Artificial Intelligence Verses Natural Intelligence

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Abstract

Background

Artificial Intelligence is a modern era technological phenomenon which has penetrated so deep into our lives that now even our basic daily activities are largely dependent on it. In contrast to Natural Intelligence, it can be described as the ability of machines to perform functions, operations and complete tasks with the help of their own mechanisms. But, machines operate through intellect which has been created by humans in the form of softwares.

In today's scenario, there is not even a single activity which can be limited only to human's potential, machine softwares have evolved enough to create a virtual world of their own. Moreover, recent trends and researches have shown concrete evidences that the debate on the issue of machine intelligence overpowering humans is becoming more prominent than ever. Machines have brought in major revolutions in this industrial period by making human's life easier, however, the divide between the virtual world and the real world is blurring everyday and a mix of both the worlds has been establishing itself by the name of "virtual-reality."

So, Artificial Intelligence remains in a domain of critical study and analysis for the development and progress of human race.

Aim

This research paper aims to explore the effects that the advent of Artificial Intelligence has had on the well-being of mankind through different dimensions ranging from Ethical/Moral, Societal, Economical, Legal, Commercial, Medical, Scientific Fiction, and Political etc. The changing influence of Artificial Intelligence calls for identifying principles with which the new technological devices should be adopted in our lives.

Method

This research has been conducted in four major steps. Firstly, the historical background of the subject has been critically assessed in order to understand the basic definitions and differences that exist between the two realms.

Further, a method of segmented research has been taken up through online surveys and questionnaires on all the popular social media platforms.They have been strategically designed to include questions that focus on garnering first-hand information about the various aspects of Artificial Intelligence from its common audience, like:

a. *Do we need to redefine human essence in terms of the machine? or Vice-versa?*

b. *Is it ethically/morally acceptable that we are becoming over-dependent on something that is our own creation?*

c. *Is there a limit to Artificial Intelligence? If yes, then who decides the limit?*

d. *Is Artificial Intelligence creating a divide between those who can afford it and those who cannot?*

e. *Can real world experiences be substituted by Virtual-Reality?*

f. *How must methods of education, health care and governance be re-defined to adapt to autonomous Artificial Intelligence?*

g. *What will be the economic impact if natural processes will be compromised by automated ones?*

h. *How is Scientific Fiction shaped by Artificial Intelligence and what are the effects it has on the society?*

i. *Is the wide acceptance of Artificial Intelligence because of commercial trends or daily needs?*

j. *Are monetary transactions that are made online with the help of Artificial Intelligence reliable and safe?*

k. *Is the dependence on Artificial Intelligence harmful for our mental and physical health?*

l. *Can we trust Artificial Intelligence to safeguard our identity (Aadhar Card Issue)?*

m. *Does Artificial Intelligence facilitates our process to become superhumans?*

n. *Is high investments in Artificial Intelligence from governments of developing countries justified?*

o. *Is it possible to develop Artificial Intelligence only for societal benefits?*

The third step of this research was to analyse, compare and contrast the answers obtained through mass circulation of surveys and questionnaires. This has enriched the research by adding concrete results from different domains and leading towards the identification of the pros and cons of the subject in hand.

Lastly, to round off the whole process, a procedure of pictorial representation has been used for better understanding to demonstrate the information that has been compiled from the raw data.

Result

The primary motive of this research paper remains to find out if it is possible for Natural Intelligence and Artificial Intelligence to co-exist in the modern era without weakening or overpowering each other and chalk out the principles and the extent to which Artificial Intelligence should be accepted in our lives as a weapon of revolution and not as a means of destruction.

Conclusion

To conclude the debate of Human Existence versus Artificial Intelligence, Real Realityversus Virtual Realty, this research paper has weighed the advantages and disadvantages of the wide acceptance that machines and softwares have gained in this era. The truths and reliability of the ''virtual-world' has been explored, questioned and researched on in detail. This study was a conscious effort in the direction of actually understanding of the revolutionary Artificial Intelligence.

1. The Interface between Artificial and Natural Intelligence: An Introduction

Artificial Intelligence is one of the most significant and celebrated gifts that has been given to mankind by the modernisation and development of technology. Artificial Intelligence can be simply defined, in layman's language as the software which has been created to perform functions and carry out commands as per the instructions given by the user. It is referred to as "Artificial Intelligence" because it does not possess any intellectual abilities of its own but performs according to the directions given by a second party. Natural Intelligence, on the other hand is the natural intellectual abilities that all human possesses. The ever growing debate that rests between the supremacy of Natural Intelligence over Artificial Intelligence or vice versa has been explored in this research paper under various aspects in which Artificial Intelligence interacts with human life. The race to modernisation has undoubtedly yielded benefits to the humans because of which we are able to accomplish things in much better and faster fashion than we could ever have. However, the disadvantages of this sudden growth and changes that we have incorporated in our lives has also started to show up. There are concerns in the fields as varied as psychology and physical regarding the harms of accepting and adopting Artificial Intelligence into our lives without giving a second thought to the consequences that it might bring along itself.

Thus the following headings will be directing the course of this paper and the same will be analysed through two different lenses of positive and negative impacts.

