

**Impact of AI with the User's Data regarding Facebook Business and  
Targeted Advertising in the United States in Tourism Industry**

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# Submission of Thesis and Dissertation

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## **Abstract**

The study on this paper has focused on the impact and benefits that of using advanced technological tool has been faced by the organisations that operate in the tourism sector of the United States of America. The impact that Artificial Intelligence has possessed on the social media platform of Facebook has been the main researched area of this paper. The enhancement of the area of information and technology has been the main discussed area in this paper. Different factors related to research methodology has also been discussed in this research paper. After analysing the data, it has been found that most of the respondents out of the selected sample size of this paper has agreed to the fact that Artificial Intelligence possess an important part in acquiring the data related to the alterations of the behaviour of the consumers of the American tourism sector. This study has successfully achieved the aim of this research, which focused on analysing the Impact of AI with the user's data regarding Facebook business and Targeted Advertising in the United States in Tourism Industry. The study shows that in most of the cases, like content development, Google ad management, online customer behaviour analysis, programmatic advertisement creation, most of the respondents agreed to consider the role of AI in Facebook ads to manage the business efficiently. It has also been found here that the artificial intelligence which Facebook is using is something through which everyone can benefit from the use of this advertising platform. The recommended steps would help the people to conduct the study on similar kind of topic, so that the outcomes can be met in a more structured and efficient way.

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## **Chapter 1: Introduction**

### **1.1 Background of the research**

AI is mainly referred to as the specific simulation of the specific human intelligence within various machines that have been programmed towards thinking like humans as well as mimicking their different kinds of actions. The particular term may even be directly applied to any particular machine that will be exhibiting several different kinds of traits that have been directly associated with the mind of human-like the solving of problems and even learning. It has been known that the most idealistic characteristic of the technology of AI is its respective capability towards rationalising as well as taking various kinds of actions that will be having the best chance of directly achieving a particular goal (Karim et al., 2019). A particular subset of the technology of AI is ML or Machine Learning that is mainly considered to be a particular concept that various programs of computer can be automatically learning from as well as adapting towards new kind of data without directly being assisted by various humans. Techniques of deep learning are known to be directly enabling this particular learning which is automatic by absorbing larger amounts of data that are unstructured involving various images, video or rather a text.

Now, this technology of Artificial Intelligence is considered to be the buzzword these days. However, whenever it has been found to be coming to the application in the practical life of some such kinds of technologies, it may be a little unclear regarding the breadth of different products and even applications within which AI is known to be playing a great role. Many, people, marketers and even consumers are known to be struggling a lot with the specific AI concept and how if it will be relevant (Ng, 2016). However, it has been noticed that many of them do not at all necessarily realise the way how faster AI has been found to be grabbing a specific foothold in the specific place of market and how various brands have been utilising it for impacting the huge success of the various teams of advertising and also marketing. AI has been found to be hugely impacting both advertising and also marketing by directly targeting as well as evolving the appropriate audiences, utilising AI with the recognition of image and also by optimising the ad spend and even management.

Historically, it has been known that for beginning a particular campaign, one has to be first research on the audience, come up with a particular offer that will be compelling, creating some advertisements that will be amazing and even deploying a specific campaign as per the budget which has been allocated (Kaur et al., 2019). While anyone can be reporting on the

campaign's success, there is quite a little bit of analysis that is manual that will be taking place for identifying and also attributing the greatest ads of performing, all of the audiences that will be best and even the different kinds of opportunities for expanding and also contracting the key initiative. Anyone can be then being capable of identifying all of the different sections of the whole country and even the day times which have been found to be the best. But, as time has moved on, several marketers have been found to have started towards having the capability towards not only capturing but even leveraging greater data of the user. The main fact is that the huge amount of data related to the consumer is found to be readily available to different marketers that have started to exponentially increment to the point where anyone did not even possess the capacity towards processing all of it in a way that will be integrated.

There are two kinds of aspects that can be deciding which kinds of advertisements will be appearing at a moment which is given and they are the audience targeting and also ad auction. Being advertisers, one must be opting for the targeted audience and they must be narrowing several kinds of options for reducing the specific likelihood of different placements that are ineffectual (Alarie, Niblett & Yoon, 2018). One of the key benefits of directly paying for various advertisements on Facebook is mainly that marketers can be taking a complete list of email and can be building a custom audience. Normally, Facebook will only be deciding which kinds of advertisements to show to several people depending on their total score of value. The key reason AI and machine learning are essential is mainly that they can be informing the specific equation which will be deciding if or not the advertisement will be winning within the auctions (Davenport et al., 2020). Like for example, it is a way that is perfect for predicting different kinds of actions of the recipient. It must be noted that the objective of the campaign will be playing a very much essential role. If one will be wanting to generate visits to the website, Facebook will be deciding the specific likelihood of this particular occurring for each and every potential advertisement position (Araujo, Neijens & Vliegenthart, 2015). For estimating the specific rate of action, the particular model will be considering both on Facebook and even away from the specific platform. With Machine Learning, several predictions will be growing much stronger over time and this is the reason behind Facebook being an essential platform of advertising.

## **1.2 Problem Statement**

For all of the different starters, one of the key primary ways which AI has been impacting the worlds of both marketing, as well as advertising, is by the proper processing of the data that have been available and possessing the specific capability towards creating an



ideal audience for any particular service or rather product which anyone can be used for targeting in a huge variety of several ways (Shah et al., 2020). It is not at all just the specific creation of the huge audience, it is also regarding the particular way AI has been capable of continuously evolving the particular audience that has been entirely depending on the ultimate performance and also expanding it to various other kinds of segments which may be directly sharing similar behaviour of purchasing (Kietzmann, Paschen & Treen, 2018). Provided that the tracking of the package has been properly set up, AI can be very much quickly identifying wherever several conversations have been coming from and in a seamless way shifting the specific spend around for following various audiences which are converting. Additionally, one can be automatically creating the same kinds of audiences which will be sharing similar attributes to various audiences that have been existing that will be allowing anyone to quickly scaling these kinds of campaigns for reaching the same kind of people that also possesses a huge chance of having been a conversion.

For various hotels and even various other kinds of business within the industry of tourism, one of the most existing works on the utilisations of AI is for offering assistance to various customers online (Tussyadiah, 2020). Particularly, it has been seen that there has been already a broad spread adoption for several purposes of directly powering a number of chatbots on the various platforms of social media and also different applications of instant messaging. Utilised in such a way, AI is capable of responding to a number of different questions and also offer information that is hugely valuable to several customers. Consumers are found to be demanding quicker times of response on various platforms that are online and AI has been allowing several businesses to properly deliver times that will be entirely impossible for humans (Astuti & Darma, 2019). Hence, the study has been aimed at showing the impact of Artificial Intelligence with the user's data about the business of Facebook and also advertising that has been targeted in the United States in Tourism Industry

### **1.3 Research aim**

The aim of the study is to properly set out hugely significant research on the effect of AI on Facebook as a platform of marketing, targeted marketing and also a business. The sector which has been focused on is the tourism sector.

### **1.4 Research Objectives**

- To know the different kinds of effects of artificial intelligence within the Facebook business and also the targeted marketing.

- To know the way AI has been impacting the procedure of advertising of various businesses.
- To know the way AI will be used in Facebook for directly impacting the user's confidence and also Facebook's responsibility to several customers.

### **1.5 Research Rationale**

Optimising the ad spend and also management has been considered to be one of the key areas that have been found to be hugely impacted firstly by AI (Mogaji, Olaleye & Ukpabi, 2020). But the management of different accounts of advertising has hugely transformed as well as streamlined the particular way several campaigns have been running currently. Whenever it has been found that there is the beginning of advertising which is digital, one has to be having to opt for the main audience and also rely on huge piles of various data, spreadsheets and sheer will be towards continuing towards the optimisation of all of the various audiences and even spend. Each and everything has been manually adjusted and obtaining several insights into a number of various trends and also even opportunities of saving cost have been considered to be an art other than a specific science.

In the current days, it has been noticed that with the help of AI, one can be having a platform of software which will be performing a huge amount of work, directly steering more amount of money to various audiences which have been greatly likely to be converting and also searching for the best places for obtaining the message in front of such kinds of buyers (Cockburn, Henderson & Stern, 2018).

The creation of various advertisements has been a quite complex skill for various years, directly combining a team which is talented with extensive knowledge in the market, along with the proper recognition of brand within the specific audience that is targeted and also a budget which is commensurate for funding it all. AI is implemented for helping a lot in tracking as well as driving several conversions and even open rates in earlier campaigns of email marketing (Li, 2019). AI has been found to be playing a huge role in Facebook in ad creation, and event management of the campaign. The section after this which is a literature review will be comprised of a lot of information from earlier resources regarding the key topic of research.

### **1.7 Overview of the chapter**

This chapter has been able to properly depict all of the different key research objectives and also the research questions which are very much essential to be addressed for bringing out most from the whole research topic. One may be looking at the AI on Facebook since this

actually something from which everyone can be benefitting whenever utilising the platform of advertising. It has been known that Facebook has been delivering various ads that are tailored towards several audiences that are perfect.

## **Chapter 2: Literature Review**

### **2.1 Introduction**

AI has been found to be offering a lot of help with specific optimisation. Several enterprises that have been offering a number of advertisements like the huge platforms of social media, utilises AI for monitoring ad spending, sales, behaviour and also tracking. It is also offering a huge amount of help in altering how different enterprises have been delivering various advertisements, enhance the relevance of the ad and also properly monitor the quality of the ad. Keeping this into particular consideration, in this particular section of the thesis that has been concerned, a proper review of the various existing literature has been properly conducted, for developing different kinds of insights needed to address several questions and also objectives within the study that has been hugely concerned, that has been aimed towards analysing the Impact of AI with the user's data regarding Facebook business and Targeted Advertising in the United States in Tourism Industry.

### **2.2 Prediction of the responses of the consumer to a specific chatbot on the Facebook**

As chatbots have been found to have become incrementally popular over the last few years, most of the various sites of social networking have properly recognised their great potential for a number of different purposes that are commercial (Brandtzaeg & Følstad, 2018). Their faster as well as broad spread use has been warranting a much-enhanced understanding. The study has been found to have properly examined the great effectiveness of the chatbots on Facebook for various kinds of brands. In Zarouali et al. (2018), the findings have been found to be revealing the most required insights on the various responses of customers to a specific chatbot on the messenger of Facebook.

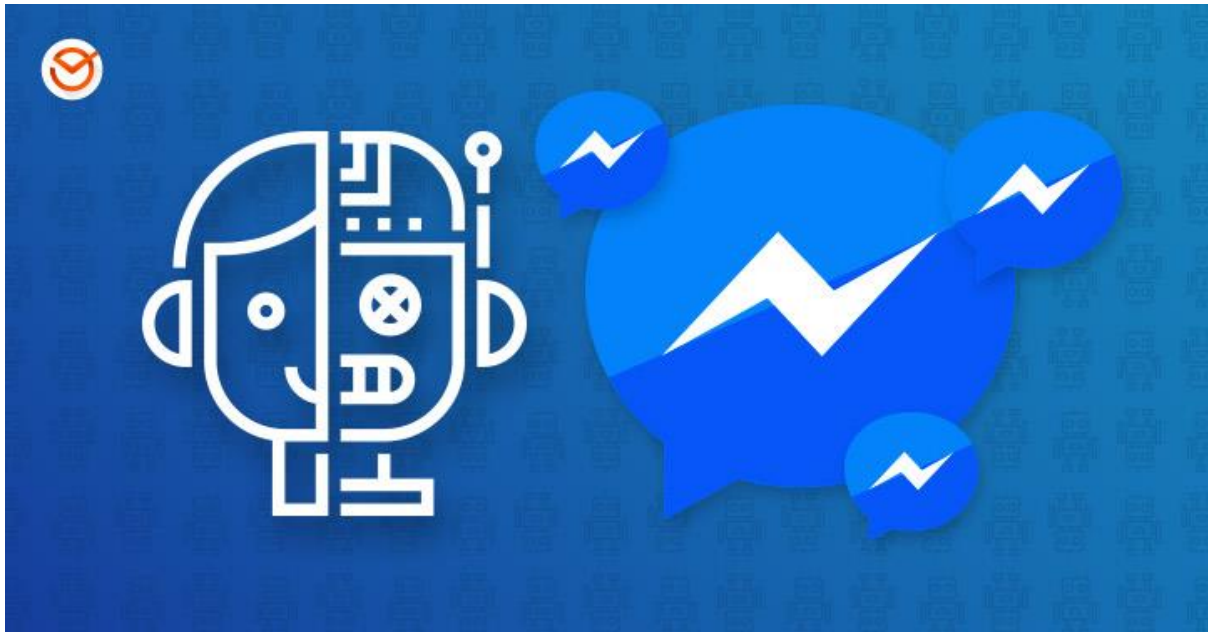


Figure: Chatbot on Facebook

(Source: Zarouali et al., 2018)

This study has served a very much essential point that has been paving the specific way for a timely agenda of research on the interactions of different customers with a number of interfaces which is conversational. Launching a specific chatbot on the Facebook social networking site can be properly characterised by a greater uncertainty degree since they can be programmed within a number of different kinds of ways, utilising a set of different rules that are quite distinct. Van den Broeck, Zarouali and Poels (2019) said that companies may be involving a number of jokes or rather also smileys within the various conversations for incrementing pleasure, responding to different consumers quickly for directly increasing the usefulness and also for offering much-detailed information for incrementing the usefulness.

