

Artificial Intelligence and the Future of Legal Profession

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ABSTRACT

Artificial Intelligence is a branch of computer science that lays stress on creating intelligent machines which work and react like humans. Artificial Intelligence is said of being capable of replacing humans in some fields. One of the purpose of this paper is to find out whether the replacement of legal professionals by AI will lead to unemployment in the longer run. Although Artificial Intelligence has a capacity which is more as compared to a human being, it's feasibility in actually taking over the legal field is a questionable issue, but if so be it, the researchers through this paper will find out the effectiveness of the use of this technology and what impact it will have on employment. This paper will as well look into the aspect of automation of the legal system with the help of AI and measure the odds against the augmentation of AI in the field. Although automation and augmentation both have its pros and cons, the viability of one over the other will be measured in this paper. Lastly, the application of Artificial Intelligence in legal research will also be looked into. Research is inevitable to the profession itself, every legal professional has to go through extensive research work throughout their career. The ways of legal research have shifted as the profession progressed with time. Through this paper, the researchers would look into the application of AI while conducting any work in the field of law and measure its convenience or inconvenience with respect to earlier ways of conducting legal research. Along with it, this paper will also compare the accessibility and application of AI in developed, developing and under-developed countries.

Keywords- *Artificial Intelligence, replacement, unemployment, convenience, inconvenience, automation, augmentation, legal research.*

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I. INTRODUCTION

1.1.OVERVIEW

Artificial Intelligence, i.e. intelligent machines that can respond and interact as human beings, is a technological development that although came into being in the 1950s, is resurfacing in recent years due to advancement in technology. Legal AI means machine learning, use of algorithms, speech recognition, mapping, analysis of parameters, cognitive computing with respect to the legal field. It has gained so much of importance lately due to its ability to handle a large amount of data. Legal AI uses machine learning and deep learning and natural language processing

Machine learning is a subset of AI wherein various algorithms are coded inside the computer to make it learn certain things which helps in creating predictive models. For example, while thinking of a mobile number we can easily identify the characteristics of it like if +91 is used in front of numbers we know that it belongs to India, that's what the machine will realise.

Deep learning is another part of legal AI. In this case, the developer instructs the system to identify the characteristic feature of an object. These things, however, need a large amount of data to be directed in the system.

Legal AI also includes the usage of Natural language processing, NLP is heavily based on machine learning and deep learning. This is the way of interaction of machine with a human being in a language that is known to humans. For example, Google Assistant, Siri, Grammarly, etc, use this method of NLP.

1.2. LITERATURE REVIEW

Barton said that "The tools of research and of expression changed, progressing from goose quill to typewriters to word processors residing in the cloud, but throughout it all the nature of lawyers' daily work changed less than perhaps any other profession"². Although the technology was not an integral part of law, many legal futurists had anticipated it.

In a journal published in September 1986, the researchers were of the view that the legal profession cannot ignore the potential that technology will offer³. Legal futurist Susskind in one of his books mentioned that 'disruptive technologies' will have a very huge impact on the lawyers in future(2008)⁴. He as well in another book mentions the idea of 'skate where the puck is going'(2013)⁵.

²RAY WORTHY CAMPBELL, THE DIGITAL FUTURE OF THE OLDEST INFORMATION PROFESSION(2016).

³Cary G. Debesonnet and George R. Cross, *An Artificial Intelligence Application in the law: CCLIPS, a computer program that process legal information*, 1 Berkely Technology Law journal 1 (September, 1986)
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.926.7352&rep=rep1&type=pdf>.

⁴RICHARD SUSSKIND, THE END OF LAWYERS?275 (Oxford University Press 2008).

Another researcher said that as we move through technology “ law practice finds itself smack in the middle of the battlefield.”⁶ In an article by Jyoti Dabass, she opines that the legal AI will be challenging the human expertise in the field of law⁷ she goes on describing how legal AI is gaining importance day by day and augmenting lawyers in their work.

Jamie J. Baker is of the view that with the increase in digitalization there is a chance of witnessing a dramatic change in the practice of law⁸. John O. McGinnis & Steven Wasick opines that law being an information technology, digitalization can improve our access of law and thus law can serve its actual purpose in a better way.⁹ AI can reach to a conclusion by a certain set of algorithms, but it can never form a case, pass a new rule or lay down a new law. AI has been excessively used in legal research, however, Jamie J. Baker opines that AI can aid human beings in conducting research, but it cannot automate it as legal research is a sophisticated process that needs human intelligence¹⁰.

However, AI is being increasingly used in legal research with platforms like ROSS intelligence and LexisNexis that uses NLP programs to help conduct research within seconds with only limited word search, due to this use of AI research has become easier and more accessible to people.

