobs. It is also found that there is a significant impact of automation in present job market setting.

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