### **2.3 Marketers learning for Facebook brand photos**

It has been shown that users of various social media are posting a number of various photos with different brands. It has been revealed that a much greater intention for posting the photos that have been directly related to the brand is associated with greater levels of love for the brand, brand loyalty and also the endorsement of WOM of that specific brand. It has been found that there is a much potential relationship between posting the various photos of the brand and also the brand love than between posting the photos of brand and either the loyalty of brand or the endorsement of WOM. This is very much surprising for the endorsement of WOM because posting a specific photo of the brand is a particular form of visual WOM and

hence one may be expecting the endorsement of WOM for being much strongly related towards actually posting several photos of the brand. In Kaiser et al. (2020), it has been found that if various marketers have properly coded the particular information regarding brands in the photos of the user, they can be predicting various outcomes that will be relevant managerially. The research has found that machine learning which will be going much far beyond typical analysis of regression, is an approach that is greatly useful for predicting the brand love of users, brand loyalty and also the brand's WOM endorsement from their different photos on Facebook.

#### **2.4 Perceived impacts of AI and responses to the positive intervention of behaviour change**

Consumers are known to be increasingly utilising AI technologies for daily activities, whether they are able to realise it or not (Härting, Reichstein & Schad, 2018). With the prevalent utilisation of various smartphones, personal assistants that are digitally powered by NLP and even program of speech recognition, like Apple's Siri, have been found to be gradually becoming the different applications of choice whenever it will be coming towards searching for a larger amount of information and even recommendations that personalised for a number of different services as well as products. In tourism and also travelling, utilising a specific combination of Machine Learning also NLP, chatbots, as well as concierges of the robot, are found to be available readily towards assisting various tourists indirectly making a number of various decisions on hotels, packages of the tour, attractions and also hotels (Tussyadiah & Miller, 2019). From the specific perspective of industry, the huge advancement in the abilities of AI have been directly translating into various benefits of business as systems of AI can be assisting in properly streamlining various procedures of the business, incrementing productivity and offering the much-enhanced experience of the customer.

In a study by Clarke (2019), it is found that technologies of AI possess a huge potential towards aiding not only just in the promotion of various products as well as services of tourism, but also in influencing responsible behaviour of travel for properly supporting sustainability. The specific effectiveness of utilising AI for positive interventions of behaviour changes hugely depending upon the attitudes of the consumers to that of AI. While contributing towards explicating various roles of AI in the positive intervention of behaviour change, thus directly opening a specific pathway for the implementation of strategy and also policy supporting the tourism which is sustainable, this particular research has been able to provide a lot of

information. This research, however, has not at all considered several factors which have been directly associated with the hugely responsible behaviour like the different concerns that are environmental.

## 2.5 AI for social media

As per Lewis and Moorkens, (2020), AI is known to be a specific key component of the social networks that are very much popular used every day. Facebook is known for utilising machine learning that is hugely advanced for doing and everything from serving everyone the particular content to recognising the face within the photos for particularly targeting various users with the advertising. Instagram, which is also owned by Facebook, has been utilising Artificial Intelligence for identifying various visuals. On the other hand, LinkedIn is also known to be utilising the technology of AI for offering various recommendations related to the job and also properly suggest a number of people whenever one may be liking to link with and also directly service particular hosts within the feed. Another social media site that is Snapchat is known for properly leveraging the specific power of the vision of the computer, a technology of AI, for well tracking different kinds of features and can also be overlaying filters that will be moving with the face within real-time (Wang et al., 2020).

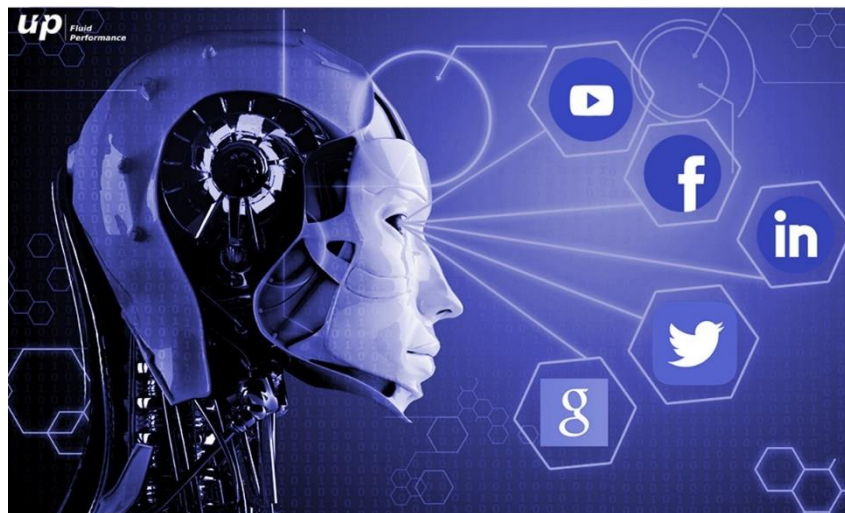


Figure: AI for social media

(Source: Wang et al., 2020)

These are some of the very few examples showing the particular way AI has been found to be working behind scenes for powering a number of different features of the hugely popular social networks in the world. And, across various platforms of social media, both machine

learning and also AI have been found to be regulating the way any content that is created and the ads which are bought are directly placed in front of different kinds of users, often in a number of different ways that are not at all wholly transparent to all of the various marketers.

This actually to say it all that AI is a very part that is fundamental of the way the current day's various social networks have been functioning. Appel et al., (2020) said that AI is very often found to be greatly operating behind the scenes of the different platforms that are very much popular and totally at the particular discretion of the specific enterprise which has been owning the particular platform. However, that does not at all be meaning that marketers cannot leverage AI for social media. It can be said that AI is being greatly used in various marketing tools of social media which have been available commercially across different use cases.

## **2.6 AI on marketing in the future**

Artificial intelligence has been found to have greatly dealt with as the very next alternation in the industry and it is believed by the people that AI can be offering a great option for most of the issues and even challenges that are existing currently. According to Rust (2020), AI can be fixing a number of different kinds of problems that can be taking place within the future that has been upcoming. AI has a great possibility of the development of completely new markets, modernised technologies and also entirely the environment. Chatbots are considered to be some programs of a computer system that are established for having a direct link with different consumers online and they will be likewise finishing order for all of them. Chatbots can be directly included in several sites and even pages of various social media sites. They can be enhancing the involvement and can also be offering a lot of help to various clients all day long (Pradeep, Appel & Sthanunathan, 2018). They can also be dealing with different kinds of clients at once. It is to be noted that chatbots have been the capability of responding promptly to various questions of the client via interaction in chats. Many services that are provided online have been known to be executing chatbots for offering much-enhanced support to the client. The actual elegance is mainly that in most cases, customers do not at be able to understand that they have been interacting with the particular device.

Now, there is a semantic search that is known for aiding various users in a significant manner for locating different kinds of answers for their respective search very much quickly. It is mainly a technique of searching information that is known for properly understanding the intent of the customers and even the definition of the search question that is mainly contextual as directly opposed to various keywords (Campbell et al., 2020). AI can be doing this by



properly following the key purpose of the different phrases that have been searched. It also entails the discovering of the specific link between words as well as phrases within the inquiry of search. The strategy of machine learning is known to be assisting several search engines in properly comprehending what kind of information will be needed by various individuals depending on the history of the search and also the identity of the customer (Ma & Sun, 2020). With the help of AI, the quality of search will also be enhancing in a progressive manner.

## **2.7 Advertisement targeting and anticipating marketing assisted by AI**

Advertisement is considered to be very much essential for the particular promotion of the name of the brand and AI can also be very well developing and also promoting various online advertisements. It can even be enhancing the material of advertisement depending upon the passions, likes, dislikes and even the choices of the users. Platforms of Google Ad is known to be already utilising the technology of AI and also machine learning for directly targeting the market that has been targeted. In Shahid and Li, (2019), it is known that AI can be very well delivering various advertisements to a number of various individuals depending on their history of search, earlier acquisition, interests and also demographics. AI can be displaying the advertisements that will be the best to the appropriate audience at the correct time. It will be offering a much-enhanced ROI to a number of different advertisers. Anticipating marketing is forecasting success in advertising and AI can be assisting various experts of marketing in the prediction of the future enterprise in a proper way. Analytics that is predictive is known to be referring to the utilisation of information mining, artificial intelligence and also machine learning for analysing all of the various data that are historical for forecasting the patterns of the nearer future.

Whenever any user is found to be browsing on the website each and every time, AI can be gathering various details that will be directly related to the various online habits of the users and can also be assessing that specific data (Gkikas & Theodoridis, 2019). This kind of information can be exposing a huge deal of information like obtaining frequency and even choices of brand name of the particular individual. AI can be comprehending various requirements and also preferences of any specific consumer with the particular information it has recently examined. By properly segmenting the whole audience, AI can be aiding the particular business towards understanding what is wanted by the customers. It will be helping a lot in predicting the obtaining habits of the consumer that is targeted. Analytics that is predictive will be helping several firms for handling their plan of prediction and also is greatly based on the forecast of demand as well as supply. Paschen, Wilso and Ferreira (2020) stated

that targeting the appropriate audience is very much essential within any service provided by the internet. Analytics of google that has been powered by AI can be sectioning the whole audience relying on the particular area, demographics involving age, education and even occupation, income and so on and also psychographics as well involving the interest rate, attitudes and also preferences. It is known to be directly assisting in opting which kind of target market will be the best for any service or rather product (Mogaji, Soetan & Kieu, 2020). AI is capable of evaluating a huge number of products of data line on one individual specific profile which will be helping various experts of digital marketing to properly market various products to a number of various segments of the client in an efficient manner.

## **2.8 Facebook using AI and what it means for various marketers**

The various image recognition abilities that have been powered by AI and also machine learning has hugely enhanced largely in some of the current years (Van Esch, Black & Ferolie, 2019). Currently, the platform is known to be auto-classifying what will be happening within the images without any kinds of human tags, directly allowing a number of various users for searching several photos utilising several keywords even if the various images have been unannotated. As viewed by Ahuja and Alavi (2018), Facebook has been found to be utilising AI for delivering the appropriate content to various users across photos, videos and also text for influencing the way its product of advertisement will be working. This is known to be possessing various implications which will be hugely significant for the different kinds of marketers trying towards reaching about 2 billion users of Facebook (Overgoor et al., 2019). Current developments are known to be directly allowing the various machine learning algorithms for automatically annotating several photos along with the text, such that they are greatly accessible for blinding several users and even searchable very much easier by all.

The artificial intelligence which Facebook is using is something through which everyone can benefit from the use of this advertising platform. From the viewpoint of advertisers, there is a target audience for which the options are narrowed down so that it can able to reduce the ineffectual placements (Zsarnoczky, 2017). The major advantage in paying for advertisements on Facebook is that there can be an email list or a custom audience or building a lookalike. Facebook help in deciding the advertisements which will be done at auction (Kazak, Chetyrbok & Oleinikov, 2020). The advertisements will be done based on targeting settings that suggest that it can be a good fit and will go against the position.

There is some artificial intelligence provider that uses machine learning through which they can able to target the audience in real-time. With the help of artificial intelligence, there has been a real shift in the market and there are adjustments with the consistent conversion rate (Tsaih & Hsu, 2018). Artificial intelligence will work as per the optimum performance that is set as per the bidding parameters and the competitors will be in a good position so that they can able to win auctions. It can manage the budget on a much broader level and the advertisement will perform well as the technology of budget will be sent before (Yang, Henthorne & George, 2020).

## **2.9 Role of AI in the tourism industry**

The specific capacity for AI towards performing various tasks that have traditionally needed the human cognitive function has made it hugely useful for all of those within the particular industry of travel, just because the deployment of AI can be really saving both times and also money for businesses, while eliminating any kind of error caused by human and also directly allowing several kinds of tasks to be quickly performed, at any specific time of the whole day. Most of the various hotels have been found to be relying heavily on the delivery of excellent service provided to the consumer for building their respective reputation and the technology of AI can be assisting with this in a much broader variety of different kinds of ways (Tsaih & Hsu, 2018).