The literature available in the issue of legal AI challenges the traditional view that lawyers can never be replaced by AI. Josh Blackman is of the view that in the near future getting an answer to a legal query will be very easy.¹¹ With a surge in the use of AI in the legal field, many start-ups have been started relating to the same. Surukam being India’s first AI start-up a document review company, based on Chennai, its software is called CruxIQ and it does tasks like analysis of variation in performance like extraction of legal terminologies, etc.¹² Also the development of ROSS an AI-powered intelligent research platform for the laws in the US, this technology as well uses NLP or Natural language processing which helps to reach at solutions to legal queries and answer legal research questions within seconds, these increasing use of AI can lead to automation in the near future, legal futurists claim.¹³

In this paper, the researchers have used both primary and secondary data and conducted a survey on law students, i.e. the future lawyers and students and professionals from non-legal background to know their stand in this topic. Reference to many research journals, articles and books along with some statistical information

⁵RICHARD SUSSKIND, TOMORROW’S LAWYERS: AN INTRODUCTION TO YOUR FUTURE(2013).

⁶RAY WORTHY CAMPBELL, THE DIGITAL FUTURE OF THE OLDEST INFORMATION PROFESSION(2016).

⁷Jyoti Dabass&Bhupendar Singh Dabass, *Scope of Artificial Intelligence in law* (2018).

⁸Jamie J. Baker, *A legal research odyssey: Artificial Intelligence as disruptor*, 110:1 Law library journal (2018).

⁹John O. McGinnis & Steven Wasick, *Law’s Algorithm*, 66 Florida law review 1050 (2014).

¹⁰Id at 7.

¹¹JOSH BLACKMAN, THE PATH OF BIG DATA AND THE LAW, Kumar Jayasuriya ed. (2014).

¹²Surukam<http://www.surukam.com/>

¹³ROSSIntelligence<http://www.rossintelligence.com/>

has been made in the paper.

1.3.STATEMENT OF PROBLEM

This study focuses on the growing use of legal AI in the field of law and what effect it would have in the near future. The present study based on quantitative research focuses on the point that whether AI will ever replace human lawyers. AI being efficient and effective has a chance to overtake human beings, but with its pros there is an innumerable set of cons including the glitches in AI and how it can never create something new, the list of pros and cons go a long way, through this paper the researcher will come to the conclusion about the feasibility of the question mentioned. Also, the researcher will look into the issue of unemployment with the use of AI in the legal profession, even the topic of automation and augmentation will be dealt with in this paper. Lastly, the impact that AI will have on legal research, in the long run, will be taken into consideration and the viability of the use of AI in developed, developing and under-developed countries in the field of law will be looked into. The issues of this research have been dealt with research journals, articles, databases and primary research on the topic.

1.4 OBJECTIVES

1. To outline the problems that legal professionals will face for using AI in the near future.
2. To study whether AI will be used to automate or augment legal professionals.
3. To highlight the extensive use of legal AI and the aid it provides in researching.

1.5 HYPOTHESIS

1. The extensive use of artificial intelligence though effective and efficient, will lead to unemployment.
2. Artificial Intelligence will augment legal professionals in future rather than automating them.
3. Artificial Intelligence in legal research has made it more accessible and has increased transparency.

1.6 RESEARCH DESIGN

Considering the objectives of the paper, the quantitative research method is applied. This is data-based research where a primary survey helps substantiate every hypothesis and either validate or refute it. Along with the primary survey, research journals and articles previously published is also looked into. Some statistical information as well is taken into consideration for arriving at the conclusion.

1.7 COVERAGE AND SCOPE

This study analyses primary research data, journals, articles as well as the number of AI substantiated legal databases.

1.8 DATA COLLECTION

This is an quantitative research method and thus primary survey, as well as secondary research data, is looked into and it is critically analysed.

1.9 RESEARCH METHODOLOGY

Questionnaire was given to the subjects of this research. A top-down method of research is applied in this wherein the hypothesis is verified in the end and stated if it is right or not.

1.10. SAMPLE SIZE

A total of 60 subjects were taken in this survey ranging between the age group of 18-25. Students and professionals from both legal and non-legal background were taken to get an overall view about the subject.

II. ARTIFICIAL INTELLIGENCE AND THE IMPACT ON THE LEGAL PROFESSION

2.1 CHANGES IN THE RATE OF EMPLOYMENT

Artificial Intelligence will be creating change in the structure of employment in the not-so-distant years. AI is a branch of computer science that deals with creating intelligent machines that react and interact like human beings, this incorporation of intelligence in machines is a result of algorithms, AI and its other two subsets Machine learning and deep learning uses complexly coded algorithms that help machines now the characteristics of certain objects and help it identifying the object quickly. On a simpler note with not so complex algorithms, AI can easily replace jobs that are monotonous, this included going through contracts and reviewing it and finding the glitches¹⁴ in it as well as extracting legal terminologies and aid in faster research.¹⁵ AI intelligence in a more complex note also uses NLP or Natural Language Processing, i.e. interacting with humans in a way that human beings understand. This NLP technique is used by ROSS intelligence¹⁶ and even a platform of LexisNexis to aid in research. Thus, this machine aided software will increase the efficiency of an individual leading to a drastic change in the employment structure.

2.1.1 Efficiency And Accuracy

The use of AI for research, document reviewing or any other purpose as such will increase the efficiency of an individual, thus a smaller number of people will be recruited by any company because a person with the aid of AI will be able work faster than he/she would if the situation was otherwise. Also, AI will create more accurate results in case of document reviewing or finding out glitches, i.e. something that is monotonous and consumes a

¹⁴Id at 11.

¹⁵ Id at 12.