1.1 Impact of Artificial Intelligence on the Ethical/Moral Aspect of Human Life

1.2 Impact of Artificial Intelligence on the Societal/Public Aspect of Human Life

1.3 Impact of Artificial Intelligence on the Economic Aspect of Human Life

1.4 Impact of Artificial Intelligence on the Physical/Mental health Aspect of Human Life

It is imperative to study and analyse the effect and consequences of adopting Artificial Intelligence in our lives under these four basic heads as they are the most important factors in determining the position of the growth of mankind. The correct answer to the question that whether Artificial Intelligence acted as a support in facilitating the development of the human race or acted as a detriment and intervened by making humans their own slaves can only be observed by analyzing the above four headings. The principles that are needed in order to accept the boundaries that mankind needs to draw for Artificial Intelligence can be arrived at after carefully observing the advantages and disadvantages that Artificial Intelligence has brought along itself in the aforementioned four fields. Both the pros and cons for each field will be weighed and measured against each other to arrive at a conclusion that will direct us to the answer of our primary question that is Artificial Intelligence a digital revolution or destruction for mankind.

Thus, a deep analysis of how mental and physical health is being deteriorated after the advent of soft technology along with the negative effects it has on the personal and national economy of the individual and of the nation will lead to a better understanding of the negative and positive effects it has on the societal/public life of a person or the ethical/moral decisions that an individual takes.

2. Historical Background

The modern history of Artificial Intelligence can be traced back to the year 1956, when John McCarthy coined the term Artificial Intelligence as the topic for a conference held at Dartmouth College. So, now the question arises - what is Artificial Intelligence?

It can be defined in the following ways:

- It is a branch of Computer Science that is concerned with automation of intelligent behavior.

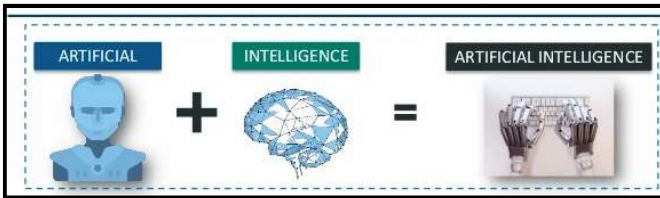- It is an engineering of making intelligent machines like, intelligent computer programs.

- It is an interdisciplinary field aiming at developing intelligent techniques and tools for solving problems that people at good at.

- It is an intelligence exhibited by an artificial entity i.e., putting human intelligence in to machine.

As it is clear from above that in all the ways in which Artificial Intelligence can be defined, emphasis is on the word 'intelligence'. So, now the question arises - What is Intelligence? Or what's involved in Intelligence?

Intelligence can be defined as the ability of:

- Abstract thought

- Understanding

- Communication

- Reasoning

- Learning

- Planning

- Problem solving

Futher, the question arises, can intelligence be defined at all? No, it cannot be defined abstractly. There are probably as many definitions of intelligence as there are experts who study it. But what we have discussed so far can be shown through the diagram:

No, it cannot be defined as such as it lacks:

- Common sense

- Intuitive abilities

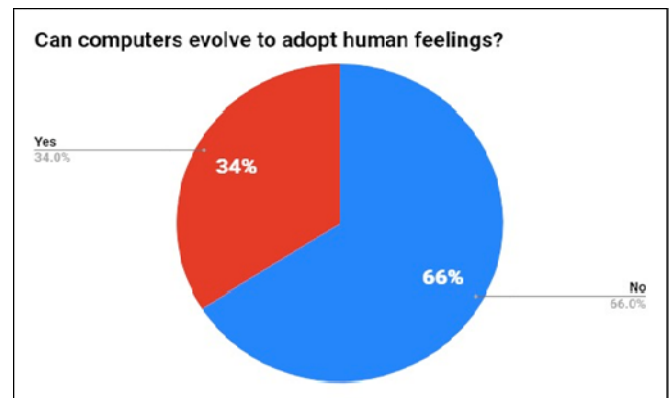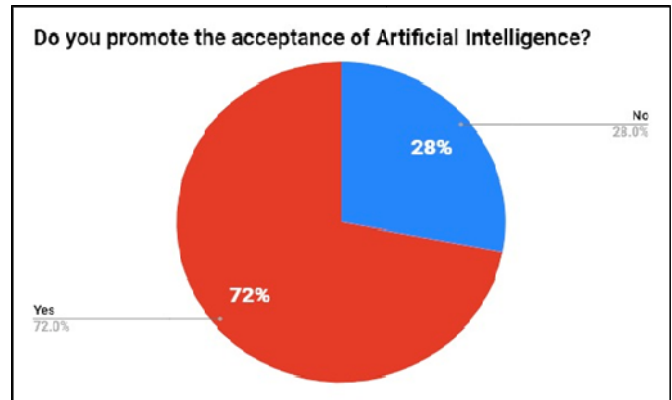- Inherent abilities

- Thinking abilities

- Emotions

- Feelings

In the end we can conclude that we cannot have consensual definition of Artificial Intelligence, as we cannot define intelligence in itself.
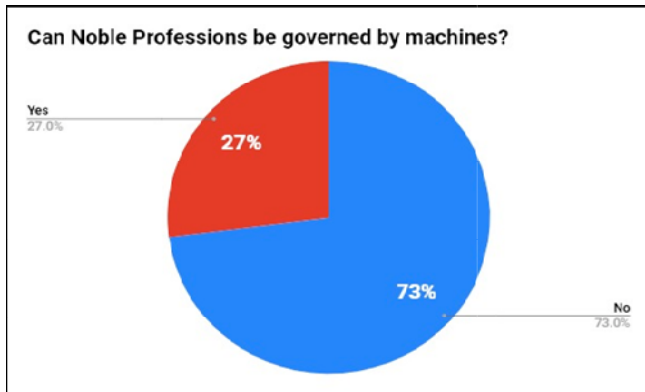
3. Impact of Artificial Intelligence on the Ethical/Moral Aspect of Human Life

Ethical/Moral aspect of one's life can be defined as that realm which gives humans an extra edge over machines because humans possess the abilities to use their conscience or the

moral values that they have learned through their own life experiences and judge to decide the difference between good and bad or right and wrong. However, machines lack this basic conscience and are accustomed to doing things in a mechanical fashion. Recently, a discussion has started to initiate regarding the advantages or disadvantages that a lack of moral values, feelings, emotions or ethics in machines will lead to in the future. These discussions are pertinent as there are various noble fields wherein the computers and machines are replacing humans. Professions such as teaching, medicine among others are considered to be noble professions and those who are involved in them are considered to be doing their contribution towards the betterment of the society. However, now that smart boards/classrooms are replacing teachers and new equipments in medicine are replacing the expertise of doctors, there is a common question which is being asked by people of all generations that whether this replacement is justified or not and whether will machines ever be able to take the place of humans in such fields because they not only require knowledge but also require human emotions and ethics.

On observing the data from the total 147 responses that were received on the surveys which were floated on all popular social media platforms, the following results were arrived at for different queries under different aspects-

Can Noble Professions be governed by machines?

According to the responses received, majority of the people believed that the acceptance of Artificial Intelligence in our daily lives is a positive thing and should be promoted further. 72% of the respondent believes that adopting new technological tools in various aspects of life helps in facilitating the process and quickens the pace of the whole process as well. However, on asking specific questions regarding the ethical and moral background that machines lack, majority of the audience flipped sides. 66% of the people said that computers cannot evolve to adopt human feelings and rest of them believed that due to the unbelievable advances that technology has made, it is actually a possibility that one day computers will evolve to have feelings similar to humans. Noble professions have always held an important position when it comes to the occupations that man practices and there is a sacred value attached to it due to which people respect these occupations more than the others. Noble professions are not considered for the purpose of minting money but they are valued and respected as they strive to work towards the development and betterment of the quality of life that humans live. Thus, on asking, an even more specific question that whether such noble professions can also be taken over by machines, majority of the audience opted to deny this because they believe that the moral or ethical aspects that the machines are lacking are necessary requirements for such professions and hence machines cannot replace humans in these aspects.

Further detailed questionnaires and surveys also revealed that there are two sides of the same coin. There are positive as well as negative effects of employing computers and machines by replacing humans in such professions. The positive factors are as follows-

3.1.Precision - Work done by Artificial Intelligence is more precise, easy to organise and compile data for information. For example, doctors use machines and softwares to get the precise details of ailments which was not possible earlier.

3.2. Faster - Artificial intelligence helps in quickening the pace of the work and takes a lot lesser amount of time than humans. For example, the checking of answer sheets can be done through softwares which is more precise and faster, apart from that, records and data of patients can be maintained for faster processing.

The negative aspects that have been identified as a result of incorporating Artificial Intelligence in the noble professions and replacing humans are much greater in number than the positive ones. The negative factors are as follows -

3.3.Passing on of moral values and ethics gets compromised - Professions such as teaching and those of medicine, involve the building and bonding of an emotional relationship between the involved parties. There is a connection that is fostered between the student and a teacher and between a doctor and a patient which helps in during the whole procedure. This connection lacks in the case of machines.
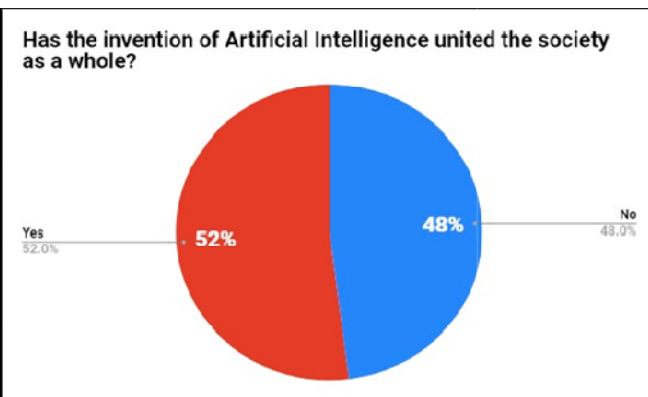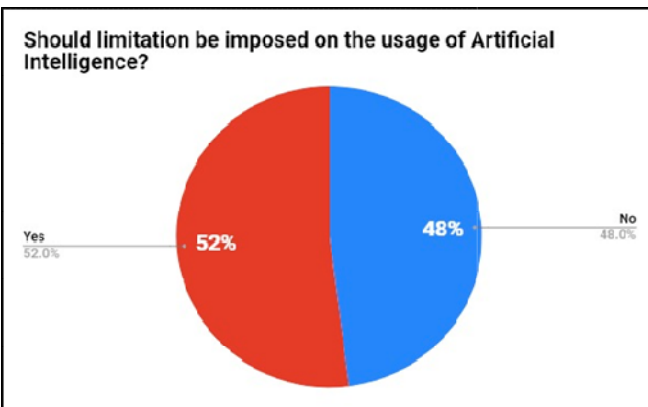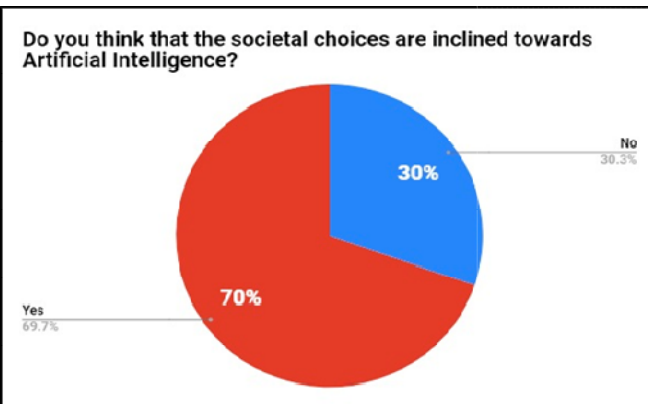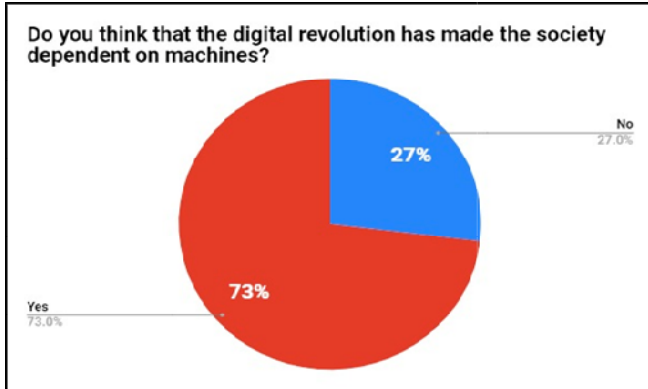
3.4. Difficult to accept - Artificial Intelligence and its concept is a very modern idea and it gets difficult for people who are conservative with their choices to accept them. Conventional notions are challenged.

3.5. Human supervision is still needed - As has been identified earlier, that an emotional bond is missing when Artificial Intelligence replaces humans in noble professions, man has still not been able to trust technology completely due to which most of the audience that took part in the surveys and questionnaires preferred that human supervision always accompanies technological intelligence.

As can be clearly seen by the above mentioned observations, humans are slowly adapting to the use of Artificial Intelligence in fields such as education, medicine and research, however, the majority of the polls believed that we cannot categorize Artificial Intelligence as completely reliable and we need human assistance or supervision everywhere. Thus, passing on ethical and moral values remains one of the primary objectives of mankind because morals and ethics is the quality which differentiates them from all the other species or inventions that are available in this world. Humans cherish these morals and ethics as well as believe that only humans can transfer these values to the next generation and machines cannot completely replace them in this aspect.

4. Impact of Artificial Intelligence on the Societal/Public aspect of Human Life

Society as a whole represents the surroundings that an individual lives in and that as well as the way in which a human lives in this society is heavily affected after the introduction of Artificial Intelligence. Public life of an individual covers the critical categories such as privacy, social circles, external personality of an individual etc, all such factors are heavily influenced by the technological advancements that we have made. The open bond that man shared with nature in the society has been affected in both, positive and negative ways due to Artificial Intelligence. Following research results have been obtained from the surveys and questionnaires-

Do you think that the digital revolution has made the society dependent on machines?

No
27.0%

27%

73%

Yes
73.0%

Do you think that the societal choices are inclined towards Artificial Intelligence?

No
30.3%

30%

70%

Yes
69.7%

Should limitation be imposed on the usage of Artificial Intelligence?

No
48.0%

48%

52%

Yes
52.0%

Has the invention of Artificial Intelligence united the society as a whole?

No
48.0%

48%

52%

Yes
52.0%

The societal impact that Artificial Intelligence has had on the lives of humans can be clearly studied through the statistics which have been depicted above.

Of the total response, 73% of the majority believed that Artificial Intelligence has made the society dependent on it. All the new inventions and gadgets that have been introduced in the market are undoubtedly working to make the work faster and easier but they have also left human beings to be so dependent on the easier ways that societal choices are changing and being moulded into a fashion of trend rather than need. These days, the daily activities which can be easily done through human effort is now replaced by machinery. Due to the trends and needs, people are now compelled by the peer pressure and societal influence to adopt gadgets that run by Artificial Intelligence and hence the human choices are slowly inclining towards softwares and machines as has been depicted by the statistics according to which 69.7% of the respondent believes in the favour of the statement.

Though people are rapidly adopting Artificial Intelligence due to its multiple benefits, the disadvantages that it shows on the societal aspect of one's life are also evident now. 52% of the respondent, which is more than half, has now started to believe that limitations must be imposed on the usage of Artificial Intelligence because the negative impact of Artificial Intelligence is now overpowering the positive impact. In this fast and modern age, the support of Artificial Intelligence is imperative, however, limitations should be imposed and certain principles of using Artificial Intelligence must be chalked out so that it does not lead to a path of destruction for us. In brief, the following advantages have been observed of adopting Artificial Intelligence related products in our life-

4.1. Technological Advancement of the Society - Many elaborate tasks can now be completed in lesser amount of time and benefit the society as a whole because people of all sections of the society are now reaping benefits of the same.

4.2. Easy accessibility to various experiences - Artificial Intelligence has made it possible to experience virtual reality like never before. Societal choices are now divided between getting real results and experiencing something virtually. Due to the affordable and cheap options available, people are now sliding towards virtual reality options and that is shaping the societal choices.

The disadvantages that have been identified are as follows -

4.3. Division in society - There is a clear division coming up in the society between those who are in favour of Artificial Intelligence and those who are not. Hence stereotypes are being created in the society that are creating divisions between the younger generation which supports the usage of Artificial Intelligence and the older generation which is sceptical about its usage.

4.4. Decreasing significance of natural experiences - Virtual reality and its readily accessibility to the masses has been negatively impacting the significance of real experiences. People are suing virtual reality in video games and the like as a substitute for real physical actions.
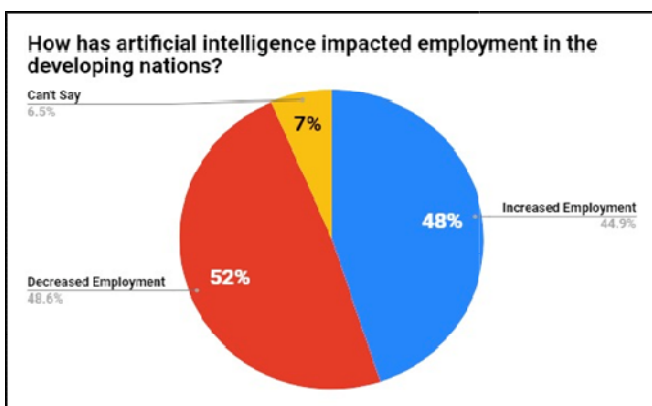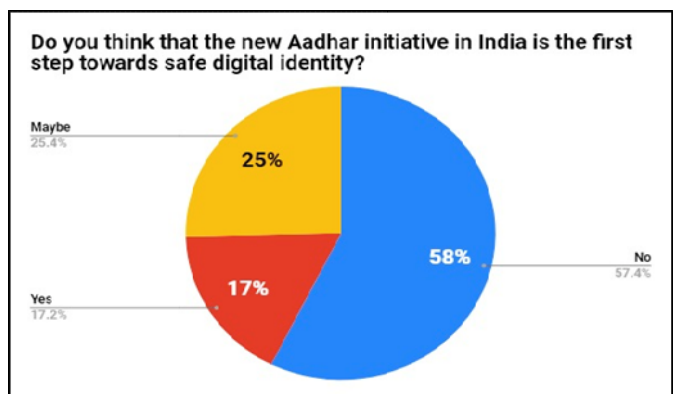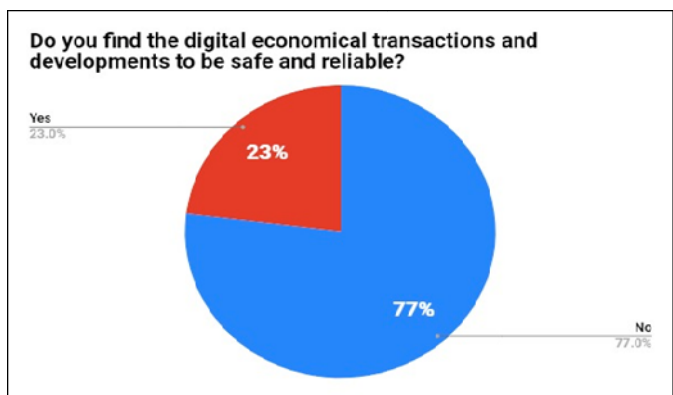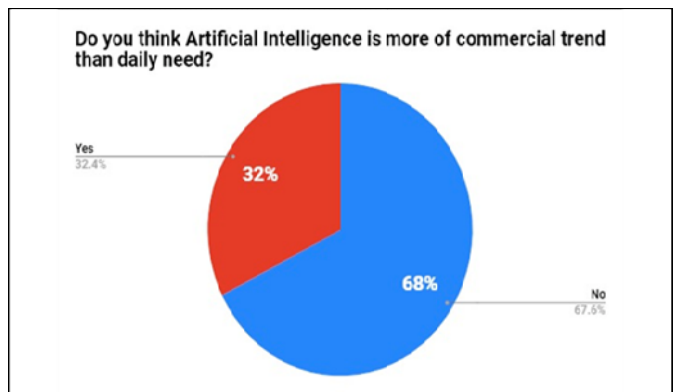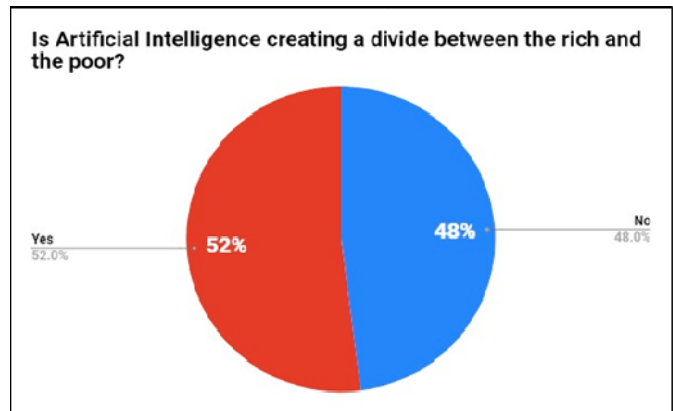
4.5. Dependency on Artificial Intelligence - Due to new inventions and gadgets in the market and due their easy operation and functioning, 73% of the majority believed that Artificial Intelligence is making humans dependent on it by replacing their old techniques and procedures. Hence, we are resorting to easier options and making ourselves weaker by the day.
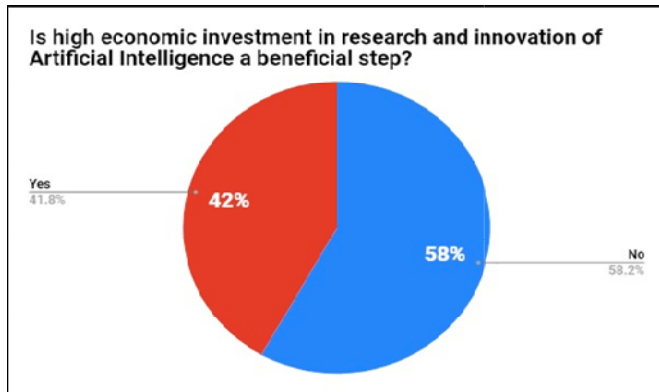
4.6. Need Vs. Trend - Due to peer pressure and societal influences, human choices in particular & societal choices as a whole are changing and being moulded into a fashion of trend rather than need. Even 69.7% of respondent believed that societal choices are inclined towards Artificial Intelligence.

5. Impact of Artificial Intelligence on the Economic Aspect of Human Life

Economical aspect plays a vital role in one's life and determines the life choices and decisions that we make. However, certain changes in the economic policies or patterns not only lead to chaotic situation in the world but can make lives miserable for many. One such huge change was brought about by the industrial revolution and now invention and introduction of Artificial Intelligence in the producing sectors. This new addition has made many changes in the economic sector by creating various business opportunities and has also had negative effects by taking away the conventional business choices that people had.

All the amendments that have been brought up by Artificial Intelligence in the recent times can be studied through the following results-

There were various direct and sepecific questions that were posed to the audience of this survey in order to draw some crucial conclusions regarding the economical advantages and disadvantages that Artificial Intelligence has brought along itself. Again, a pattern is getting repeated in this aspect as well where there are both pros and cons for the same topic. The advantages that are highlighted in the field of economic growth and development remains central in the developing nations and hence all these observations can be generalised to the developing nations mostly.

Following are the advantages in the economic field that have been separated according to the responses received in the survey and questionnaires.

5.1. Creation of employment - The advent of Artificial Intelligence has made it possible for many people to get employment in the IT industry and be a part of the industrial revolution. There is a huge scope for all those people to learn new things and earn who are computer savvy or digitally literate. Many unconventional jobs have also come up in the scenario which are providing interesting employment opportunities to many. 48.6% of respondent says that Artificial Intelligence has opened up avenues of jobs for them.

5.2. Faster Digital transactions - Business has become global and that has been possible only because of the new digital revolution and the gadgets that are powered by Artificial Intelligence. 67.6% of the rerspondent believes that Artificial Intelligence is a daily need for economic growth whereas an almost equal portion of 32.4% says that it is just a commercial trend. Online digital transactions and software related transactions that are being done, opened up vast horizons of opportunities.

5.3. New Governmental Economic Policies - New economic policies are being implemented quickly and in a better fashion only because of the online portals that are available in this age. The beneficiaries of these policies can easily access these policies and their procedures. More and more new policies with the combination and support of Artificial Intelligence has made it possible for developing nations to make an effort and be at par with the developed nations.

Apart from the above advantages, there were a considerable number of disadvantages as well that have been brought by. They are as follows -

5.4. Elimination of conventional jobs - Due to the coming age of Artificial Intelligence, conventional jobs are on a decline. This is because people are shifting their choices to products that are commercially cheap and easily available which is killing the age old professions and cultural traditions that were continued in most of the developing nations. 44.9% feels that conventional jobs which require human labour are on a decline and that is dangerous.

5.5. Unsafe digital procedures - Though many channels have been developed, most of these economic channels are unsafe and can be hacked into easily and result in online frauds. Thus, 77% people have still not been able to foster trust for such procedures and hence, 57.5% of the people are also not in favour of the newly introduced scheme of an digital identity of Aadhar by the Indian government.
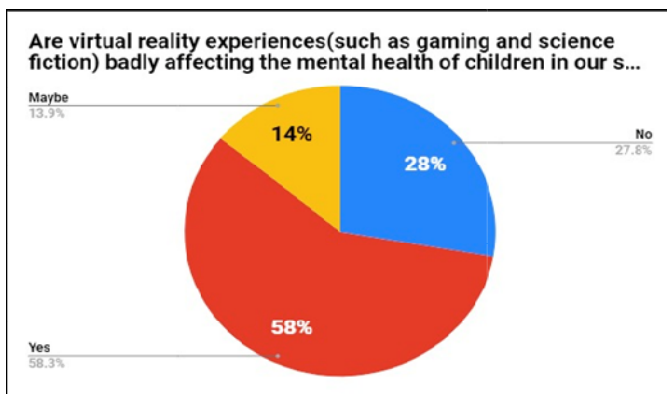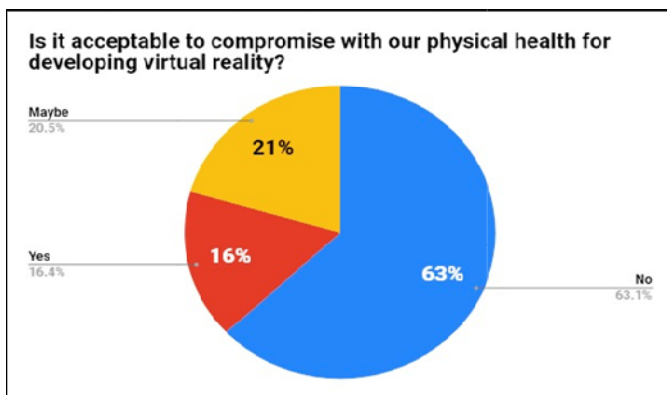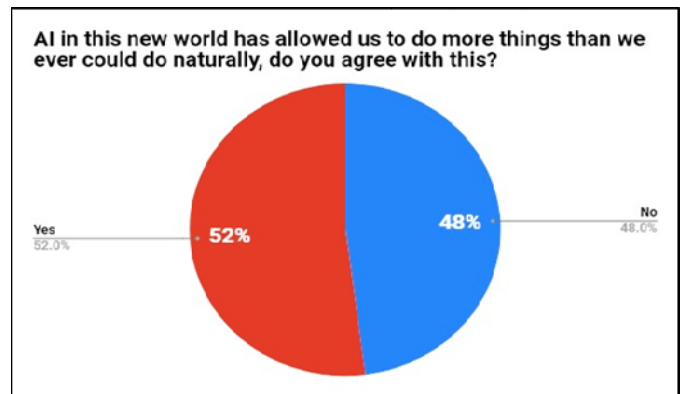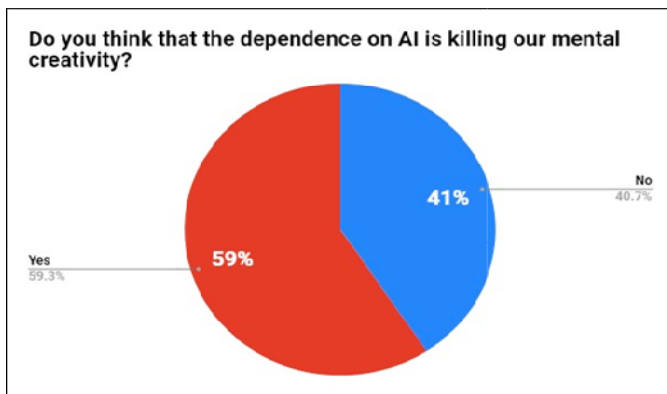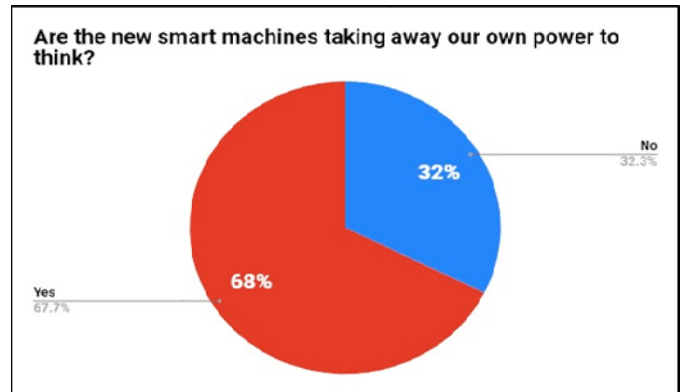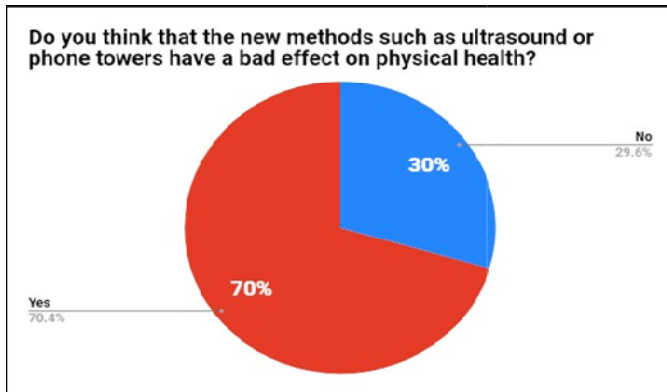
5.6. Divide between rich and poor - Due to the involvement of preferences for Artificial Intelligence more as a commercial trend than a need, there is an unseen divide that is being created between people who can afford Artificial Intelligence related products and those who cannot depending upon their economic capabilities.

5.7. Investments being diverted towards Artificial Intellience largely - The major problem that has been encountered in the survey results from majorly developing nations is that there are many other aspects such as poverty, infrastructure and education towards which investments should be directed. Even 58.2% of the masses believed that high economical investment in research and innovation of Artificial Intelligence is not a beneficial step.

6. Impact of Artificial Intelligence on the Physical and Mental Health Aspects of Human Life

Artificial Intelligence and its rapidly increasing influence on our lives has not only had societal changes but also introduced many changes in our individual lives. Our physical and mental health has been taken a toll on due to the continued usage of devices that are operated online and by the help of Artificial Intelligence. Physical health is being compromised upon and the mental sharpness of most of the people is losing out due to the fact that Artificial Intelligence and the virtual reality that it creates, it is taking away the essence of natural experiences and that is badly affecting everything on an individual level.

The following results have been obtained for physical and mental health depreciation combined-

Do you think that the new methods such as ultrasound or phone towers have a bad effect on physical health?

No 29.6%
30%
Yes 70.4%
70%

Are the new smart machines taking away our own power to think?

No 32.3%
32%
Yes 67.7%
68%

Do you think that the dependence on AI is killing our mental creativity?

No 40.7%
41%
Yes 59.3%
59%

AI in this new world has allowed us to do more things than we ever could do naturally, do you agree with this?

No 48.0%
48%
Yes 52.0%
52%

Is it acceptable to compromise with our physical health for developing virtual reality?

Maybe 20.5%
21%
Yes 16.4%
16%
No 63.1%
63%

As can be clearly seen, there are not many significant benefits of products that run on Artificial Intelligence than on humans and most of the results have a negative light to them and hence the following list enumerates the ill-effects that continued usage of Artificial Intelligence and online presence has brought on our health -

6.1. Compromises on physical health - New inventions which are a part of our daily life is having unseen bad effects that become visible later in our lives. For example, the setting up of network towers, laying the cable wires and equipments in medicine such as ultrasounds and X-rays have bad consequences ranging from cutting down of trees, harming the environment, harmful radiations on humans and harmful rays coming out from such devices prove to be problematic in the lives of humans by causing various diseases and 70.4% of the respondent feels the same.

6.2. Virtual reality compromises on mental health of children - Children are specially getting addict of the computer games and secience fiction that are being sold these days because of the convincing image and graphics that Artificial Intelligence is creating of the virtual world. They are losing friends in the real word and the social circles are shrinking because they engage online and find Artificial Intelligence and virtual beings more interesting and convenient to engage with. 58.3% of the audience who took part in the poll said that they believe that virtual entertainment

Are virtual reality experiences(such as gaming and science fiction) badly affecting the mental health of children in our s...

Maybe 13.9%
14%
No 27.8%
28%
Yes 58.3%
58%

is having a bad effect on the lives of young and teenage children.

6.3. Hampers mental creativity - Even 67.7% of respondent believed that smart machines are taking away our own power to think. Due to easy solutions at our disposal, our power to think and calculate is getting lesser everyday. The cases of plagiarism and repetitive patterns in various disciplines is also on the rise due to the same reason because people are now just copying, pasting and propagating the easily available resources on online platforms. This is killing the mental creativity and this is supported by 59.3% of the people.

7. In a Nut Shell

- Artificial Intelligence has so many applications and can benefits the world in so many ways. It's a like a gift to mankind but it has a grim side too: tools might be used against people; technology may create worse problems than it solves; standards of living might get worse; we might lose some aspect of our humanity. Thus, Artificial Intelligence can be defined double edged sword.

- Artificial Intelligence has now slowly started to replace the human presence in various fields but it is high time that we realise that Artificial Intelligence should only act as a support or a facilitating factor and cannot completely substitute human power because at the end of the day, humans are the creators of this phenomenon and our own creation should not overpower our authority.

- Artificial Intelligence should help in bringing harmony to the world rather than intensifying battles, enhance the economy rather than reduce economic competition.

8. Future of Artificial Intelligence

The central focus of Artificial Intelligence has changed with time; in the 90's it was improving conditions for humans. But now the question arises: Is that the only goal in future?

No, the goal for future is to replicate the humans and their abilities as it is. It leads to some fundamental questions to ponder upon:

- Whether it's possible to build a machine that has all aspects/traits of human's natural/biological intelligence in the near future?

- Do you believe that Artificial Intelligence should be taken any further?

- Is Artificial Intelligence interfering with Religion? Are we playing as God?

- If machines can be made to think like us, then what do you think sets us apart as humans? At what point is a machine considered life?

- If we were to create intelligent beings, what kind of rights would they be given? Should they even be given rights?

- Is that the future world is becoming Artificial, seeing at the development of Artificial Intelligence?

- Will humans have to worry about their futures if Artificial Intelligence takes over?

The crux of the matter is that in search of Artificial Intelligence, humans should not loose their intelligence and starts a journey, which becomes the beginning of the end. Certain principles and limitations must be highlighted and this paper makes an effort in the same direction by presenting forth all those negative consequences that artificial intelligence is bringing along itself so that we can collectively work towards the betterment of this field in a way that it has maximum positive outcome and we can reduce the negative outcome.

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