While the utilisation of AI to power online service to the customer is currently relatively a place that is very much common, one of the trends that have been mostly emerging is for the specific technology to be utilised for the interactions of customer service done face to face. Importantly, this has the capability of cutting queues at the desks of reception and also enhance the efficiency. In understanding the role of artificial intelligence in the tourism industry, it can be understood from two perspectives, one is tourism enterprise and tourists (Lv, Shi & Gursoy, 2021). From the enterprise perspective, there is a supply-side in which there is a growth stage which is from weak to strong, and there is the impact upon employment and it is increasing in a bigger way (Tussyadiah, 2020). From the tourist's perspective, artificial intelligence has a bigger impact on consumers and their experiences. There is a change in the context of business and artificial intelligence has a much greater impact on consumer experience. Artificial intelligence will help in providing consumers with personalised services that will help in meeting their basic needs (Zhang & Sun, 2019). The artificial intelligence application will effectively help in promoting consumer interaction and further improve consumer satisfaction.

Finally, it is to be understood that all of the different AI applications within the industry of tourism are not at all limited to the service provided to customers alone. One of the uses that are considered to be most effective is for the collection and also the interpretation of data for drawing several conclusions regarding the customers, practices of business and also different strategies of pricing. Zsarnoczky, (2017) said that the main advantage of AI within this specific field is its capability towards sorting with the help of larger amounts of data in an accurate manner, where the equivalent for several humans will be taking a significantly greater amount of time and even potentially comprise of greater errors.

## **2.10 Summary**

As very much evident from the above discussion as well as a review of the literature which have been existing, the scholarly evidence as well as various literary works emphasises intensively within the domain of impact of AI on advertising, AI on Facebook and also the contribution of AI within the tourism industry. The literature has been known to be focusing on the contribution of AI within various areas in the field of marketing and advertising.

## **2.11 Overview of the chapter**

A huge number of different resources have been found to be obtained related to the topic area which has helped a lot in gaining a lot of detailed information regarding the topic area and also for making the research very much resourceful. Several authentic sources have been taken into the taken for making the review a proper one comprising of genuine sources only. There can be positive and negative effects related to digital and social media marketing. From different studies, it can be found there is a positive effect in social media marketing based on consumer retention and purchase retention. In the research that is undertaken, there is the multidimensional approach for brand equity in which there is an effect upon social media communications. The results do have a positive effect upon the intensity of the social media which is used upon brand awareness and the intention to engage with WOM communication.

The studies can be found that social media has a significant influence on sustainability, effectiveness, and loyalty. Artificial intelligence does have a main role in promoting the products that will help both the consumers and sellers, as the consumer can able to gain information from them and another way the tourism services can able to promote their organisations. Various changes can come from artificial intelligence that is done through carrying the attributes and can have several platforms through which the strategy can be implemented. As the policies related to tourism are sustainable, most of the information is

provided with this research. With the help of social media, both artificial intelligence and machine learning have found several ways in regulating the content and the organisation can able to place their content in front of the users. The majority of industries think that artificial intelligence is the future for marketing as there are programs that help in establishing a direct link with consumers. With the help of artificial intelligence, it can help in display the advertisement at the time which has been set for purpose of display. Furthermore, it helps in understanding the perspective of consumers, based on which the advertisements are displayed.

## **2.12 Literature Gap**

Although the studies are conducted, there has to be more research that is needed related to the consumer's perception. As it is mentioned that the majority of studies are done focusing upon the textual format and based on ratings and reviews that are posted by the reviewers (Samara, Magnisalis & Peristeras, 2020). As per the research is done, it is important for consumers in paying more attention to the credibility of the message rather than the sources, in which there are high involvement decisions. Moreover, the research for instance is not considered medium, as the review which is published will affect the trustworthiness. There is medium credibility which is focused upon the perceived credibility of the channel in which the content is provided. Consumers can have different perceptions of the ratings and reviews of credibility that is published based on the channel (Astuti & Darma, 2019). The consumers do pay attention to reviews and ratings which are published on several platforms and the reviewer is on the social network that generally provides more information. Different variables can include both trust and reliability as the medium which will help as the reputation of the organisation. The majority of the study is done focusing on the members that have active participation in the online communities and there is a need for more demographic characteristics of consumer behaviour (Drexler & Lapré, 2019). The current study which is done is done using cross-sectional data and there has to be more focus on the theories that further help in explaining consumer behaviour. It is important in examining the interaction which can be seen between the reviewer's expertise and linguistic style based on the consumer responses. The majority portion of the study is done focusing on advertising and sales, and to get an understanding of several areas which have industrial marketing that is needed.

## **Chapter 3: Research Methodology**

### **3.1 Introduction**

This part of this paper will convey the details of the data collection process along with analysis of the data, through which the result can be expected at the end of this research. This part is the most important part of particular research, as the aim of the research that has been discussed earlier in this paper can be achieved after performing this part (Camilleri, 2018). It can be mentioned here in this context that the collection of relevant and useful information is the main purpose of this research. Through this, it is expected that the literature gap that has been discussed earlier in this paper can be overcome, and an efficient outcome can be accomplished at the end of this research paper. The sample size that has been selected in this research will also be discussed here, which will help to collect the data that will be analysed to reach put to the possible outcome (Camilleri, 2018). The ethics that will be followed during the time of collecting of the data and information from the sample size will be strict, as the people who are involved in the research of this part do not want to face any kind of issues that will hamper the quality as well as the flow of the research of this paper.

### **3.2 Research Question and Objectives**

It has been already discussed in this paper that the research questions that have been discussed in this paper have mainly focused on the usage of artificial intelligence and its impact on the user's data regarding Facebook business and targeted advertising in the region of the United States from the viewpoint of the tourism sector of this region (Yang, Henthorne & George, 2020). It can be reflected here in this context that the different effects that are possessed by artificial intelligence in the overall business of the social media platform of Facebook along with the marketing that is targeted by the stakeholders who are involved with the business operations of the tourism industry of the United States of America. The overall impact that is done through the usage of artificial intelligence has been taken into account in this paper, where the process of advertising has also been taken into account (Yang, Henthorne & George, 2020). The impact of artificial intelligence on the confidence of the users of this particular social media platform along with the responsibility of the management of Facebook that they need to perform to their users is also another important area that has been focused in the research questions that has been set and discussed earlier in this research study (Zsarnoczky, 2017). On the other hand, the main aim of this research paper is to identify the various effects that are left over by the usage of the social media platform Facebook. In other words, it can be reflected

here in this context that the aim of the study is to set out an effective as well as significant research on the overall effect of artificial intelligence on Facebook, which is one of the most popular social media platforms that are used by the people for various purposes across the globe. The sector that has been focused on in this paper is the tourism sector, where marketing, targeted marketing and business has been taken into account where the effect of artificial intelligence has been discussed (Xudoyarov, 2019).

**The research questions posed for this study are:**

- What are the various effects of AI in the business of Facebook and marketing that is targeted?
- How AI can be impacting the process of advertising of different businesses?
- How will be the utilisation of AI at Facebook will be impacting the confidence of user and the responsibility of Facebook to the various customer?

**The hypotheses proposed for this research study are the following:**

H0: There is no impact of AI and Facebook user data on tourism industry performance in US;

H1: There is a significant impact of AI and Facebook user data on tourism industry performance in US

### **3.3 Research Philosophy and Research Approach**

Research philosophy is the term that helps in providing a belief regarding the way through which the data and information associated with a particular research phenomenon can be gathered, analysed and used. In other words, it can be stated that the research philosophy is a process that is involved with the nature of the source of the data as well as improvement of the research related to the knowledge (Xudoyarov, 2019). The ontology research philosophy has been used in this research paper, through which all the nature of the data and information gathered, used and analysed has been discussed. The term ontology research philosophy is usually classified on the basis of subjectivism and objectivism. The attitude, as well as the temperament of the management of the business corporations that are using the concept of artificial intelligence, can be identified and measured through subjectivism.

On the other hand, many research approaches are used by the people associated with the researches. From them, the remedial approach has been selected to be used in this research paper. It can be noted here that this approach helps in the formulation of plans or actions for

the identified problems (Zsarnoczky, 2017). As this study focuses on the various effects that are left over by the usage of the social media platform of Facebook through the usage of artificial intelligence, it is expected that this approach possesses the ability to provide recommended steps against these effects. It can be reflected here that the data was analysed with a close reference to the research questions available and the objectives of the research available. These steps may help in improving the process of performing research on similar topics in near future. More efficient ways can also be used for this.

### **3.4 Research Design**

The author used the descriptive design to develop this research and this enhance the process for developing the various aspect of the project. The descriptive design approach helps to systematically and accurately describe a population, phenomena or situation, and also allows both quantitative and qualitative research methodology and also it allows to described the phenomenon or events that occurred during the project development.

### **3.5 Data Collection Method**

This part can be regarded as the most important part of a particular study within a research. It has been already discussed that the main aim of this research paper is to identify the various effects that are left over by the usage of the social media platform of Facebook (Prabha & Kabadi, 2016). To reach out to a possible outcome of this research, it is important to collect the data and information from the selected sample size of this particular research study. As there are many business organisations that operate in the tourism industry across the globe, only a few have been selected as the sample for this study, the details of which have been discussed later in the paper (Martini & Buda, 2019). The qualitative primary, as well as secondary research method, has been used in this research to collect the data for the process of analysis. It can be noted here that questionnaires have been used to gather the relevant data and information from the selected sample size (Prabha & Kabadi, 2016).

The questionnaires have been sent through personal email addresses. Apart from this, interviews have also been taken from the sample size, where a different set of questions is prepared and asked on the physical presence of both the selected sample size and the people involved in the research process (Martini & Buda, 2019). Face-to-face interviews always help to gather more relevant data and information through which the analysis of the gathered



information can be analysed in a more efficient way. For estimation of the particular rate of action that needs to be performed in this research, the particular model needs to consider the social media platform of Facebook, so that the impact of artificial intelligence can be identified in a better way (Li & Liu, 2021). As the set of questions is different from the interview and questionnaires, it can be said that more data and information has been collected for conducting the analysis process. Only the tourism industry of the United States has been taken into consideration. Different types of questions have been set in both the questionnaires and interview so that different types of data and information regarding the usage of artificial intelligence can be gathered and analysed (Abgaz et al., 2018).

### **3.6 Sampling**

It can be mentioned here in this context that a total of 10 organisations has been selected from the tourism industry that operates in the marketplace of the United States of America. There are many organisations that operate within the tourism industry of this region, but it is not possible to gather the relevant data and information from all of these companies (Li & Liu, 2021). As a result, only few business corporations have been selected from whom the relevant data and information has been gathered to analyse them and reach out to a possible outcome. The author identified the highest rated organisations and contacted them through email communication and conduct the survey for gathering information's.

It can also be mentioned in this context that the employees who are working as managers in different levels of these companies have been taken into account. It is expected that all the information regarding the usage of artificial intelligence in the business operations of these selected tourism companies can be received from the people who are sitting in different managerial posts in these organisations (Abgaz et al., 2018). The companies have been selected through a random sample technique, and all the selected the corporations that are both public and private. The managers from whom the data and information have been gathered are all experienced in nature, so it can be assumed that proper and efficient information has been gathered for this research study.

### **3.7 Participant Profile**

The research will be conducted among nine research participants from various tourism companies. The people from the tourism industry are all either the Human Resource or the Chief Tour Operators and Managers. The profile was specially selected to have those people who have some knowledge about the subject. The people were also narrowed by selecting on

them among the companies who have either already applied some technological add-ons to the regular procedure or has been planning to do the same. The user profile was taken among a large age range and the findings were tabulated in a notes table. The participant profile is:

***Table 1. Participant profile***

No.	Name	Job title	Age	Years of experience in HR/L&TD	Public/Private sector	Company type / industry	Company size
Company 1	Mark	Head of the company	40-45	20 years	public	Tourism	20-25 employees
Company 2	Anna	HRBP	28-32	6 years	private	Tourism	200 (USA) 2,000 (world)
Company 3	Katie	Tour manager	40-45	19 years	private	Tourism	400-450
Company 4	Kevin	Tour manager	33-36	13 years	private	Tourism	700 (USA) >120,000 (world)
Company 5	Paul	Head of Engagement	35-40	4 years' in L&TD (16 years overall)	private	Tourism	1,400
Company 6	Caroline	Tour manager	38-42	16 years	public	Tourism	90-110
Company 7	Rachel	Tour manager	38-42	15 years	private	Tourism	500 (USA) 25,000 (world)

Company 8	Mary	Head of HR	35-40	15 years	private	Tourism	190 business staff, 1,000 in total, including contractors
Company 9	Ciara	Tour manager	35-40	20 years	private	Tourism	200 business staff, 600 in total, including contractors

### 3.8 Data Analysis

The interviews were taken in the format of questionnaires sent via Google docs and then analysed. The analytical code was created and then analysed by identifying and establishing the relationship among the variables. The interviews were also taken over the telephone for some participants. The interviews were primarily organised in a tabular format as shorthand notes from which a further and elaborate table was created. This helped in rectifying all potential errors. After the initial assimilation of data, the same was compared and contrasted to identify potential relationships among the various variables which were explored and identified. This was a very important process because it helped in classifying the assimilated responses into specific groups (Elliott, 2018). The classified responses then were compiled in separate headings which helped and facilitated the survey task. The data were analysed with a close reference to the research questions available and the objectives of the research available. Certain incorporation of the logics and the analytics were gathered for the perfect presentation of the particular paradigm (Kamilaris, Kartakoullis & Prenafeta-Boldú, 2017). For this study, thematic analysis was done which will be done by interview data analysis and secondary data analysis. Different literature was compared and contrasted with the gathered result to make them authentic.