¹⁶ Ibid.

lot of time and energy of an individual. In a survey conducted in the USA, 20 best qualified US lawyers with years of experience competed against an AI system, LawGeex in the context of reviewing business contracts, the results of the survey showed that the AI had a 94% accuracy rate compared to the 85% of the human lawyers combined. It was contended that the primary contract overview of 96 minutes by human lawyers was reduced to 26 seconds in case of the AI¹⁷.

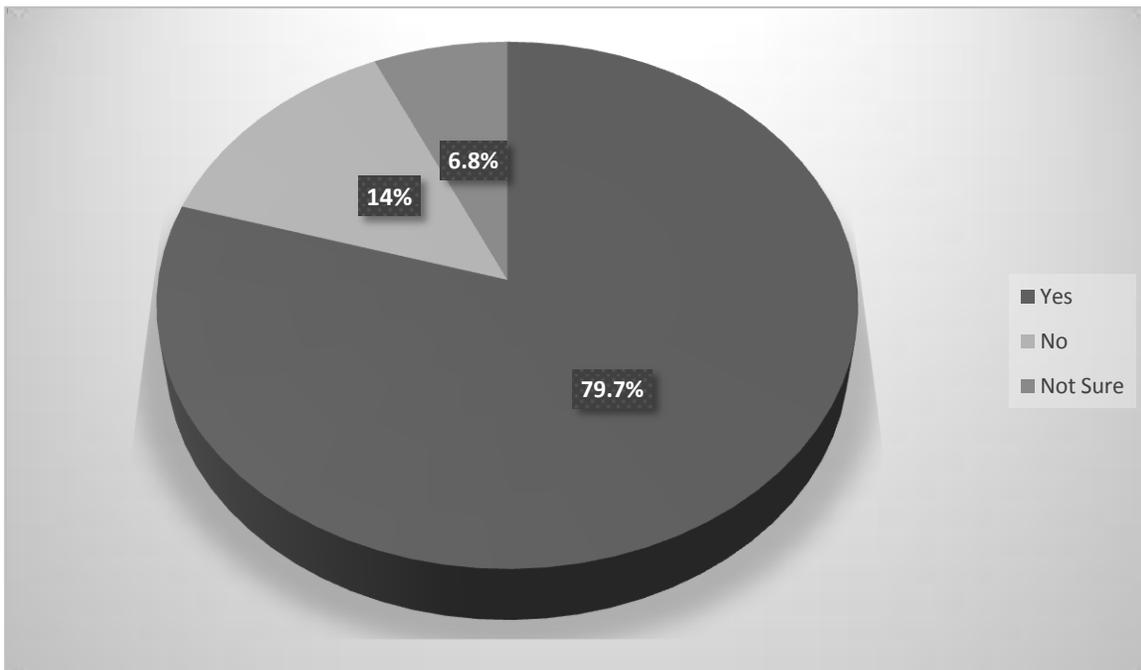
The AI aided research as well has increased efficiency and accuracy, nowadays one can access judgments, bare acts and other legal documents at their finger-tips other than going over hundreds and thousands of pages of books, even word search is allowed where one word can fetch thousands of relevant results. LexisNexis recently has even come up with Lexi Analytics where one can find even relevant arguments for their respective cases.¹⁸

2.1.2 Survey Result

The question of whether use of AI in the longer run can lead to unemployment and whether it would save professionals from the monotony of boilerplate clause was asked in the research conducted.

The responses are depicted by a pie chart:

1. Will the extensive use of AI cause unemployment in the long run?

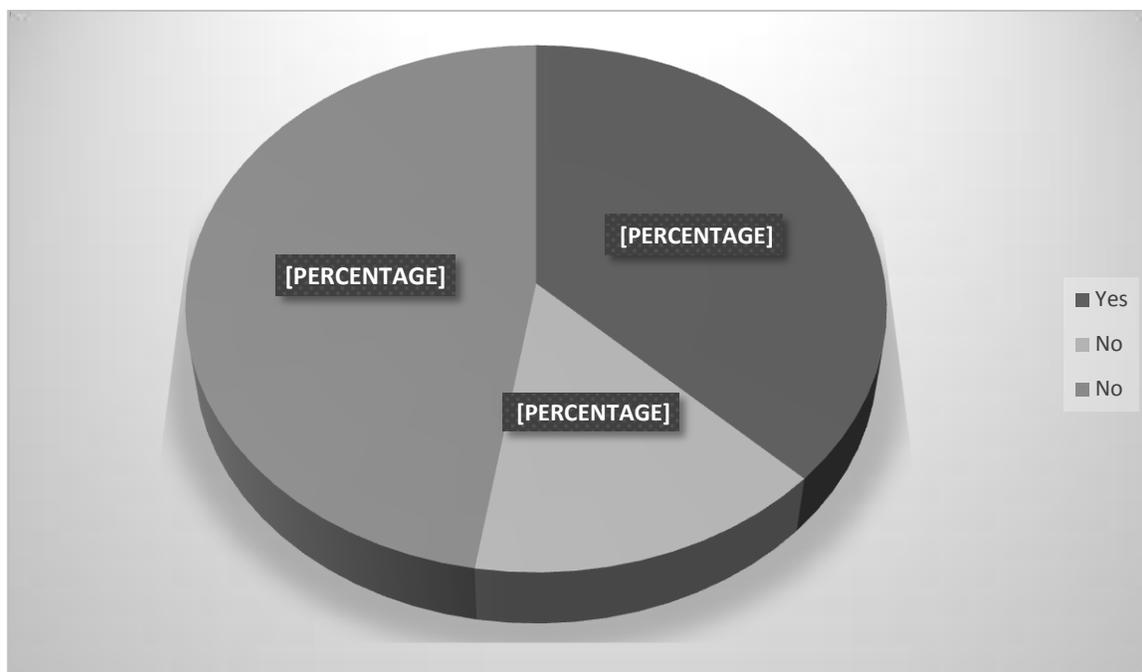


79.7% responded affirmatively answered to this question showing how legal AI may pose a challenge to employment in the not-so-distant future.

2. Will AI save professionals from boilerplate clause?

¹⁷LawGeex<https://www.lawgeex.com/resources/aivslawyer/>

¹⁸LexisNexis<https://www.lexisnexis.com/en-us/products/context.page>



37% respondents answered affirmatively whereas 48% had a negative response showing the unawareness among people as legal AI already aids in contract reviewing and can save professionals from boilerplate clause.¹⁹

2.2 AUGMENT OR AUTOMATE-MEASURING THE ODDS

Some legal futurists are of the belief that AI should automate the legal profession²⁰ while others believe that AI can only augment the professionals²¹.

2.2.1 Automation

Many future legal analysts believe that the legal roles might be automated in the near future. According to Deloitte, in an analysis, Peter Saunders stated that around 2020 the legal market will hit a “tipping point”²² and around 2036 1,00,000 legal roles will be automated. It is of the view that there will be a radical change in the legal market and client expectation and this might lead to automation.

The concept of automation of legal work by AI has already come into being with increasing AI databases that help in research, document review and getting convenient arguments for a certain set of facts, the biggest example of a company using automation seen in the legal market right now is ‘wevorce’. Wevorce is an

¹⁹Id at 16.

²⁰Deloitte, *Developing legal talent- Stepping into the future law firm* (2016).

<https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/audit/deloitte-uk-developing-legal-talent-2016.pdf>

²¹Id at 7.

²²Id at 19.

automated online divorce solution with an aim of making every divorce amiable this AI tells the parties to notify it their “optimal outcomes” and accordingly certain plans are framed after that, this is supported by a team of mediators that have sessions once a month, this can be used for divorcing in a minimal cost, and also after the divorce this AI prepares a list of personalised songs and activities for the parties to support them in their hard times.²³

Another technology venture created by law firms is NextLaw, this is a legal technology start-up that provides end-to-end solutions to its clients.²⁴ Also, the first India based AI start-up paves its way to automation in case of document review.²⁵

2.2.2 Augmentation

The majority of legal futurists believe that AI will augment and not automate the legal system. In an interview of Bill Fenwick one of the expertise in the field of artificial intelligence, he said that AI can automate some areas of the profession but every time in every case some human intervention has to be there, that is to say, that a human should always be in the loop while using AI. VR Ferose and Lorien Pratt are of the view that AI does not do the work of the lawyers but pre-filter their work, this helps increase accuracy and efficiency, they talk about the AI augmented arrangement where human lawyers are always kept in the loop of AI to mitigate the risks that can be occurred.²⁶ Also, machine learning can mitigate the risk by providing predictions against behaviour in a case at hand.

Futurists think that AI will be replaced by augmented technology²⁷ where lawyers and AI will work hand in hand and no one would overpower the another at any point of time, in this case, the perception is that document reviewing, etc are just pre-filters that the AI does before it is handed over to the human lawyers, also even though AI-powered legal research is seen most often but it is just an augmenting method and does not automate anything.