The discoveries from the information were ordered by research targets, then, at that point, different subjects that showed up during the discussions were relegated to them. Table 2 shows an example of the information investigation. The coding was made dependent on citations,

then, at that point dependent on those different subjects were distinguished (Elliott, 2018). Each topic was doled out to one of the four exploration destinations appropriately. For each subject, I depicted the interviewees' perspectives and cited a portion of their expressions and thoughts. I recognised similitudes and contrasts about the members' conclusions on different points identified with the application and use of man-made reasoning in the travel industry area. The target market was the tourism industry and the centre of the market was Facebook (Kamilaris, Kartakoullis & Prenafeta-Boldú, 2017). The results were very insightful and futuristic. The most significant results were put in the 'findings' section that directly answers Research Question and presents a framework that I created.

*Table 2. A sample of data analysis*

Examples of interview quotations	Coding	Theme	Research Question
<p><b>Caroline:</b> - "I think that AI can help the tourism companies to know about the data of the Users over Facebook. This shall help the companies to create a subsidiary and personalised tourism plan"</p>	<p>Feels that AI shall elevate the condition of trade</p>	<p>Information and technological advancement</p>	<p><b>RQ no. 1</b> To describe how AI improves the competition and adaptability of the tourism industry? Is there any ethical dilemma?</p>
<p><b>Mark:</b> "when AI is utilised in every sector today, why should the tourism sector leave behind? AI can give data about the geographical and environmental conditions of the country. The advertisement and marketing of the services can also be done with good return"</p>			
<p><b>Anna:</b> "there can be some ethical problems and data breach incidents as well"</p>			

<p><b>Katie:</b> - “inclusion of every new thing requires some risks and there are chances of failure. However, I feel that the tourism industry can gain from AI implementation and if Facebook is the spearhead then many personalised projects can be executed.”</p>	<p>There are risks but new technology must be utilised</p>	<p>Fear of Data breach</p>	
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### 3.9 Ethical Issues

Ethical consideration poses the core role for the promotions of the aims of the particular research with the proper explanation. It generates value for collaborative work with the utmost respect and involvement by confining fairness. The ethical considerations pose a great role for quality management within this research. The information is protected under the Data Protection Act of 1998 (Williams & Anderson, 2018). The issue of plagiarism is completely removed. The inclusion survey along with the consent form will be considered compulsory. Only its usage will be conferring in terms of academic reasons.

The discoveries from the information were arranged by research destinations, then, at that point, different topics that showed up during the discussions were doled out to them. Table 2 shows an example of the information investigation. The coding was made dependent on citations, then, at that point dependent on those different subjects were distinguished (Gan, Chua & Wong, 2018). Each subject was allotted to one of the four exploration targets as needs are. For each topic, I depicted the interviewees' perspectives and cited a portion of their shrewdest expressions. I recognised likenesses and contrasts about the members' suppositions on different themes identified with the application and usage of computerised reasoning in the travel industry area (Gan, Chua & Wong, 2018).

### 3.10 Limitations

There are several things that have been gathered and analysed in this research paper. But, during the time of gathering the data and information and analysing them, the people who are involved with the research of this study has faced limitations, which has ultimately hampered the quality of the research (Theofanidis & Fountouki, 2018). It can be said in this context that the main limitation that has been faced by the people associated with this research

is the time that has been allotted to them to conduct the research (Chambers, 2018). As the selected 10 business enterprises are located in different places, the people who are associated with the research of this paper has faced difficulties to present physically and gather the relevant data and information. It can be reflected in this context that is important to possess a quality amount of time to conduct research on a particular topic, which will ultimately help to reach out a possible outcome (Theofanidis & Fountouki, 2018). Different literature has been compared here as well as contrasted with the gathered result to make this research study an authentic one. It can also be mentioned here that the data and information that has been gathered for this study has been influenced by the managers who have provided the data and information, as they have discussed the same from their viewpoints. This is also another limitation, which needs to be avoided in future similar research works (Arifin, 2018).

### **3.11 Summary**

All the discussion that has been made in this chapter has helped to understand the details of the process of gathering the data that need to be analysed to accomplish the desired outcome. It can also be discussed in this context that the details of the data collection method along with the data analysis process that has helped to reach out to the possible outcome at the end of the paper. The ethical process that has been maintained throughout the research methodology process has also been evaluated in this paper. The details of the sample size have helped to know about the people who have been selected as the sample size of this research. This has also helped to note down all the details of the people who have taken an active part in providing the data and information of the people. The data were analysed with a close reference to the research questions available and the objectives of the research available. Though there are limitations that have been faced by the people, still a smooth flow has been maintained by the people who have been involved in this research of this paper. It is expected that any kind of further researches on the same topic can be performed in a better way after learning from the mistakes of this particular research.

## **Chapter 4: Data Analysis**

### **4.1: Introduction**

In this section data analysis and findings are highlighted. This chapter is very crucial for the study because it provides a significant result based on the statistical analysis to accomplish the objectives of the study. As stated earlier (methodology chapter) total of 111 respondents was selected for the evaluation of the study. The samples were collected from ten tourism organisations. In this chapter, the opinion of employees concerning the impact of AI on the users' data regarding Facebook business and targeted advertising in the United States in the tourism industry is highlighted. Quantitative analysis has been done to find out the significant results. In this study, the bar chart mainly shows the distribution of the respondents according to the factors. Correlation has been done to find out the relations among the variables. Regression has been done to find out the impact of AI-driven marketing techniques on managing advertisements efficiently. The author has analysed the data properly and logically to accomplish the objectives of the study. The chapter have also shed the light on the important and crucial findings to reach out to the possible outcomes of this study.

### **4.2: Data Analysis**

In the present study, quantitative data analysis has been done. The researcher collected the data using a structured questionnaire through an online-based survey method. Although, the study uses collects data using a simple random sampling technique to reduce the biases. In this study, two sections have been used and the first one collects demographic profiles and the remaining part is mainly concerned with the AI-related questions to find out the role of AI in Facebook advertisement management. The section mainly involved the perception-based questions which were measured using 5 points Likert scale. The response of the respondents was scattered and diverse due to random sampling. So, proper frequency measurement is necessary and used in this study. The response chart is the main basis of the data analysis. However, correlation and regression analysis has been done to find out the relationship between independent and dependent variables. Based on the responses below-mentioned graphs have been prepared by the researcher.

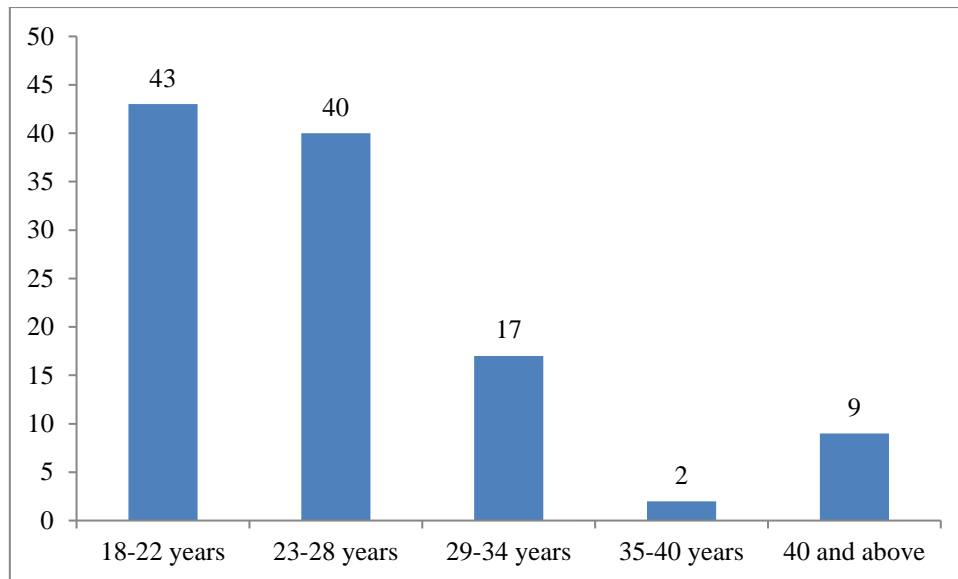
#### **4.2.1: Respondent analysis**

##### **Q1) Distribution of Age-group**

After gaining information about the gender distribution of the respondents, it was crucial to know the distribution of the age group. All the respondents filled the age group column. The graph shows that there is a difference in perception according to the age group. Of the 111 respondents, there are 43 respondents were from the 18-22 years' age group, 40 respondents from the 23-28 years' age group, 17 respondents from the 29-34 years' age group, 2 respondents from 35-40 years' age group, and remaining 9 respondents were belonged from the 40 and above age group. The chart also shows that there is a high number of young aged respondents and it is highly appreciable to the author. The young age peoples especially 18-22 years' age group are tech-savvy and this technology-related survey will be fruitful highlights their perceptions about the use of AI on Facebook to manage and control the advertisement and improve business performance. The age group between 23-28 years were also technical minded but advanced like the previous group. The respondent data highlights that this group is the second largest group that consists of 40 respondents. The following age group is 29-34 years.

The group is also quite fascinated about the technology and the speciality of this group is they love to travel much as expected. 17 participants from this were recognised. The following age group is 35-40 years' age group. The lowest number of respondents was observed in this group and it is only 2. As stated earlier, the researcher uses random sampling and sends the structured questionnaire randomly through email. However, opinion from this group is also important even though the number of the respondent is smaller. After this, the following is age group is 40 and above years' age group category. From this category 9 respondent were observed. This is a great opportunity for the researcher to study the perception of AI-based technology from a broad age category. It is also quite interesting that most of the young respondents were present in the sample. However, it is also noticeable that the no of respondents from different age groups is quite dissimilar but the lower no of respondents from the old age group will be helpful to create a similar opinion.





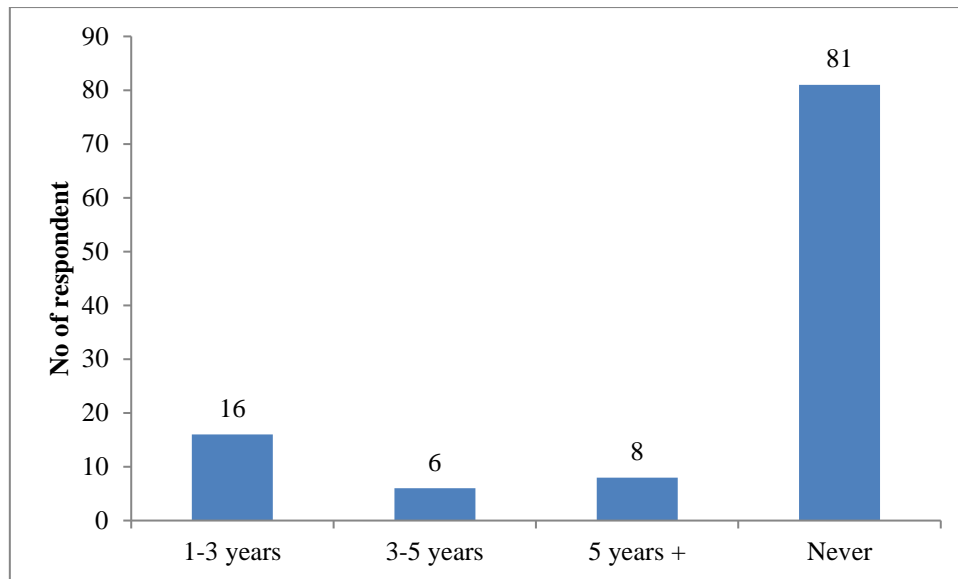
**Figure 2: Age group distribution**

**(Source- Author)**

**Q2) How long have you been a part of the tourism industry?**

After realising the age group of the respondents, the researcher put the question of how long the respondent had been a part of the tourism industry. In this case, four classes were created to collect the data and those are: Never, 1-3 years, 3-5 years, and more than 5 years. The bar chart shows that there were 16 from the 1-3 years' experience of the tourism industry, 6 respondents were from the 3-5 years' experience group, 8 respondents has the more than 5 years' experience group, and the remaining 81 respondents is not part of the tourism industry.

Nowadays the improvement of technology changed the pattern of the tourism industry. In this case, AI plays a crucial role to improve the technology in the tourism industry. It is important to that the how long the respondents are associate with the travel industry. Among 111 respondents, most of the respondents (81) respondents were never part of the tourism industry. This information is crucial and this will guide the researcher to understand the perception of the respondents of AI use on the advertisement. It is also noticeable that if the respondent is not the part of tourism industry then they can't provide an opinion concerning the impact of AI on the tourism industry.

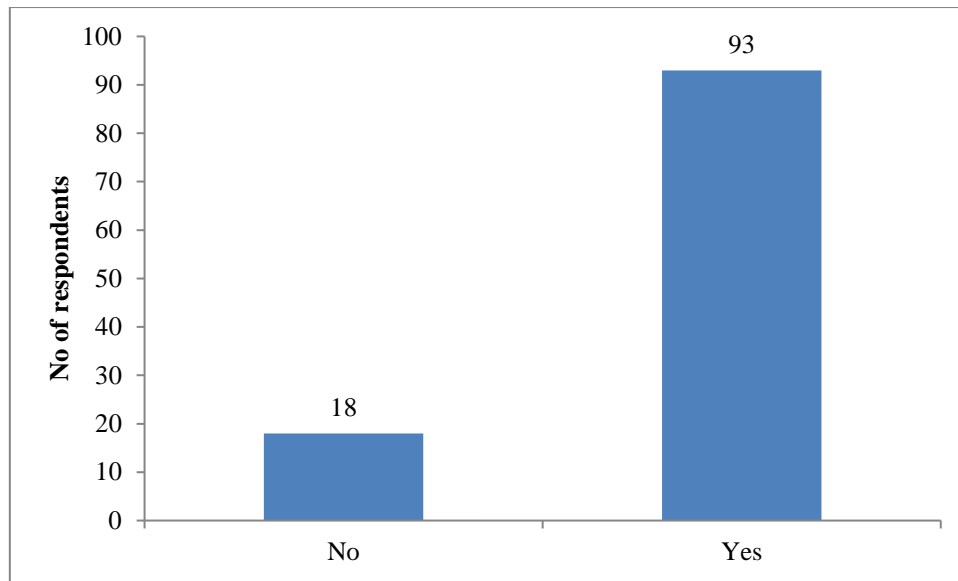


**Figure 3: No of year's part of the tourism industry**

**(Source- Author)**

**Q3) Are you aware of the use of artificial intelligence (AI) in social media advertising, particularly on Facebook?**

The study is about the use of AI in social media advertising in the tourism industry, especially on Facebook. So, the researcher provides great attention towards the perception of the employees regarding the use of AI in social media particularly on Facebook. In this question, the respondents are provided two options (Yes and No) to express their opinion. The below chart was prepared based on the collected responses. The chart shows that among 111 respondents, only 18 people said that they are not aware of the use of AI on social media advertisements, particularly on Facebook. In this case, most of the respondents may belong to the old age category respondents who have participated in this study. It is also observed that the remaining 93 participants are aware of the use of AI on social media advertisements. This information is critical because it will help to understand the opinion of maximum responses that are aware of the use of AI on social media marketing.

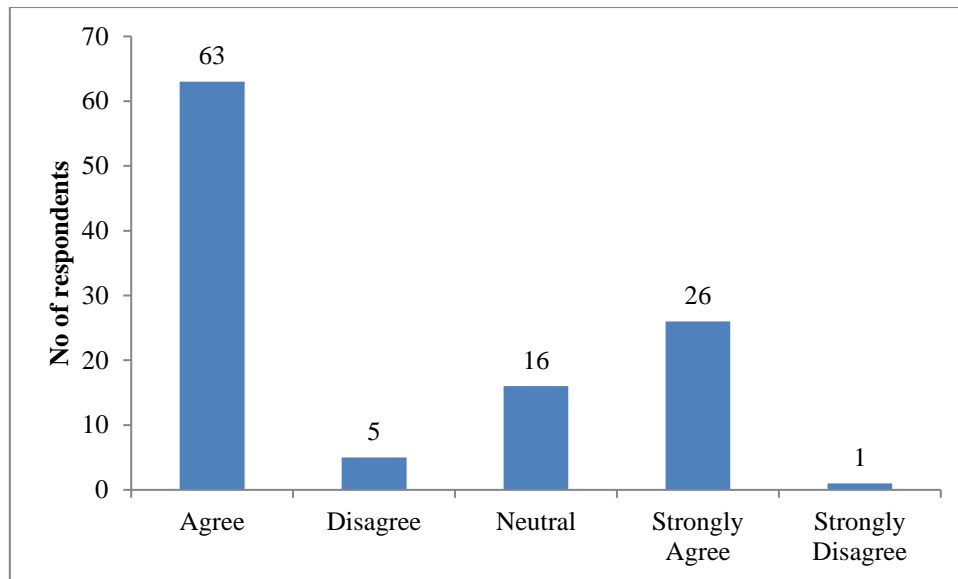


**Figure 4: aware of the use of artificial intelligence (AI) in social media advertising**

**(Source: Author)**

#### **Q4) AI is used in Facebook ads to create strong lead profiles**

In the questionnaire, the next question for the participants was based on their perception regarding the AI use in Facebook ads and its influence on creating lead profiles. The participants were asked whether they perceive that the application of AI in Facebook ads would help to create a strong lead social profile. To collect the response five main options were given to choose their opinion. The options were: strongly agree (SA), strongly disagree (SD), agree (A), disagree (DA), and neutral (N). It was expected that the respondents will only provide information about AI-based Facebook ads. The respondents provide their opinion in this manner. In this study, it is observed that 63 respondents were belonged to the agree on group among 111 respondents. The respondents believe that AI is used in Facebook ads to create a strong lead profile. 26 people strongly agreed with the question and percept that AI is applied to create a strong lead social profile of the organisation. On the other hand, 5 people from disagree and 1 person from the strongly disagree group indicates that AI is not used in the face ads to create a strong profile lead. It was interesting to see that 16 people out of the sample 111 have expressed that they have no idea concerning this and would prefer to remain neutral. However, most of the people's opinion towards agrees supports that AI is used in the Facebook ad to create strong profile lead.

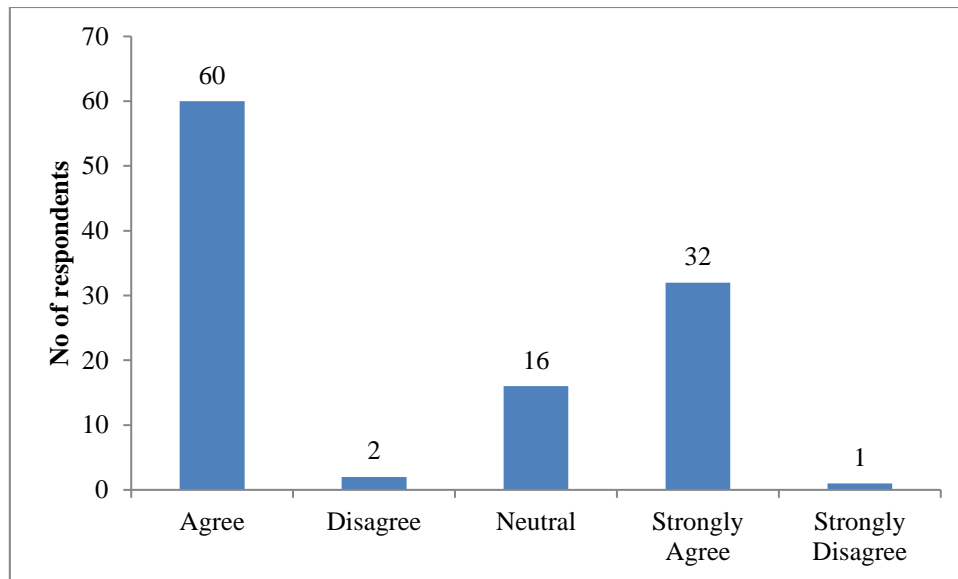


**Figure 5: use of AI in Facebook ads to create strong lead profiles**

**(Source- Author)**

**Q 5) AI is used in Facebook ads to make efficient audience segmentation and/ or targeting**

The next question is related to targeting or efficient audience segmentation. The question asked to the respondent was whether they believe that AI is used in Facebook ads to make efficient audience segmentation. Among 111 respondents, 60 respondents are agreeing to consider that AI helps to efficient audience segmentation. 32 respondents are strongly agreeing to consider the above statement among all participants. However, 3 respondents are denied to consider that AI can help the managers in target segmentation. It is also noticeable that 16 people remained neutral.

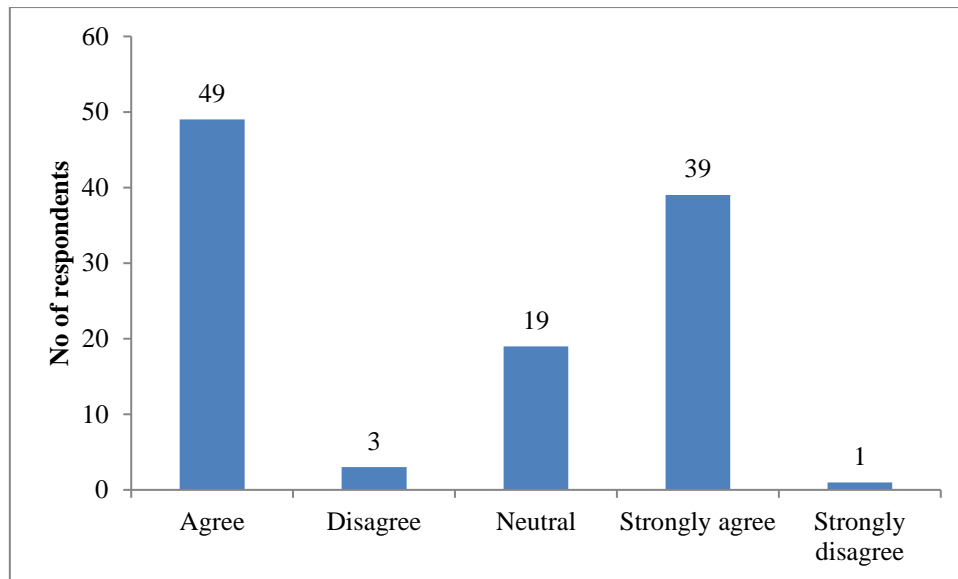


**Figure 6: Use of AI in Facebook ads to make efficient audience segmentation**

(Source- Author)

**Q6) AI is used in Facebook ads to make precise forecasts about online consumers' purchase intention**

The next question in the questionnaire was associated with the forecasting of consumer's purchase intention. The question asked to the respondents was that whether they believe that AI is used in Facebook ads to make precise forecasts about online consumer's purchase intention. The result indicates that there are more than 79 % of respondents are agree to consider the role of AI in the application of Facebook ads to make precise forecasts about online consumers' purchase intention. However, 19 people remained neutral and 4 people have disagreed with the above statement.

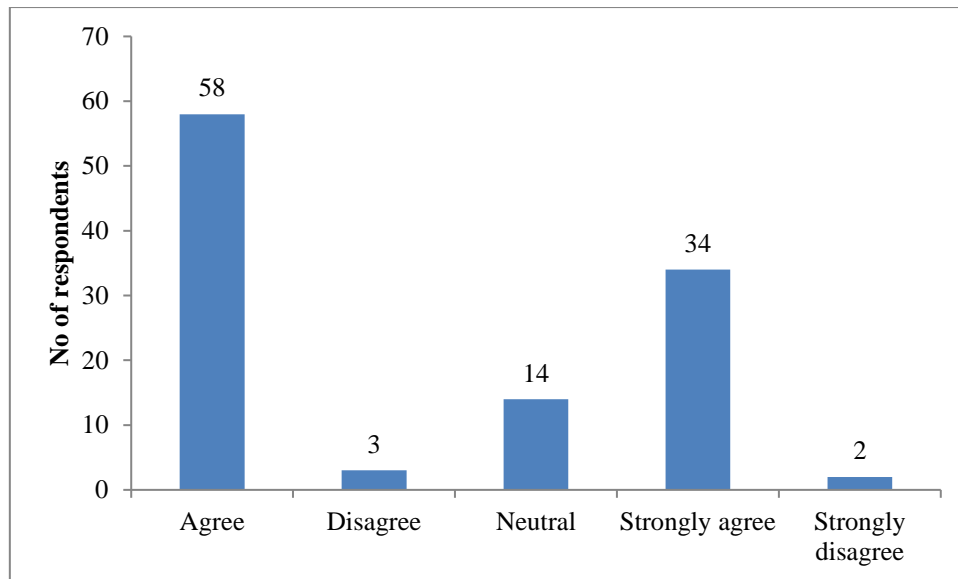


**Figure 7: Use of AI in Facebook ads to make precise forecasts**

**(Source – Author)**

**Q 7) AI is used in Facebook ads to analyse and reveal online consumer attitudes and preferences**

The next question in the questionnaire was associated with the consumer attitude and preferences data. The question to the respondent was whether they believe that AI is used in Facebook ads to analyse and reveal online consumer attitudes and preferences. The respondents fully respond to this question. Among 111 participants, 34 respondents have belonged to the strongly agree group, 58 were from the agree, 14 were neutral, 3 people were from the disagree group, and only 2 respondents have belonged to the strongly disagree category. The result indicates that more than 80 % of respondents believe that AI used in Facebook helps managers to analyse and reveal online consumer attitudes and preferences precisely (Lv et al., 2021).