2.2.3 Survey Result

1. Will human lawyers ever be substituted by AI?

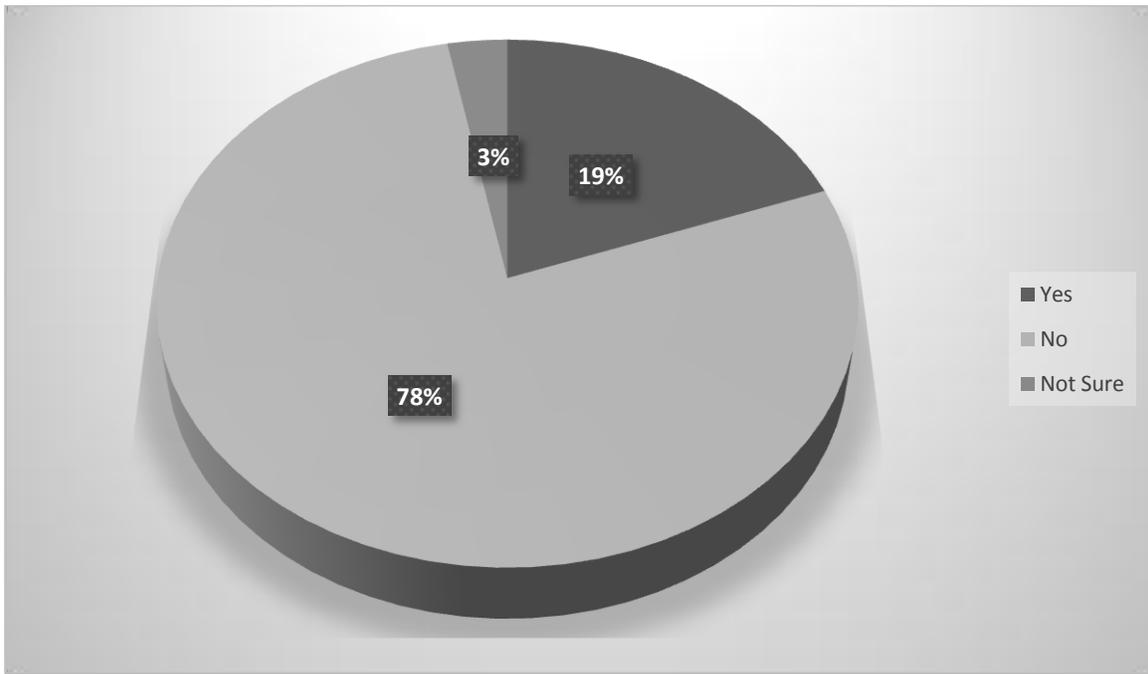
²³WeVorce<https://www.wevorce.com/>

²⁴NextLawlabs<http://www.nextlawlabs.com/>

²⁵Id at 11.

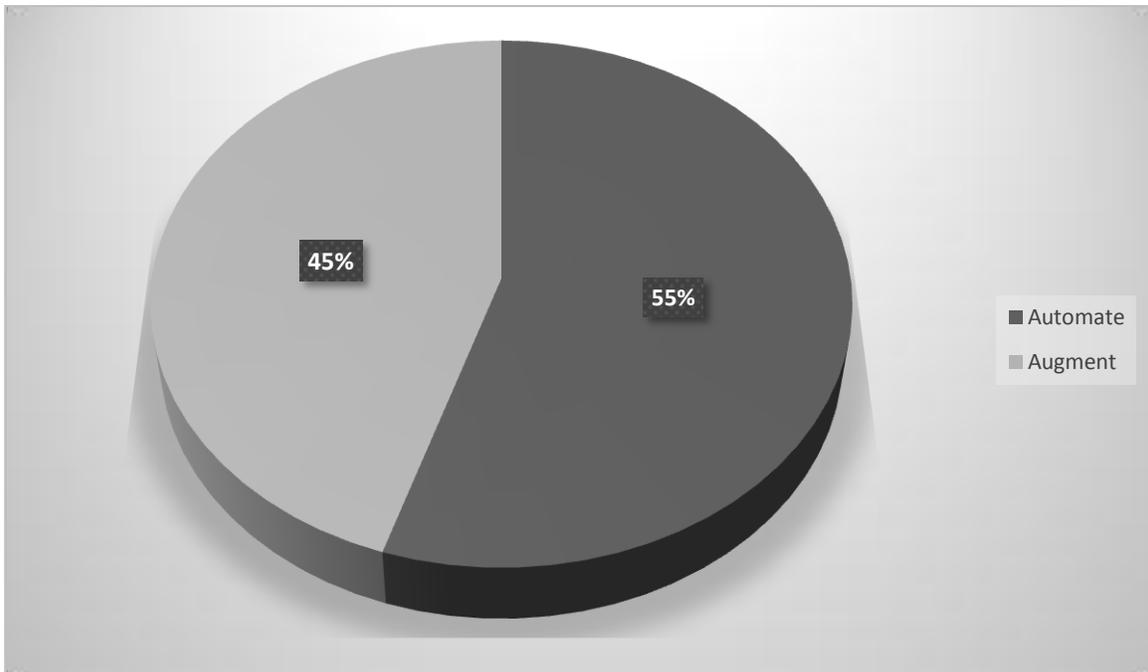
²⁶VR Ferose and Lorien Pratt, *How AI is disrupting the law*, Digitalist Magazine April 3, 2018 <https://www.digitalistmag.com/digital-economy/2018/04/03/ai-is-disrupting-law-06030693>.

²⁷Ibid.



Contrary to another research study²⁸, 78% respondents were of the belief that legal AI would substitute human lawyers.

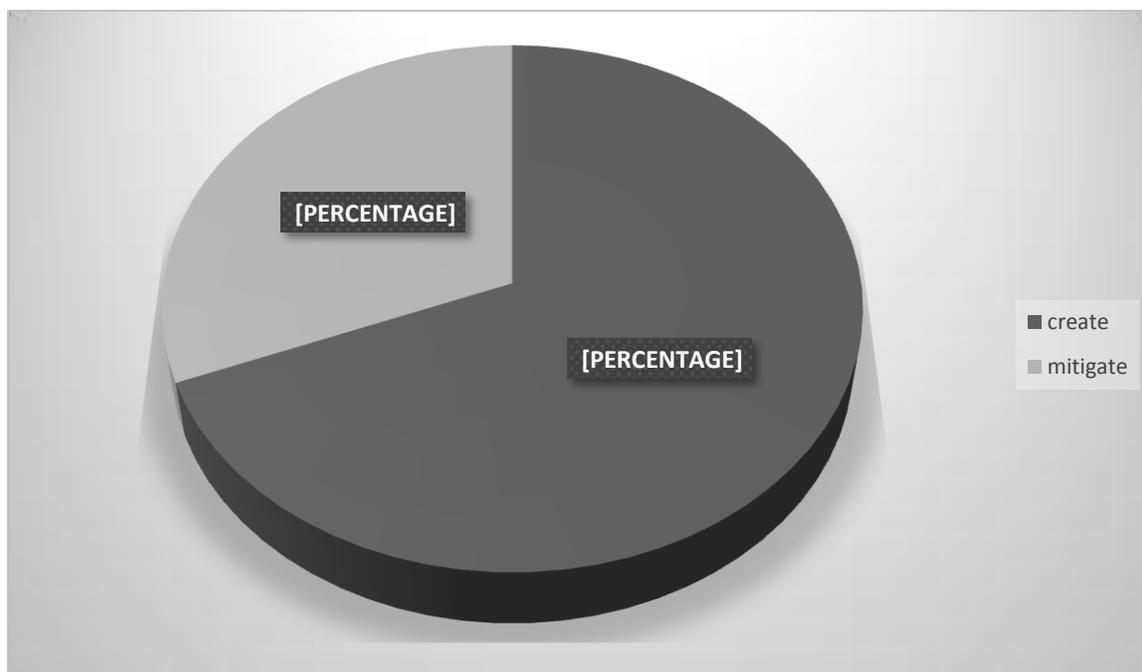
2. Should AI automate or augment the legal profession?



Again conflicting with the earlier established interviews and studies, 55% of the respondents believed that AI will automate rather than augmenting legal professionals.

²⁸ Id at 7.

3. Will AI create or mitigate risk?



69% respondents answered affirmatively in this question showing that human expertise is very much needed to properly put legal AI to use.

2.3 ARTIFICIAL INTELLIGENCE IN LEGAL RESEARCH

Conducting legal research is an innate part of the everyday lives of attorneys and other legal professionals. This is has taken a drastic change with the introduction of artificial intelligence. With the emergence artificial intelligence inclusive of machine learning and natural language processing, it has been made possible to search for and rank information in dramatically different way²⁹. Legal research is the process in which necessary information is identified and retrieved to be used as a support in the legal decision making. In a broader sense legal research is a process that includes every step of action which begins with the analysis of the facts of the given problem and is concluded by the application and communication of the final results of the research³⁰. Artificial intelligence has bought about a huge change in almost all fields for example medical field, engineering etc but the introduction of artificial intelligence in law field has turned things around for people in the legal field. Before the introduction of artificial intelligence in legal field the legal research was a colossal task of going through the law journals to find the relevant information and cases but with the initiation of artificial intelligence in the law field the process has eased down a lot. The introduction of artificial intelligence has increased the efficiency and quality of the research results. There are many institutions that are introducing artificial intelligence for the research work like LexisNexis, Blue Jay, CARA.AI etc. With the emergence of

²⁹Attorneys of national legal research group Inc., *The Real Impact of Using artificial intelligence in legal research*, 2 (2018) .

³⁰Barkan, Steven m et al , *Fundamentals of Legal Research* (10 edition Foundation press).

artificial intelligence technologies like natural language learning and machine learning, it is now possible to search for computer systems to read an entire document from the litigation record and take into account the information for a more calculated and targeted research³¹ this has become a lot easier than just typing keywords for the purpose of research and going through hundreds of relevant research results based on the keywords used for the research. “According to a survey conducted on the American Bar Association by the legal technology it was so concluded in the survey that the impact of researching 24.5% faster in substantial for most attorneys. According to the American Bar Association Association’s 2017 Legal technology survey, attorneys spend an average of 16.3% of their working hours conducting legal research, solo attorneys 18.1%, younger attorneys with 10 or fewer years of experience 26%”³². “This clearly shows that an average attorney works 66 hours in 50 weeks a year, switching to artificial intelligence for legal research work could be expected to save them 132 to 210 hours every year in the legal research”. There are many factors for which the people in legal field are opting for artificial intelligence for legal research some of the main reasons being:

- **Ease and simplicity**

The research done using the artificial intelligence is easier to use and is very simple to find out the relevant information instead of going through law journals or going through all relevant the results shown as per the research done on the basis of keywords that is it makes the work a lot easier by showing the exact and listed relevant cases.

- **Superior quality of research**

With the use of artificial intelligence, the results produced as a result of the search done are better listed and ranked according to the relevance of the cases thus lessening the time consumed in doing legal research for a particular topic.

- **Speed of finding the research results**

Artificial intelligence required less search terms, less time, less of filtering the results produced were more lucid, coherent and well formatted. It drastically reduces the time to find relevant research results

From the above advantages of using artificial intelligence we can clearly state that the artificial intelligence is furnished with the specific ability to provide information in the litigation record and mend the search experience of every individual accordingly which in turn increases the efficiency and efficacy of legal research. The innovation of artificial intelligence was in itself a huge step towards the

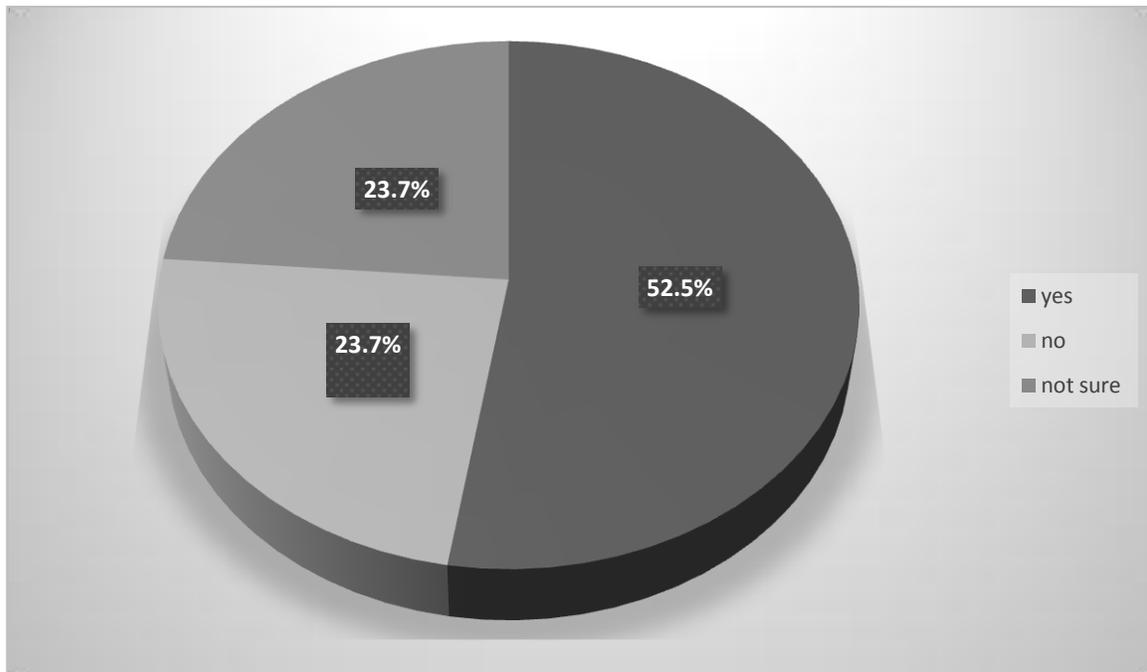
³¹Id 24.

³²American Bar Association, *Legal technology Survey Report*, 5 (2017).

future of mankind. Now it is changing the nature of legal research, leveraging the performance of legal research. Thus, this is certainly the future of legal profession.

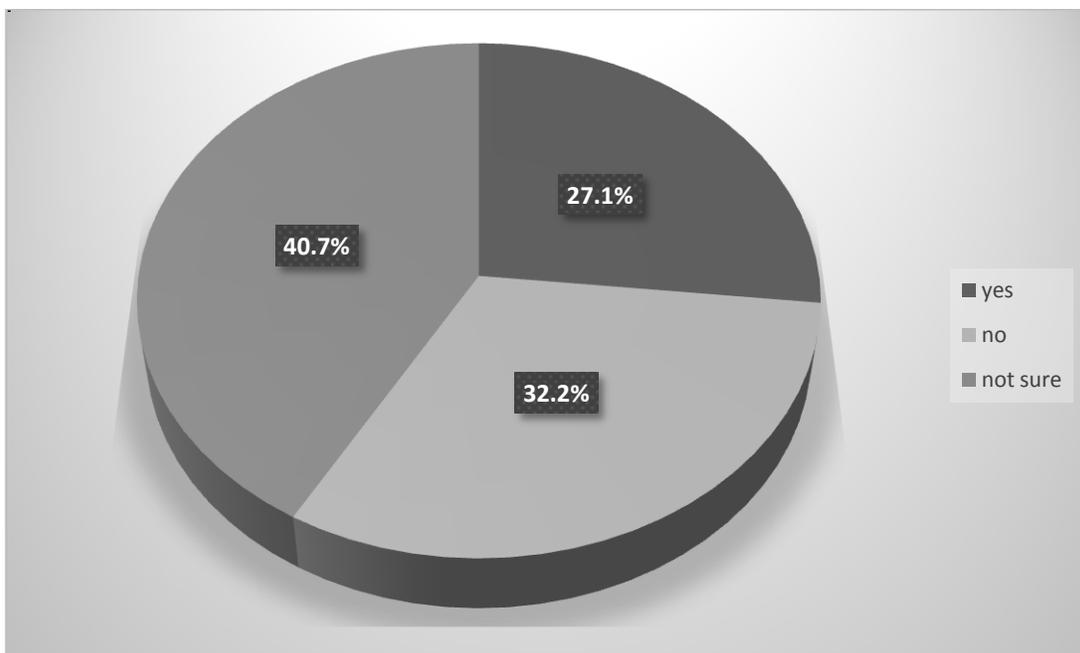
2.3.1 Survey Results:

1. Has law become more accessible and transparent because of artificial intelligence?



52.5% respondents were of the view that legal research has improved by the introduction of legal AI.

2. Can predictions made on judgements by artificial intelligence be relied on?



40.7% respondent were not sure about this question showing that there is always a chance of having an AI automated legal system or otherwise.

2.3.2 AI: Underdeveloped, Developed And Developing Countries

The introduction of artificial intelligence has influenced various countries in different ways. The developed countries have accepted the artificial intelligence in every aspect and has been using it extensively. The developing countries are trying to embrace the artificial intelligence and such countries are still working on using the artificial intelligence in most efficient ways and introducing it in fields where due advantage can be taken of this technology. The underdeveloped countries are facing difficulties in accepting the new technology because maximum of their population is not so used to such high-level technologies and they find it difficult to use such high-level technology. For a better understanding of this the use of artificial intelligence in few different countries is being studied. The countries being referred to here are China, South Korea, Singapore and India.

China

- One of the leaders in technology in China named Wusong Technology has been working on digitizing the way courts functions with the help of AI enabled robot-chat box called “Fa Xiaotao”, which will offer its users to case analysis and locate the lawyers. It pocketed the biggest investment made in the legal technology by the end of 2016 that amounted to US \$17 million.
- In October 2017, the Intermediate People’s Court situated in Beijing had attracted a widespread attention when a robot was introduced and put into operation called Xiao Fa. The robot was designed such that it could answer questions verbally and was efficient intaking in queries on its screen with the use of a touch screen or keyboard.

Singapore

- In 2017, Wong partnership, one of the leading law firms in Singapore introduced AI from a London based AI firm called Luminance, it was introduced in order to support its corporate practise. The technology was used in maintaining diligence in M&A transaction documents and to highlight sections that were required to be reviewed by the lawyers.
- Another law firm named Linklaters of Singapore has been working in collaboration with software company named Eigen Technologies in order to develop an AI program that uses natural language processing so that the computers are able to recognise and respond to human language and are efficient enough to read text contracts and documents like the NDAs, this software is named Nakhoda.

South Korea

- The law firm Yulchon based in South Korea is working with Yulchon to a technology that provides low cost compliance tools, inclusive of apps for its clients.

India

- Cyril AmarchandMangaldas one of the leading law firms in India is now embracing the AI and using it for contract analysis and reviewing of partnership documents in collaboration with Canadian Assistant Kira Systems.
- There are certain start-ups like Case-Mine and NearLaw that are trying to reinvent the process of legal research. They use algorithms that ranks all the cases according to relevance and efficiently identifies .01% of the relevant case according to the researcher's search³³.

III. CONCLUSION AND RECOMMENDATIONS

In the summary, the effect that artificial intelligence has or will have in the legal field is examined in the paper. The first chapter gives an overview of the research paper, the hypothesis, the objectives of the paper and the questions that are to be addressed in the paper. The second part deals with impact that artificial intelligence will have on the field of law.

The first part of the paper deals with the efficiency and accuracy that artificial intelligence has over human lawyers. In a recent study by LawGeex with twenty US lawyers for contract reviewing, it was found that AI was more efficient and accurate than the lawyers. This is can lead to unemployment in the long run as one human lawyer aided with AI can do a task equivalent to quite a few human lawyers. The survey taken on 60 people between the age group of 18-25 shows that 79.66% of 60 subjects involved, believe that extensive use of AI will lead to unemployment in the long run. This verifies the first hypothesis-*The extensive use of artificial intelligence though effective and efficient, will lead to unemployment.*

The second part of the paper deals with the augmentation and automation by AI in law as a profession. Online platforms like Wevorce (with which online divorce can be conducted) and NextLaw prove it. It is anticipated that by 2036, 1,00,000 legal roles will be automated but futurists still believe that a human lawyer is always need and that AI does not do the whole work for an human lawyer, it just pre-filters the work for human lawyers, thus although some legal roles like contracting reviewing, etc will be automated, but human intervention will stay at play. Thus, AI can augment but never automate law as a profession. This verifies the second hypothesis-*Artificial Intelligence will augment legal professionals in future rather than automating them.*

³³VikasSahita, *AI/ML impact growing across Asia*, Analytics India Magazine (April 5, 2018).

The third part of the paper deals with whether legal research has become more accessible and transparent with the introduction of AI in the legal field. According to the research conducted on the American Bar Council shows that using AI for legal research will save up to 210-132 hours per year for an attorney. The survey taken on 60 people between the age of 18-25 shows that 52.54% of 60 subjects involved believe that law has become more transparent and accessible with the use of AI and 23.23% of the subjects are not sure of the same. This verifies the third hypothesis-*Artificial Intelligence in legal research has made it more accessible and has increased*

The conclusion and recommendations can be summarised as-

1. The extensive use of AI in legal field though will improve the accuracy and efficiency but will cause unemployment in the longer run.
2. The AI should be used for augmentation and not automation in the law field because the cases need human interpretation.
3. Legal research has become a lot easier and more reliable with the introduction of the AI.
4. The developing and under developing countries need to be developed to an extent that it is capable of using AI with utmost efficiency.
5. There must be a subject in the law field such that the future legal professionals are equipped with the knowledge of AI or sessions must be held for training them.
6. Though AI can be trusted but in few legal fields the result must be verified by a human legal professional.
7. The predictions made by the AI regarding any judgement should not be completely relied on.

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