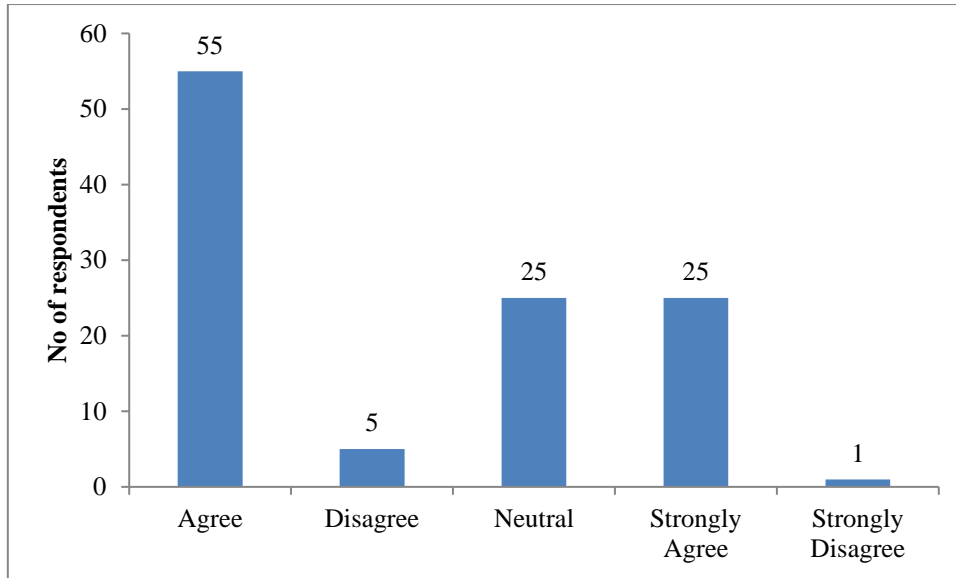


**Figure 8: Use of AI in Facebook ads to analyse and reveal online consumer attitudes and preferences**

**(Source- Author)**

**Q 8) AI is used to tailor ad texts and images based on consumers' demographics, psychographics, and/or online behaviour**

In this section, the researcher asked the questions to respondents was whether they believe that AI is used to tailor ad texts and images based on consumers' demographics, psychographics, and online behaviour. The responses are highlighted in the below bar chart. The chart highlights that out of 111 respondents, 55 respondents agreed to consider the above statement. Another 25 employees were also highly considered that AI is used in Facebook ads have a significant influence on identifying and analysing consumer demographics, psychographics, and online behaviour. Interestingly, 19 participants prefer to stay neutral in this regard. However, only 6 people denied accepting the above statement.

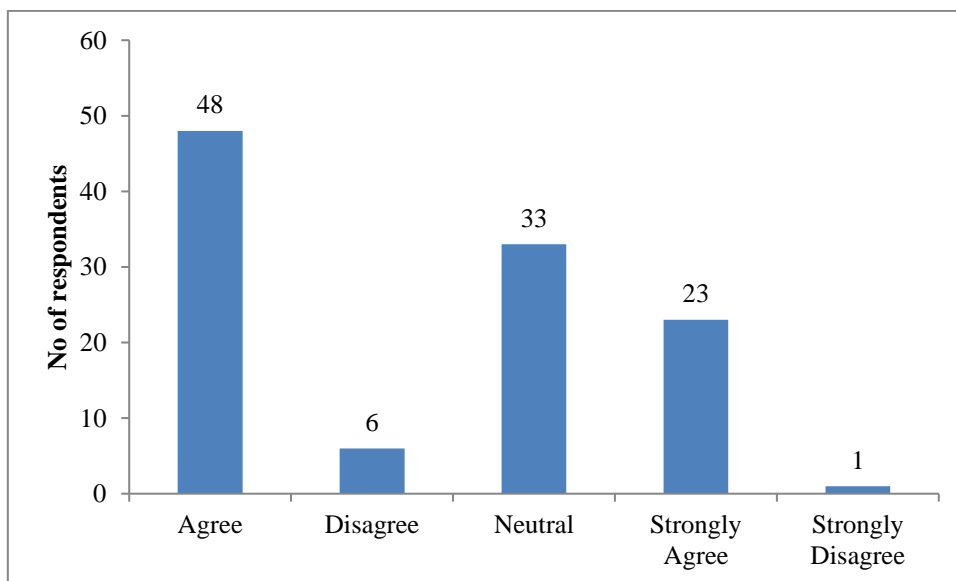


**Figure 9: AI is used to tailor ad texts and images**

**(Source- Author)**

**Q 9) AI is used as a content management platform to select the best creative assets online**

The main motto of this question was to know that whether the employees believe that AI is used as a content management platform to select the best creative assets online. The result highlights that more than 60% of employees are agreeing that AI is used as a content management platform to select the best creative assets online. However, 33 respondents have remained neutral and 7 people denied considering the above statement.



**Figure 10: AI is used as a content management platform**

**(Source- Author)**



### Q 10) AI is used to create tags for creative elements

The next question in the questionnaire was associated with the tags for creative elements. The researcher was asked the participants whether they believe that AI is used in the Facebook ad to create tags for creative elements. The participant's responses are highlighted in the below chart. The chart indicates that 68 people were agreeing that AI is used to create tags for creative elements. However, 37 respondents remained neutral in this regard.

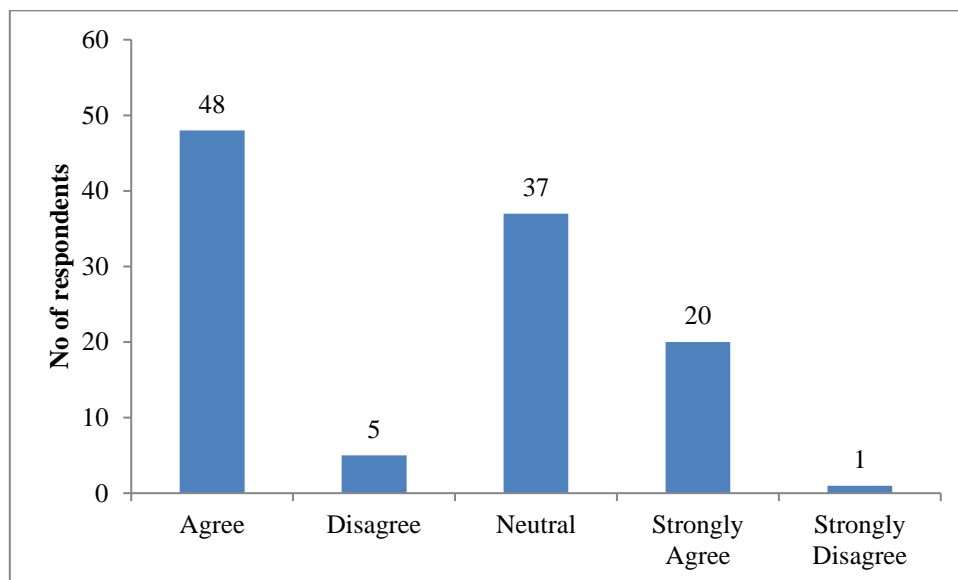
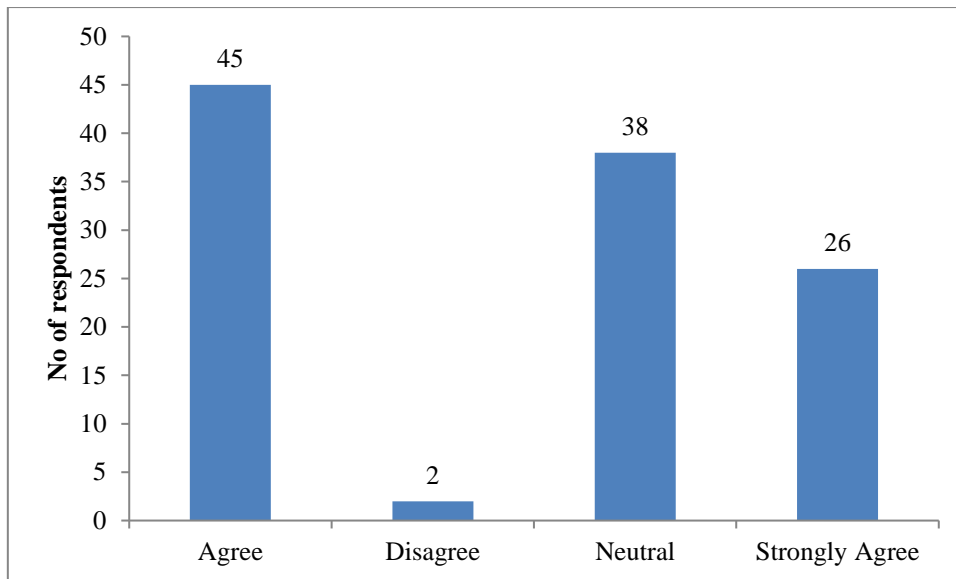


Figure 11: AI is used to create tags for creative elements

(Source- Author)

### Q 11) AI is used as Programmatic Advertising Creation (PAC) to fine-tune the ad content quality on the fly

The specific question is chosen by the researcher to identify the use of AI as Programmatic Advertising Creation (PAC) to fine-tune the ad content quality on the fly. The graph shows that 71 people out of 111 respondents are agreeing that AI significantly helps in the improvement of ad content quality. Negligible respondents are denied this consent. However, 38 participants remained neutral in this consent. Based on the majority, the study indicates that AI has a significant role in enhancing the quality of the ad content (Hwang and Lee, 2019).

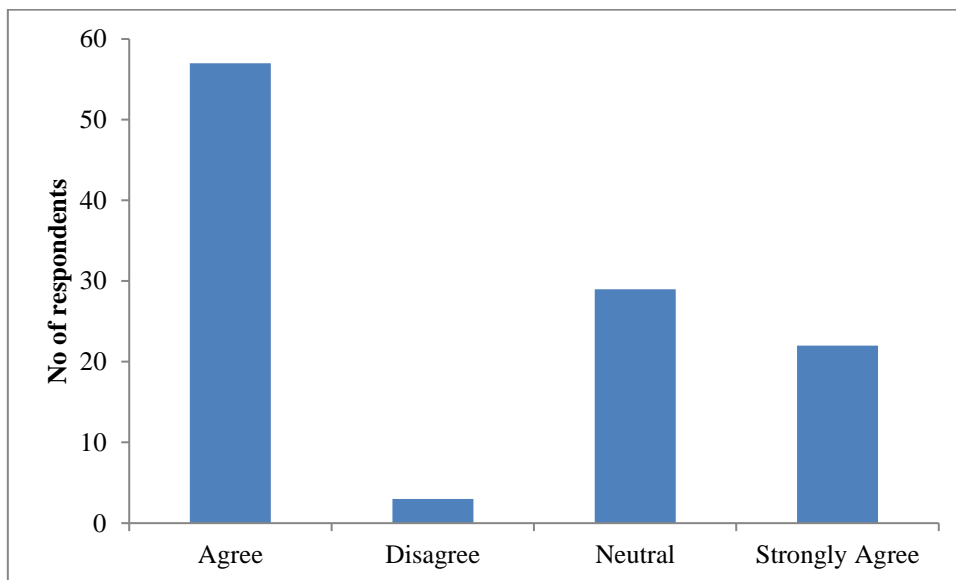


**Figure 12: AI is used as Programmatic Advertising Creation**

(Source- Author)

**Q 12) Facebook Ads Manager and/or Google Ads are used to execute media planning**

This specific question was asked to the participants to know about the Facebook ads manager or Google ads manager are used to execute media planning. The responses are highlighted in the below chart. The chart depicts that there are most of the people ageing about the role of AI in executing media planning.

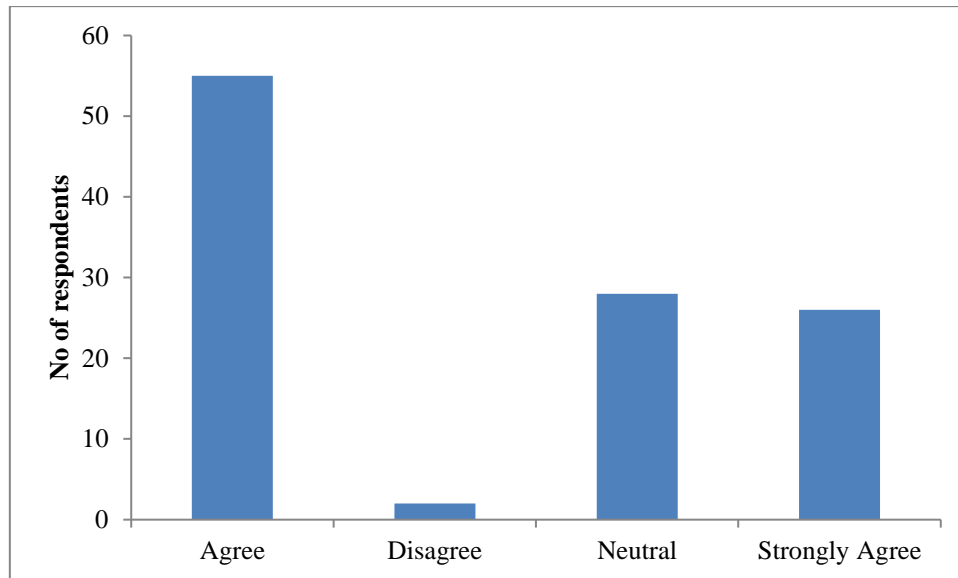


**Figure 13: Influence of AI in Media planning**

(Source- Author)

**Q 13) Agencies utilise AI in the automated dynamic media planning and buying phase**

This specific question was queried by the researcher to know whether the agencies use AI in automated dynamic media planning and buying purchase. The bar chart shows that majority of the respondents are ageing that agencies are mainly using AI for automated dynamic media planning and buying phase analysis.

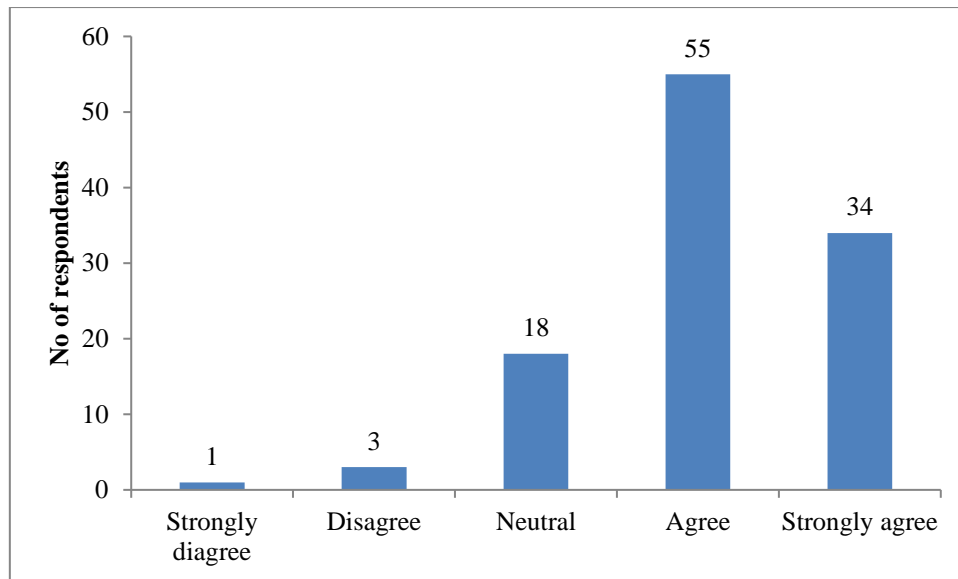


**Figure 14: Agencies prefer AI for automatic media planning**

**(Source- Author)**

**Q 14) Do you believe that AI helps to improve business performance**

This specific question was asked to the participant to know about the role of AI in enhancing the business performance of the tourism industry. The below bar chart shows that 89 people out of 111 respondents believe were that AI has a significant role in improving business performance. However, 19 respondents were neutral in this consent and a negligible (only 4 people) number of participants denied the above statement.



**Figure 15: AI helps to improve business performance**

**(Source- Author)**

#### **4.2.2: Correlation analysis**

In this study, correlation analysis has been done to find out the relationship among the variables associated with the use of AI in advertisement and management. The correlation value indicates that lead profile has a strong relation with audience segmentation ( $r=0.62$ ,  $p<0.01$ ), customer intention ( $r=0.43$ ,  $p<0.01$ ), consumer attitude and preference ( $r=0.46$ ,  $p<0.01$ ), business performance ( $r=0.60$ ,  $p<0.01$ ), awareness about AI use on Facebook advertisement ( $r=0.27$ ,  $p<0.01$ ). It is observed that knowledge of AI or awareness of AI has a significant correlation with audience segmentation ( $r=0.34$ ,  $p<0.01$ ), customer attitude and preference ( $r=0.24$ ,  $p<0.05$ ) and business performance ( $r=0.25$ ,  $p<0.01$ ). However, awareness of AI use on social media advertisement has no significant relation with customer intention ( $r=0.09$ ,  $p>0.05$ ). It is also noticeable that gender has no relation with any parameter except the level of awareness regarding the use of AI in social media advertisements. The study also highlights that audience segmentation has a significant relation with customer intention ( $r=0.50$ ,  $p<0.01$ ), customer attitude and preference ( $r=0.53$ ,  $p<0.01$ ), business performance ( $r=0.71$ ,  $p<0.01$ ). Customer attitude and preference has a significant relationship with business performance ( $r=0.69$ ,  $p<0.01$ ).

**Table 1: Correlation among the variables associated with the advertisement and business performance**

	Lead profile	Audience segmentation	Consumer intention	Consumer attitude and preference	Business performance	Awareness of AI use	
Lead profile	1						
Audience segmentation	.620**	1					
Consumer intention	.428**	.504**	1				
Consumer attitude and preference	.460**	.529**	.712**	1			
Business performance	.610**	.709**	.679**	.687**	1		
Awareness of AI use	.276**	.336**	.093	.243*	.246**	.297**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

### 4.2.3: Regression analysis

In this study, regression analysis has been done to find out AI-based ads on social media has any impact on tourism business performance. In this study, autocorrelation was checked using the Durbin-Watson test and the result (D-W = 1.6) shows that there is no autocorrelation between DV and IV (Daoud, 2017).

The coefficient table highlights that there is a strong relationship exists between IV and DV (R=0.83) (Kumari and Yadav, 2018). In this research work, the value of the coefficient of determination (R<sup>2</sup>) mainly shows that the tourism industry business performance can be explained up to 69% based on the independent variables (R<sup>2</sup>=0.69).

**Table 2: Model summary**

Model Summary					
Model	R	R <sup>2</sup>	Adj. R <sup>2</sup>	SE. E	D-W
1	.832 <sup>a</sup>	.691	.680	.4596	1.676

a. Predictors: (Constant), Consumer attitude and preference, Lead profile, Audience segmentation, Consumer intention

b. Dependent Variable: Business performance

c. SE. E= Standard Error of Estimates; D-W= Durbin Watson.

The ANOVA table shows that the model is significant because the value of F (F=59.37, p<0.01) is significant.

**Table 3: ANOVA Table**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.167	4	12.542	59.373	.000 <sup>b</sup>
	Residual	22.391	106	.211		
	Total	72.559	110			

a. Dependent Variable: Business performance

b. Predictors: (Constant), Consumer attitude and preference, Lead profile, Audience segmentation, Consumer intention

The coefficient table highlights that all the parameters are highly significant except the constant value. The model shows that 1 unit changes in the AI used to create strong social lead profiles can positively lead to 0.17 units of changes in the business performance. 1 unit change in the audience segmentation can improve 0.36 units of business performance. In the same way, one unit changes in forecasting about consumer's purchase intention can lead to 0.27 units of positive change in business performance. One unit change of consumer attitude can positively change up to 0.23 units. From the model, it is observed that AI used in the field of advertisement in social media especially on Facebook help the managers in managing the advertisement efficiently and improves the business performance of the tourism industry. The eq. is:

$$Y = -0.16 + 0.17 (\text{lead profile}) + 0.36 (\text{audience segmentation}) + 0.27 (\text{consumer intention}) + 0.23 (\text{customer attitude and preferences})$$

**Table 4: Coefficient table**

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	
	B	Std. Error				
1	(Constant)	-.163	.279	-.583	.561	
	Lead profile	.172	.069	.176	2.504	.014
	Audience segmentation	.363	.079	.341	4.592	.000
	Consumer intention	.272	.082	.261	3.316	.001
	Consumer attitude preference	.232	.078	.239	2.967	.004

a. Dependent Variable: Business performance

The model post check has been done with the help of a Histogram and P-P Plot. Both, the graph and chart show that the model residuals are normally distributed.

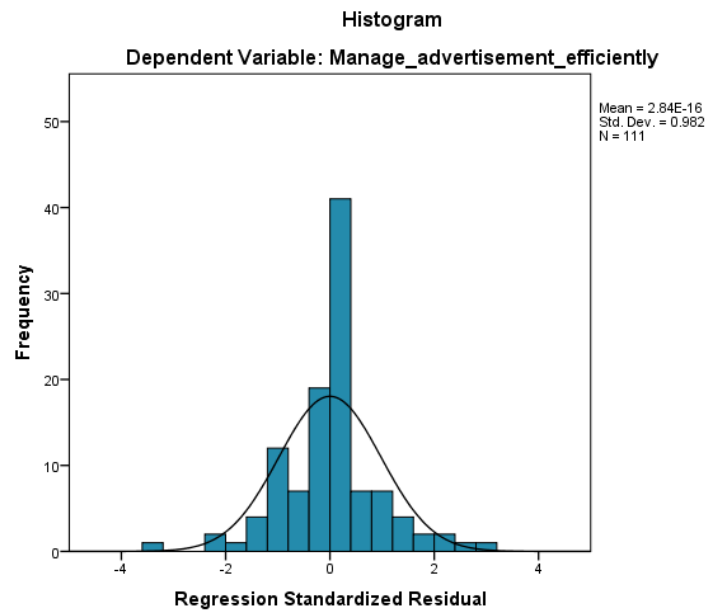


Figure 16: Histogram

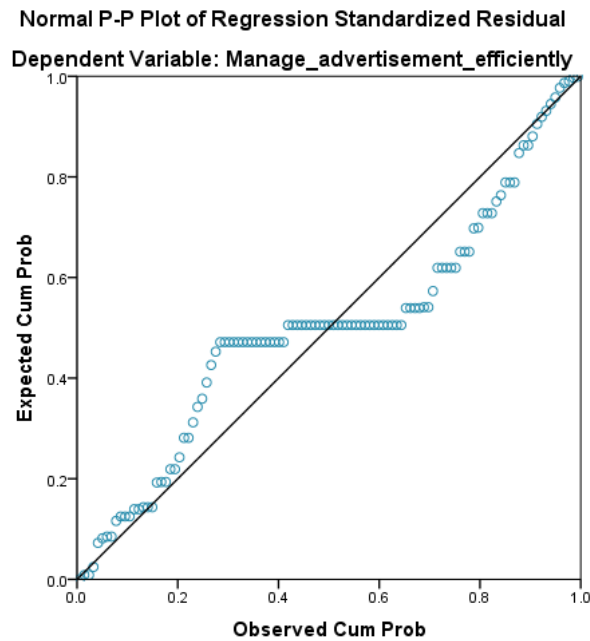


Figure 17: P-P Plot

### 4.3: Discussions

In this section, a brief discussion will be made. The discussions were made regarding the data analysis and significant findings in which a brief explanation will help to recognise the stunning perspectives of the study.

#### **4.3.1 Elaboration of AI in Facebook Ads**

Most of the employees are agreeing that AI has a significant influence on social media marketing. The result indicates that AI has an impact on managing Facebook ads to create a strong lead social profile to improvise business performance (Zarouali et al., 2018). The result also clarifies that AI helps managers to make a precise target of the audience segmentation in social media (Lewis and Moorkens, 2020). It helps to analyse and precise forecast of the online customers purchasing intention and preferences (ma and Sun, 2020). It also helps to analyse the demographic and psychological parameters of the customers to set the content of the advisement (Brandtzaeg and Følstad, 2018). For this reason, several managers prefer the use of AI as a content management platform. In this regard, AI-based chatbots assist the customer to engage their online buying processes with satisfactory pleasure (Van den Broeck, Zarouali & Poels, 2019). In this study, the regression analysis and correlation analysis indicates that AI-driven advertisement significantly helps the travelling organisation to improve their targeting advertisement and enhance the business performance.

#### **4.3.2 AI in Content Management**

The data analysis significantly represents that AI significantly influences content management procedures. Content management system becomes crucial in the present decades in the tourism industry due to the increasing influence of revenue (Smirnov et al., 2019). According to Zhang and Sun (2019) AI-based content management and assist in different managerial processes significantly helps to enhance the tourism industry. The study highlights that AI used in creating tags for creative elements, creative advertisement development, Facebook Ads managers are significantly helping to manage the advertisement efficiently.

#### **4.3.3 AI in Advertisement and Media Planning**

Nowadays the growing trend in the utilisation of AI-driven tools (like Chatbot, NLP, Machine Learning) is always ready to assist the passengers in various decisions such as travel package selection, attractions, tour guide, and hotel booking (Tussyadiah & Miller, 2019). The study highlights that the agencies are mainly using AI for automated dynamic media planning and buying analysis. However, there are more potential services associated with tourism that are helped by AI. According to Clarke (2019) AI significantly influences the behaviour of travel. It is noticeable that AI helps in PAC based on the huge volume of data with precise analysis. It reduces the analysis time and enhances the business operations with less error (Zsarnoczky, 2017).



#### **4.4 Summary**

This chapter principally highlights the data analysis part with a brief discussion according to the objectives. In this chapter basically bar chart has been showcased to highlight the participant's distributions. In this chapter, statistical analysis (such as correlation and regression) and reliability test (like the Durbin-Watson test for autocorrelation) have been performed to find out significant results. At last, discussions have been made according to the objectives of the study and realised that all the objectives are fulfilled. The study shows that in most of the cases, like content development, Google ad management, online customer behaviour analysis, programmatic advertisement creation, most of the respondents agreed to consider the role of AI in Facebook ads to manage the business efficiently. The analysis and discussions indicate that AI used in Facebook ads has a significant impact on the improvement of the tourism business performance with the help of precise forecasting analysis, consumer identification, and target segmentation.

## **Chapter 5: Conclusion and Recommendation**

### **5.1 Introduction**

From all the above discussion in and analysis that has been made on this paper, it can be said that the technological concept in the form of Artificial Intelligence plays an integral role in the advertising that is done in the social media platform of Facebook in the tourism industry of the United States. It can be mentioned here that this chapter, which brings to an end to the research process that has been done in this paper, links the other chapters of the study with the help of the research objectives that has been discussed in the first chapter of this paper. From the data analysis, it can be seen that Artificial Intelligence plays an integral role in identifying the behaviour of the customers of the tourism industry of the United States of America. It is useful in advertisements that are given in Facebook, Content Management and other Advertising platforms and inline or digital channels. It can be mentioned here that the content management system becomes crucial in the modern-day tourism sector, mainly due to the increasing influence of technological advancements and earning of revenue at the same time.

### **5.2 Linking with Objectives**

The research objectives that have been discussed in this paper earlier has been designed with the aim of accomplishing them. After analysing the data that has been gathered, it is time for them to link with the research objectives, through which it would be discussed whether they have been successfully met or not. It is important to align the research objectives with the findings of the data analysis. This would lead to know the success of the study or work that has been performed in this particular research study.

#### **Linking with Objective 1**

From the first objective, it can be seen that it has been mentioned that the objective was to know the different kinds of effects of artificial intelligence within the Facebook business and also the targeted marketing. The journal articles that have been used for this study have been reviewed and discussed, from where the importance of Artificial Intelligence has been find out, which benefits the management of the companies which operate in the tourism industry of the United Kingdom. A huge number of different resources have been found to be obtained related to the topic area which has helped a lot in gaining a lot of detailed information regarding the topic area and also for making the research very much resourceful. The perceived

impacts of Artificial Intelligence have also been covered in the literature review section, which has helped to identify the benefits and the areas or departments which are beneficial after using this modern technological product. From the analysis, it can be seen that most of the respondents consider the role of AI in Facebook ads to manage the business efficiently. The data that has been gathered from statistical analysis has given the maximum vote in favour of using Artificial Intelligence in identification of behaviour of the consumers of the American tourism sector.

### **Linking with Objective 2**

In this second research objective, it has been stated to know the way AI has been impacting the procedure of advertising of various businesses. It has been found from the analysis of the data, that has been gathered from the 10 business corporations that operate in the American tourism industry. It can be reflected here that to gather this data, both the qualitative primary and secondary research method has been used. The respondents have mostly agreed with the fact that they have stated in the questionnaires, which has been designed and circulated among the employees of the tourism companies. With the help of artificial intelligence, there has been a real shift in the market and there are adjustments with the consistent conversion rate. Though in some cases the respondents have stayed neutral, which reflected to the fact about their uncertainties regarding the benefits of using Artificial Intelligence in getting the customer-related data from the advertisements that are given in the social media platform of Facebook. It has been found from the data analysis part that the Artificial Intelligence that has been used in the area of advertisement in various social media platforms, mainly on Facebook has aided the managers in managing the advertisements efficiently, which has helped to improve the overall business performance of the tourism industry that is operated within the American marketplace.

### **Linking with Objective 3**

In the third and last research objective that has been discussed in the first chapter of this paper, it has been reflected to know the way AI will be used in Facebook for directly impacting the user's confidence and also Facebook's responsibility to several customers. It can be mentioned here that the technological advancements have provided a wide range of options that can be selected by the higher authorities of the companies to identify the recent market trends and the alterations that are happening in this global environment. This study has successfully showcased the fact that in most of the respondents has agreed with the fact that

the role of Artificial Intelligence in Facebook ads is immense in various areas, which include Google ad management, content development, programmatic advertisement creation and online customer behaviour analysis. They have stated that this step has benefitted in their respective business, where the alterations in the tastes and preferences of the people has been successfully identified by the management through using this technologically advanced tool. However, some of the respondents has stated that there are more potential services associated with tourism that are helped by Artificial Intelligence. It has been widely accepted that Artificial Intelligence plays an integral part in promotion of the products that has helped both the consumers and sellers. This is because the consumer has been able to gain information from this technological tool, whereas the tourism services has been able to promote their respective business corporations to attract the attention of the people to avail their services.

### **5.3 Recommendation**

As per the findings of the study and interviews that are conducted, it is suggested that a legal framework is provided in addressing the issues. It is important for the organisation to be more consistent and have to be enforced to the legal framework to achieve the objectives for regulation. Most of the time, the consumers have no idea but they are targeted and get influenced by the online advertisement. Additionally, it can affect the purchasing decision and they have the ability in sending target messages for specific groups. As the additional information required is imposed in the online platforms it will advertise and have parameters in deterring the recipient.

The data is available which is quite useful to display the advertisements. Moreover, the advertisers are engaged internationally to discriminate which is targeting consumer groups that are based on gender, age, etc. There is an algorithm system that is considered as the cornerstone of moderation in platforms and is recommended as per the ranking system. By incorporating the access obligation, it refers to a working algorithm but can grant access to data through which they can able to prepare and test the algorithm. If there is no association of training data, then it can be difficult to construct the algorithm and will assess its potential for data-based discrimination.

There are strategic marketing aspects that are examined by contributors as artificial intelligence is driven through social media performance and is related to digital and social media marketing. Some of the aspects are quite critical to marketers of social media as there can be negative effects related to the poor consumer journey that have brand credibility and

trust. There are ethical dimensions and complexities in adopting the artificial intelligence technologies in which there are perspectives for social media marketing communication in developing so that it can able to achieve the market return. The mobile aspects in social media marketing have a specific role in integrated mobile technologies which can have positive brand communication.

Certain challenges exist between marketers and organisations which help in developing both brand awareness and digital strategies with the information accumulated and communication of social media. Though there are complexities and opportunities for multiplatform social media in which the marketers do have a diverse consumer base which is quite easy for them. The marketers are recommended to develop brand awareness with social media marketing so that they can able to engage with consumers based on the response of any negativity.

With the development of social media strategies, there has to be a deeper analysis of the behaviour of humans that is done through social media networks and there are higher chances that it will improve. Moreover, as there is increased use of artificial intelligence, it is acting as an advantage for marketers and the scope has increased for consumer engagement. There is the subsequent trust which is received from consumers is considered key considerations which has much wider use in artificial intelligence.

#### **5.4 Limitations of the Study**

From all the above discussion, it can be reflected that there are certain limitations that has been faced while performing the research in this paper. One of the limitation that has been faced is the timeframe that has been allotted to the people who are involved with the research of this topic. As advancement has increased the pace of regular life of the people, it has also affected the global business environment, where all the busies industries operate their respective businesses. This has also ignited the interest level of the stakeholders to use different innovative technological tools and devices to identify the recent trends that are getting followed within a particular region or marketplace. But this has also acted as barriers to the research teams, who has spent their time on identifying the impact of these tools and devices like artificial intelligence in this case. The impact can be realised in a better way, if the research would be conducted on other business sectors as well. Then an efficient outcome can be achieved, where the impact of artificial intelligence with the User's Data regarding Facebook Business and Targeted Advertising can be accomplished. But for that, more time and support

is required, which is another limitation of this study. If more support would have been provided, then more organisations from the tourism sector of the United States of America would have been approached for collecting the data and information. Therefore, the analysis would have been done against more relevant data, though it is not sure that all the respondents would have provided correct or relevant information.

### **5.5 Future Scope of the Study**

From all the limitations that has been discussed above, it can be said that there is also some future scope of this particular research. The impact of artificial intelligence can be understood in a better way if the research would be conducted in some other business areas. This would automatically help to know the nature of the impact of artificial intelligence on designing the strategies of the business corporations according to the demand of the people who are using the social media platform of Facebook. On the other hand, the data that are gathered from this particular social media platform would also help identify the market alterations that occur according to the changes in the level of satisfaction of the people. The same research can also be made on other popular social media platforms like Instagram and YouTube. This would also help the management as well as the employees to collect more data and information that would help the internal stakeholders to identify the recent market trends, and serve the people according to that. This research would also provide some more opportunities in front of the people who are involved with the research like this to investigate the impact of other technological tools like artificial intelligence. The positive impacts will help to increase the usage of these tools in more numbers, whereas the adverse impacts would lead to reducing the usage of the technological products like artificial intelligence.

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## **Appendix A**

Dear Respondent,

I hope you are doing fine during this pandemic times :)

I am Aishwarya Sarma Seshappa, a Master's student at the National College of Ireland, conducting a research analysis that aims to assess the Impact of AI with the user's data regarding Facebook business and Targeted Advertising in the United States in Tourism Industry to prepare my post graduation thesis. I would like to humbly request you to answer this questionnaire with your honest opinion. There are 12 questions, it will take approximately 3-5 minutes to complete. Participation is entirely voluntary and responses are completely confidential as personally identifiable information, such as name, email address, organization name, or IP address, will not be collected.

Thank you for your participation.

## Appendix B

### Research Questionnaire

- 1) What is your age
  - 18-22
  - 23-28
  - 29-34
  - 35-40
  - 40 and above
- 2) How long have you been a part of the tourism industry?
  - 1-3 years
  - 3-5 years
  - 5+ years
  - Never
- 3) Are you aware of the use of artificial intelligence (AI) in social media advertising, particularly on Facebook?
  - Yes
  - No

Below you are presented with a list of statements about the AI application in the advertising research and consumer insights phase in the digital advertising process.

- 4) AI is used in Facebook ads to create strong lead profiles
  - Strongly Disagree
  - Disagree
  - Neutral
  - Agree
  - Strongly Agree
- 5) AI is used in Facebook ads to make efficient audience segmentation and/ or targeting
  - Strongly Disagree
  - Disagree
  - Neutral
  - Agree
  - Strongly Agree

- 6) AI is used in Facebook ads to make precise forecasts about online consumers' purchase intention
- Strongly Disagree
  - Disagree
  - Neutral
  - Agree
  - Strongly Agree
- 7) AI is used in Facebook ads to analyze and reveal online consumer attitudes and preferences
- Strongly Disagree
  - Disagree
  - Neutral
  - Agree
  - Strongly Agree

Below you are presented with a list of statements about the AI application in the ad creation phase in the digital advertising process. Ad creation comprises all creative elements such as copyright and artwork.

- 8) AI is used to tailor ad texts and images based on consumers' demographics, psychographics, and/or online behavior
- Strongly Disagree
  - Disagree
  - Neutral
  - Agree
  - Strongly Agree
- 9) AI is used as a content management platform to select the best creative assets online
- Strongly Disagree
  - Disagree
  - Neutral
  - Agree
  - Strongly Agree
- 10) AI is used to create tags for creative elements
- Strongly Disagree



- Disagree
- Neutral
- Agree
- Strongly Agree

11) AI is used as Programmatic Advertising Creation (PAC) to fine-tune the ad content quality on the fly

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Below you are presented with a list of statements about the AI application in the media planning and buying phase in the digital advertising process.

12) Facebook Ads Manager and/or Google Ads are used to execute media planning

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

13) Agencies utilize AI in automated dynamic media planning and buying phase

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

14) Do you believe that AI helps to improve business performance

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree