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The Role of Artificial Intelligence in Influencer Marketing

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Abstract
Nowadays Influencer marketing is one of the most growing industry. Social media influencers are increasing with time and brands are moving towards endorsing themselves on digital platforms. AI is the new element for growing of influencer marketing and it will help influencers to improve their digital platforms. AI will be impacting positively with the help of the new ways to manage the campaigns of influencers or celebrities on social platforms. The new virtual social presence has made consumers interested in the virtual influencers which will also affect the perceived quality of products used by these influencers. The study is quantitative and data collected is on convenience sampling in non-probability. The instrument used to collect data was through questionnaire. The findings of the research showed positive impact of Artificial intelligence on Influencer marketing. All the independent variables celebrity endorsements, perceived quality and virtual social presence with the mediator Artificial intelligence showed positive relation with influencer marketing. The result was analyzed and processed through SPSS. This research will help influencers to use AI for effectiveness and to know about emerging AI influencers.
Keywords: Influencer marketing, Artificial intelligence, celebrity endorsements, perceived quality, virtual social presence

1. Introduction

Marketing is the process of getting the consumers know about the product or service of the company, through marketing a company can get other people intrigued by their offerings. (Morgan et al., 2019). Influencer marketing has been the emerging new way of marketing, through influencers on different digital platforms consumers have now an easier access to different marketing campaigns, and celebrities have an easier way to advertise a brand on their social media platform (Vrontis et al., 2021).

Influencer marketing not only is limited to celebrities, also influencers who were not considered famous on an offline setting (Aw & Labrecque, 2020). Influencer marketing has its own challenges, customers perceive quality of different products through the liking and the popularity of the influencer, also influencers need to have a prominent social presence on the platform to attain and maintain the social popularity (Jin et al., 2019).

Machine Learning and AI both are the new advances of technology in world. Influencer marketing is evolving and helping influencers and brands resolving these essential problems (Argyris et al., 2020).

1.1. Background of the Study

One of the corporate domains that has seen the change of digital transformation most intensely is marketing. Modern, cutting-edge technology, including artificial intelligence, are starting to be experimented with in marketing. (Argyris et al., 2020). Implementing the new technologies in everyday operations of marketing has accelerated the success. Influencer marketing has become a new and popular form of online marketing. It is a booming industry with an expected industry value of $21.1 million in 2023 with 83% effectiveness in market. (Belanche et al., 2021).

Influencer marketing has become a very effective way of endorsing brands through celebrities, consumers perceiving quality and social presence on digital platforms. While, influencer marketing is an effective way there are also challenges prevailing with this form of marketing. (Martínez-López et al., 2020).

Social media platforms are evolving with time and there are more advanced technologies which are making influencers lives easier but also at the same time challenging. New technologies such as virtual social presence of influencers is now being more acknowledged all over the world also celebrities have a new gateway of promotion of brands through social media platforms (Jin et al., 2019).

They also are now categorized to be influencers as the social platforms of celebrities not only endorse brands but also to share their normal lives and everyday routines which makes

People all over the world watch them and get influenced to live a life like those. (Moustakas et al., 2020), a good quality and should be used as someone famous is using it and it would also be effective same to that influenced person, this is how influencer marketing helps a brand to build a good quality status in a consumer mind and this is how a consumer perceives the quality. (Guruge, 2018).

1.2. Problem Statement

AI is a powerful tool which has started to be used on varied platforms of influencer marketing which has impacts on the influencers mainly which are positive and helpful for the influencers. (Vlačić et al., 2021).

Influencers on social media have gained prominence in marketing and have been named the "new brand." (Gómez, 2019). The new form of social media influencing is virtual AI. Their increased authenticity and credibility, influencers have become especially sought after by brands and are frequently more successful than traditional advertising strategies. This also suggests that consumers are interested in virtual Influencers. (Sands et al., 2022). In addition to the above implementing a successful influencer marketing campaigns has become a tough job, AI is helping to maintain and implement all the jobs of marketing campaigns successfully and without hassle. In social media domains, social media influencers or SMIs, are becoming more and more common. (Gräve, 2019).

The researcher became interested in this topic as it is new and trendy plus a very handy type of marketing for the influencer. Not enough research work has been devoted on the subject of new trends of virtual influencers and how AI is impacting positively on influencer marketing, so this study will be focusing on the positive AI impact on influencer marketing and virtual social presence of influencers on social media platforms becoming a new trend and how it will be boosting AI in influencer marketing.

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1.3. Research Questions

RQ1: To what extent does celebrity endorsements will be positively impacted by AI in Influencer marketing?
RQ2: Is it possible that perceived quality of a brand product/services to be impacted by AI in Influencer marketing?
RQ3: What will be the impact of virtual social presence on Influencer marketing?
RQ4: What is the mediating effect of Artificial Intelligence on Influencer marketing?

1.4. Purpose of the Study

The purpose of this research is to explore the impacts of AI on influencer marketing. To identify how AI is positively impacting the growth of influencer marketing through different methods of organizing all campaigns symmetrically and virtual social presence of influencers on social media platforms.

1.5. Significance of Study

This study will investigate the different positive impacts of AI on influencer marketing, the research will be addressing how influencer marketing will grow with the help of AI as AI will make easier for influencers/celebrities to plan marketing campaigns by assessing dates and events with proper precision. These marketing campaigns will make it easier to perceive quality of products for customers. In addition, virtual social presence will bring more influencers in market of influencer marketing as influencers will not have to disclose the identity.

The finding of this research will help future researchers to have an insight of the phenomenon of AI in influencer marketing. This research will be the initial steps towards the understanding of positive impacts AI will be having in future on Influencer marketing.

1.6. Outline of Study

This report has five chapters including Introduction which is the first chapter of this report. Chapter two will be the literature review of the previous researches done on the variables used in the research. The third chapter will have the research methodologies systematically written and how research will be implemented. Fourth chapter will comprise of all the findings of research, data analysis will be done in this chapter and last chapter will be conclusion, which will have all the discussions of the findings.

2. Literature Review

Influencer marketing used to be associated with only few dedicated bloggers and celebrities, but nowadays social media influencers are so common in the business (Jin et al., 2019). Although Instagram and Facebook are the most widely used social media platforms, influencers can post on any of them. Influencers are rewarded by companies through cash or free vacations, experiences, goods, or services. (Campbell et al., 2020). Influencers typically blend in with the surrounding content when they post advertisements online format, like a commercial or advertorial. (Campbell & Grimm, 2019). The present expansion of influencer marketing is attributable to the convergence of several elements. First of all, compared to print media, individuals are now consuming more media online. Second, when it comes to advertisements, internet users respond differently. Because consumers are known to be oriented toward goals when they browse online, they are less receptive to overt marketing. (Lindsey-Mullikin & Borin N., 2017).

Influencers need the experience that social media platforms provide in order to gain notoriety, and social media platforms get at least some of their appeal from the content that influencers provide, so social media and influencer marketing go hand in hand, who are active on them publish (Haenlein et.al., 2020). In contrast to communications created by brands, user-generated material is more valuable in the digital sphere because it offers accurate and sincere perception of the value of a product or service, and people are more willing to accept and heed these recommendations. (Djafarova & Rushworth, 2017). Influencer marketing has become increasingly more popular. A recent poll found that 39% of marketers planned to boost their influencer marketing expenditure in 2018 while 19% planned to increase their campaign spending (Lou & Yuan, 2019). In today's media climate, mass media outlets like TV, radio, and newspapers are no longer the main sources of information for consumers. Rather, social media platforms and online communities are frequently used by customers for relationship- and information-building (Ahmad, 2018).

The way artificial intelligence (AI) is developing has fundamentally altered the nature of today's corporate environment. Among the most important. Applications of artificial intelligence (AI) in marketing help to develop performance. The aim of the current research is to determine how AI affects marketing (Shaik, 2023). The goal of artificial intelligence marketing (AIM) is to maximize technology and market data to improve the client experience. (Jain & Aggarwal, 2020). AI can close the previously unachievable gap between data science and execution by analyzing vast amounts of data (Thiraviyam, 2018). AI is used in artificial intelligence marketing, or AIM, to automate the curation of enormous amounts of data and marketing mix information in order to develop expertise. The information is then used by AIM to carry out and automate marketing tasks, like producing market intelligence (Verma et al., 2021). According to (Kaplan & Haenlein, 2019) the definition of AI is "The goal of artificial intelligence is to program computers to perform tasks that, when performed by humans, are deemed to require intelligence." Technological developments such as block chain, cloud computing, big data, data science, artificial intelligence (AI), and the internet of things (IoT) are revolutionizing our daily lives and work environments. Future advancements in these technologies could result in mega networking and hyper automation (Huang & Rust, 2021).

The marketing environment is changing due to artificial intelligence (AI) and will soon undergo a complete transformation. Even though early adopters are working to create value from AI, marketing is one of the most significant commercial applications of the technology at the moment (De Bruyn et al., 2020). Artificial intelligence (AI) is being used by marketers in a variety of contexts, including messaging, personalization, predictive behaviors, analytics, and segmentation all of which are tied to marketing strategy (Bughin et al., 2017). While most businesses in the modern era have implemented AI, in many businesses, high-level implementation is still lacking. Many marketers have expressed interest in utilizing AI in the near future, nearly all of them (Mustak et al., 2021).

A celebrity endorser is someone who uses their fame to promote a product for consumers by appearing in an advertising because celebrities are thought to draw in customers and impart favorable qualities to the products they support, celebrity endorsement is a common strategy in marketing (Chung & Cho, 2017). It has been argued that the current models only account for a small subset of celebrity characteristics and oversimplify the intricate dynamic process. (Aw & Labrecque, 2020). Although celebrity endorsements have long been seen as a reliable source of knowledge about goods and services, research on other celebrity categories, such social

media influencers, is currently lacking (Burke, 2017). An endorsement can be co-presentational (e.g., simply showing up in a hotel advertisement), implicit (e.g., enjoying this restaurant), imperative (e.g., should pick Korea as the destination for your next vacation), or explicit (e.g., endorsing this airline) (Yang, 2018).

Despite the fact that the digital world made it easier for regular people to voice their opinions, it was still seen as genuine and fascinating. It then caught the interest of those who were following them, and the content spread widely (Alic et al., 2017). (Guruge, 2018) highlighted this further by pointing out that celebrities are acting in four promotional capacities: spokesman, endorser, actor, and testimonial. Nevertheless, regardless of the position, the associated costs need to be considered. Numerous studies have shown how celebrity endorsements affect consumer behavior. These results demonstrate that celebrities lend credibility to advertisements. Social media's rise has made it possible to communicate with clients and opened up new avenues for celebrity endorsement. To boost the effect of their sponsored posts, brands can either employ celebrity endorsements or upload content from their own accounts on social media (Jin & Ryu, 2019). It's also important to consider the social media phenomena of anonymous users becoming well-known in many industries as a result of their involvement and content creation on these platforms. (Rosenthal & Brito, 2017).

Considering social presence as the capacity to project a feeling of friendliness and warmth from people, the features of the platforms might offer variations in the level of social presence. Users can communicate with each other while sharing the same virtual environment in virtual rooms (Barta et al., 2021). (Guimarães et al., 2020) discovered that individuals who participated in the virtual reality condition had greater levels of social presence of the virtual suspect than those in the traditional setting condition. The following factors showed a stronger effect of this effect: Congruence, Perceived Communication Understanding, and Perceived Emotional Comprehension. Improved virtual team performance and the success of e-commerce websites, recommendation engines, and virtual worlds are all made possible by virtual presence, which teaches organizations how to interact, connect, and build relationships with individuals in any virtual setting, such as video chats, digital presentations, web conferences, and phone calls. (Schultze et al., 2019).

The idea of being fully present in a virtual environment as if the medium didn't exist is connected to virtual presence. As a result, the technology needs to be able to replicate social interactions, physical laws, and visual quality of the real world. In these highly dynamic and virtual worlds, students are free to experiment and learn (Selzer et al., 2019). Users are more interested and motivated to interact in a technology-simulated world when they experience a greater virtual presence since they are immersed in it and don't care about the platform or medium (Chen, 2023).

Avatars of people created by computers that have a large social media following are known as virtual influencers. They are increasingly working with high-end labels like Prada and Louis Vuitton to showcase their latest collection of goods. The most well-known virtual influencer, Lil Miquela, has 1.7 million Instagram followers. Despite being fictitious and acknowledging that she is a robot, she expresses human emotions in her postings and interactions with her followers. According to studies, virtual influencers are generally thought to provide novelty, but they might not be as trustworthy and genuine as real social influencers (Moustakas et al., 2020).

Customers' opinions of the greatness or quality of a product or service over others in terms of its functionality are known as perceived quality. Perceptions from customers are an evaluation that varies depending on the customer (Supiyandi et al., 2022). Building quality perceptions on the key brand elements and determining the aspects of quality that matter to consumers (target market groups) are two ways to create a positive perceived quality. (Shanahan et al., 2019). Customers' inclinations to buy are significantly influenced by the influencer's method of product sharing (Xiao et al., 2018). When it comes to consumer brand commitment, perceived quality is essentially a customer's assessment of a product or service's dependability and reliability. It is strongly correlated with customers' preferences, levels of satisfaction, and purchase decisions (Nikhashemi et al., 2017), both directly and indirectly, brand awareness affects brand equity through perceived quality and brand loyalty. Brand association dimension, which was determined to have negligible impact on brand equity. Consequently, since marketing communication management (campaigns, promotions, advertising, etc.) builds high perceived quality and brand loyalty when evaluating the impact of influencer marketing, it is useful to measure these factors. (Kim et al., 2018). Customer satisfaction and attitude are different from perceived quality because the latter may be based on low expectations contends that providing a higher value requires a focus on quality. Further clarifies how perceived quality affects a company's profitability defines perceived quality as the general perception of a brand based on essential components like performance and dependability (Calvo-Porral & Lévy-Mangin, 2017).

(Amelia, 2018) also discusses actual quality and perceived quality are not the same. First, buyers may not believe or be willing to credit changes to their perceived quality whether they've had a bad encounter in the past with a good or service. Second, the modifications made to improve quality can go unnoticed by clients or be viewed as insignificant. Third, it's possible that customers won't be motivated to assess every area of quality; instead, they might simply assess a select few, so it's critical to know which aspects are most significant to them. Fourth and last, buyers might not know how to assess the factor and might be 10 staring at the incorrect one, like the cost of diamonds. Therefore, it's critical to understand the distinction between perceived quality by consumers and just quality.

2.1. Underpinning and Supporting Theories/Models

Previous years have seen research on the application of artificial intelligence to influencer marketing. While, the area where Impact of AI on influencer marketing is still limited. Some of the work on AI in influencer marketing and the key points are highlighted below.

Influencers on social media have become a powerful force in marketing; they've been called the "new brand." But a brand-new category of social media influencers has just surfaced: artificial intelligence (AI) virtual influencers (Weinswig, 2016). Shudu, Margot, and Xhi are the three virtual AI influencers that the French luxury brand Balmain has appointed. These influencers, the brand said in a news release, were a better representation of the company's embrace of inclusivity (Minton, 2018), because AI influencers are thought to be less expensive and are less likely to be embroiled in scandals, brands may find them appealing. (Thomas & Fowler, 2021). As (A. & Haenlein, 2019) state conversational AI interfaces are becoming more common, and digital humans may one day work in retail settings. Artificial Intelligence (AI) is currently being used in the social media context to automatically

compose and reply to messages, thereby helping brands manage their online personas. In the realm of influencer marketing, AI has led to the emergence of a new kind of influencer: the AI influencer. (Liu, 2019). (De Veirman et al., 2017) research on machine learning and artificial intelligence also suggests that AI influencers may have advantageous outcomes. Specifically, the distinction between human and automated behavior is becoming increasingly hazy, which allows a bot to gain substantial influence.

Some work that initially is highlighting the impacts of AI on Influencer marketing are as stated. The goal of the study of (Block & Lovegrove, 2021) is to analyze analyzing the speech of an AI influencer to ascertain what precisely about her attracts to her followers. Studies show that the influencer serves as both the strategy and the message, and that their identity and messaging work together to create a coherent strategic communication tool.

Another study of (Thomas & Fowler, 2021) compares the effects of using artificial intelligence (AI) influencers to traditional (human) influencers and looks into the ramifications of doing so. It also aims to offer advice for when disputes involving AI influencers occur as well as how customers react to them on social media similar to the positive marketing effects generated by human celebrity endorsers, AI influencers can generate.

Though there are possible benefits of working with an AI influencer, little empirical research has been done to determine how customers react to these influencers. As a result, nothing is understood about the reasons and ways in which customers may react differently to virtual social presence of AI influencers or how brands might effectively use them while not using celebrity endorsers or in coming ages AI influencer might become new age celebrities.

2.2. Research Framework

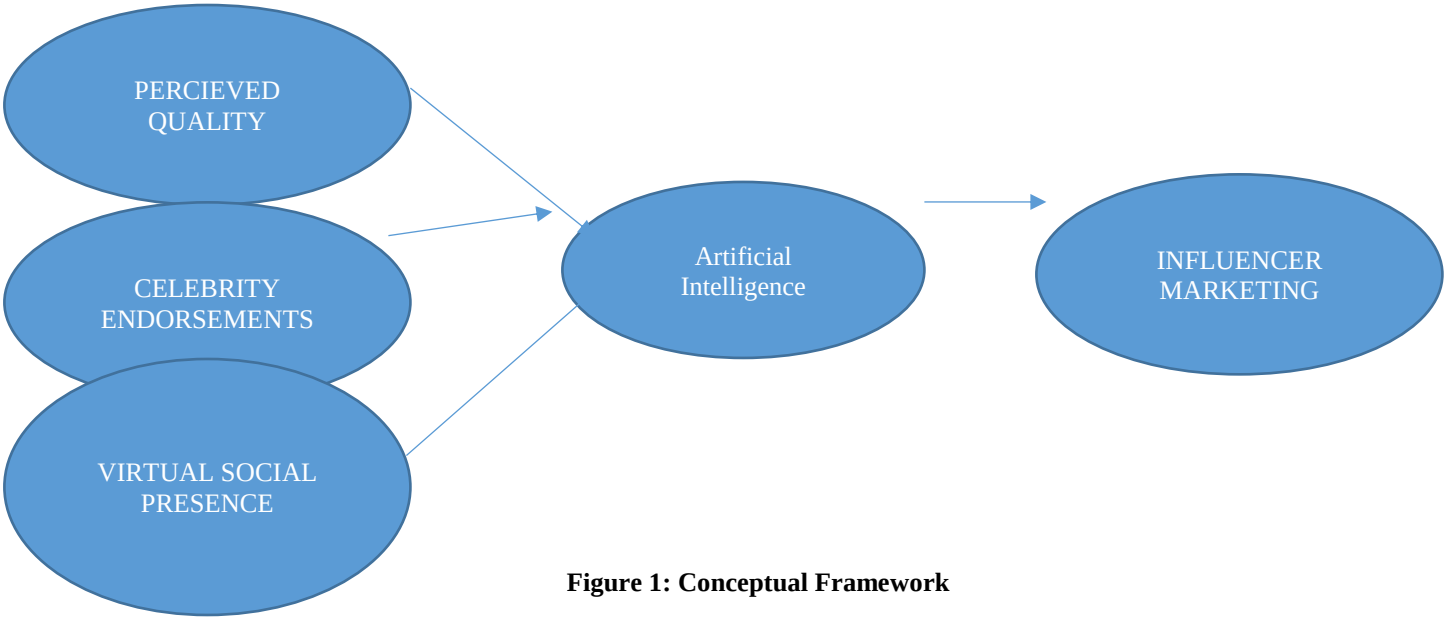

Figure 1: Conceptual Framework

The conceptual framework above shows the three independent variables perceived quality, celebrity endorsements and social presence. These independent variables are directed towards the mediator Artificial Intelligence and dependent variable Influencer Marketing.

2.4. Hypothesis

H1: Celebrity endorsements are positively impacted by AI in influencer marketing.
HA: Celebrity endorsements are negatively impacted by AI in influencer marketing.
H2: Perceived quality of a brand's product/services is impacted by AI in influencer marketing.
HA: Perceived quality of a brand's product/services is not impacted by AI in influencer marketing.
H3: Virtual social presence of AI influencers has positive impact on influencer marketing.
HA: Virtual social presence of AI influencers has negative impact on influencer marketing.
H4: Artificial Intelligence has a significant mediating effect on Influencer marketing.

3. Research Methodology

3.1. Research Approach

The approach used for this research is quantitative. The research is explanatory, as impact of AI on influence marketing is a topic still not investigated properly. In this research the new Artificial Intelligence being emerged in the world of influencer marketing is explored. There has been very limited information on this topic and this research will increase the understanding of this topic.

3.2. Research Design

This research is quantitative. The design for this research is correlational as the independent variables of this research are perceived quality, celebrity endorsements and virtual social presence with the dependent variable being Influencer marketing and mediating variable Artificial Intelligence. This research has measured these variables statistical relationship and assess the positive or negative correlation between the variables.

3.3. Sampling Design

3.3.1. Target Population

The target population for this research are individuals who use social media and are fond of social media influencers. The ages of target population are between 16-60 years of age.

3.3.2. Sample Size

Sample size is 176 respondents. The respondents are selected conveniently. The respondents are mainly students of private and public schools, colleges and universities. There are also respondents who are from working industry such as teachers, office employees and normal people who have access to social media.

3.3.3. Sampling Technique

The sampling technique used is non-probability sampling in which convenience sampling is used. The participants of this research are selected on the easier accessibility.

3.4. Instrument of Data Collection

The instrument that is utilized for this research is questionnaire with Likert scale. The questionnaire is designed in a close ended approach, the questions are related to the variables used in this research. The questionnaire has 5-point Likert scale in which 1 is "Strongly disagree" and 5 is "Strongly agree".

3.5. Reliability of Instrument

The questionnaire' questions have been taken from different articles. The questions are taken from (Leinatamm & Bilali, 2019), (Trivedi J. P, 2018) and (Pelau et.al, 2021). The reliability of questionnaire constructed has been checked through Cronbach's alpha, through Cronbach's alpha the researcher can know how similar each item is to one another and whether they portray the same idea continuously.

3.6. Procedure of Data Collection

The data is collected from the individuals who are interested in utilizing social media and get influenced by social media influencers. The source of data collection is questionnaires. These individuals are students, employees or any person who has access to internet and social media. The questionnaires are taken online from different individuals in different locations of Pakistan. The data is collected and analyzed on the basis that these variables have relationship and are the individuals fascinated with the AI usage in influencer marketing and this data collected will let researcher know the positive or negative correlations of the variables.

3.7. Statistical Technique

SPSS is used for the data analyzing through which responses from participants are recorded. Descriptive frequencies have been taken for demographics. Reliability test is done and correlations have been done between all variables, for testing the hypothesis regression analysis is done in which ANOVA table, model summary, coefficients are analyzed.

4. Results and Findings

Table 1: Descriptive Profile of the Data

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	106	60.2	60.2	60.2
	female	70	39.8	39.8	100.0
	Total	176	100.0	100.0	

4.1. Gender demographics

Gender demographics have majority in males with 106 respondents (60.2%) and female are 70 (39.8%) from a total of 176 respondents.

Table 2: Age demographics

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 21	4	2.3	2.3	2.3
	21-30	62	35.2	35.2	37.5
	31-40	77	43.8	43.8	81.3
	41-50	23	13.1	13.1	94.3
	above 50	10	5.7	5.7	100.0
	Total	176	100.0	100.0	

Age demographics have majority in age group of 31-40 with 77 respondents (43.8%). The second majority is in age group of 21-30 with 62 respondents (35.2%). Other age groups of 41-50 consist of 23 respondents (13.1%), above 50 has 10 respondents (5.7%) and less than 21 has the lowest respondent number of 4 (2.3%) from a total of 176 respondents.

Table 3

		Education			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Matriculation	2	1.1	1.1	1.1
	Undergraduate	23	13.1	13.1	14.2
	Graduate	144	81.8	81.8	96.0
	Doctorate	7	4.0	4.0	100.0
	Total	176	100.0	100.0	

4.2. Education demographics

Education demographics consists of majority in graduate with 144 respondents (81.8 %). Undergraduate consists of 23 respondents (13.1%), doctorate has 7 respondents (4.0%) and matriculation with lowest 2 respondents (1.1%). There was no respondent from intermediate from a total of 176 respondents.

Table 4

Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employee	119	67.6	67.6	67.6
	own business	18	10.2	10.2	77.8
	Student	39	22.2	22.2	100.0
	Total	176	100.0	100.0	

4.3. Occupation demographics

Occupation demographics has shown that majority of respondents are employees with 119 respondents (67.6%). Students are 39 respondents (22.2%) and 18 of respondents own a business (10.2%) from a total of 176 respondents.

Table 5: Validation of Model

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
PQ	176	2.00	4.00	3.1818	.34823
CE	176	2.00	3.60	2.5257	.51792
VSP	176	2.00	3.67	2.6326	.39373
AI	176	1.75	3.75	2.3643	.25808
IM	176	1.67	3.67	2.4261	.33557
Valid N (listwise)	176				

4.4. Descriptive Statistics of variables

This table of descriptive statistics of variables shows that mostly responses for all variables except perceived quality were between disagree and neither agree or disagree. Perceived quality has mean of 3.18 that shows responses were mostly in between neither agree or disagree and agree. The mean for celebrity endorsement is 2.52, mean for virtual social presence is 2.63, mean of Artificial intelligence is 2.36 and mean of Influencer marketing is 2.42 these all show responses were between disagree and neither agree or disagree.

Table 6

Reliability Statistics	
Cronbach's Alpha	N of Items
.714	5

4.5. Reliability Statistics

The table of reliability statistics shows Cronbach's alpha value. The value of Cronbach's alpha is 0.714, the value is greater than 0.5 which means the data collection tool is reliable.

Table 7

Var.	Variable Name	N	Cronbach's Alpha
PE	Perceived Quality	176	.732
CE	Celebrity Endorsements	176	.656
VSP	Virtual Social Presence	176	.668
AI	Artificial Intelligence	176	.783
IM	Influencer Marketing	176	.621

4.6. Reliability Statistics of variables

The table of reliability statistics of all variables shown for all the variables separately are all greater than 0.5 which shows the questions for all variables in questionnaire are reliable for analysis.

4.7. Correlations of variables

The table shows correlation of all variables. There is positive relation between all variables is shown. The correlation for perceived quality with Influencer marketing is 0.243, Correlation of celebrity endorsement with influencer marketing is 0.23, Correlation for Virtual Social Presence with influencer marketing is 0.356, Correlation of mediator Artificial intelligence with Influencer marketing is 0.198.

4.8. Model Summary of Independent and dependent variables.

The table of model summary shows the correlation of the independent variables, mediator and dependent variable. Value of R shows correlation which is 0.451 and is moderate relation. Adjusted R square shows the accuracy 0.184 which shows small accuracy.

Table 8

Correlations

		PQ	CE	VSP	AI	IM
PQ	Pearson Correlation	1	.702**	.248**	.025	.243**
	Sig. (2-tailed)		.000	.001	.004	.001
CE	Pearson Correlation	.702**	1	.329**	.173*	.231**
	Sig. (2-tailed)	.000		.000	.002	.002
VSP	Pearson Correlation	.248**	.329**	1	.568**	.356**
	Sig. (2-tailed)	.001	.000		.000	.000
AI	Pearson Correlation	.025	.173*	.568**	1	.198**
	Sig. (2-tailed)	.004	.002	.000		.002
IM	Pearson Correlation	.243**	.231**	.356**	.198**	1
	Sig. (2-tailed)	.001	.002	.000	.002	
	N	176	176	176	176	176

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

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

Table 9

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.451[a]	.203	.184	.30022

a. Predictors: (Constant), AI, PQ, VSP, CE

Table 10

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.884	7	.971	10.773	.000[b]
	Residual	15.233	169	.090		
	Total	19.117	176			

a. Dependent Variable: IM

b. Predictors: (Constant), AI, PQ, VSP, CE

4.9. ANOVA for Independent and Dependent variables

The table of ANOVA has significant regression for all independent, mediator and dependent variable, the sig. value is less than 0.005.

Table 11

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.920	.419		2.196	.000
	PQ	.234	.071	.243	1.633	.001
	CE	.150	.048	.231	.148	.002
	VSP	.303	.606	.356	4.479	.000
	AI	.254	.096	.198	.393	.002

a. Dependent Variable: IM

4.10. Coefficients for Independent and Dependent variables

The table of Coefficients shows VIF value. The value of VIF is less than 5 for all variables which shows there is no multicollinearity is present and no variable needs to be removed.

H1: Celebrity endorsements are positively impacted by AI in influencer marketing.

HA: Celebrity endorsements are negatively impacted by AI in influencer marketing.

Table 12

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.231[a]	.054	.048	.32828

a. Predictors: (Constant), CE

4.11. Model Summary of hypothesis 1

The table of model summary shows the correlation between Celebrity endorsements and influencer marketing. Value of R shows correlation which is 0.231 and is weak relation. Adjusted R square shows the accuracy 0.048 which shows small accuracy.

Table 13

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.054	3	1.054	9.779	.002[b]
	Residual	18.644	173	.108		
	Total	19.698	176			

a. Dependent Variable: IM

b. Predictors: (Constant), CE

4.12. ANOVA of hypothesis 1

The table of ANOVA has significant regression for independent variable Celebrity endorsement and dependent variable influencer marketing, the sig. value is less than 0.005.

Table 14

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.047	.124		16.526	.000
	CE	.150	.048	.231	3.127	.002

a. Dependent Variable: IM

4.13. Coefficients of hypothesis 1

The table of Coefficients shows that VIF is less than 5 for Celebrity endorsement which shows there is no multicollinearity present. This shows that Hypothesis 1 is accepted and HA is rejected as there is positive relation between both variables.

H2: Perceived quality of a brand's product/services is impacted by AI in influencer marketing.

HA: Perceived quality of a brand's product/services is not impacted by AI in influencer marketing.

Table 15

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.243[a]	.059	.054	.32647

a. Predictors: (Constant), PQ

4.14. Model Summary of Hypothesis 2

The table of model summary shows the correlation between perceived quality and influencer marketing. Value of R shows correlation which is 0.243 and is weak relation. Adjusted R square shows the accuracy 0.054 which shows small accuracy.

Table 16

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.161	2	1.161	10.893	.001[b]
	Residual	18.545	174	.107		
	Total	19.706	176			

a. Dependent Variable: IM

b. Predictors: (Constant), PQ

4.15. ANOVA of hypothesis 2

The table of ANOVA has significant regression for independent variable perceived quality and dependent variable influencer marketing, the sig. value is less than 0.005.

Table 17

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.682	.227		7.415	.000
	PQ	.234	.071	.243	3.300	.001

a. Dependent Variable: IM

4.16. Coefficients of Hypothesis 2

The table of Coefficients shows that VIF is less than 5 for perceived quality which shows there is no multicollinearity present.

This shows that Hypothesis 2 is accepted and HA is rejected as there is positive relation between both variables.

H3: Virtual social presence of AI influencers has positive impact on influencer marketing.

HA: Virtual social presence of AI influencers has negative impact on influencer marketing.

Table 18

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.356[a]	.126	.121	.31453

a. Predictors: (Constant), VSP

4.17. Model Summary of hypothesis 3

The table of model summary shows the correlation between Virtual social presence and influencer marketing. Value of R shows correlation which is 0.356 and is moderate relation. Adjusted R square shows the accuracy 0.121 which shows small accuracy.

Table 19

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.493	2	2.493	25.197	.000[b]
	Residual	17.214	174	.099		
	Total	19.706	176			

a. Dependent Variable: IM

b. Predictors: (Constant), VSP

4.18. ANOVA of hypothesis 3

The table of ANOVA has significant regression for independent variable Virtual social presence and dependent variable influencer marketing, the sig. value is less than 0.005.

Table 20

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.628	.161		10.129	.000
	VSP	.303	.060	.356	5.020	.000

a. Dependent Variable: IM

4.19. Coefficients of hypothesis 3

The table of Coefficients shows that VIF is less than 5 for Virtual social presence which shows there is no multicollinearity present. This shows that Hypothesis 3 is accepted and HA is rejected as there is positive relation between both variables.

H4: Artificial Intelligence has significant mediating effect on Influencer marketing.

Table 21

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.198[a]	.039	.034	.32594

a. Predictors: (Constant), AI

4.20. Model Summary of mediator

The table of model summary shows the correlation between mediator that is Artificial intelligence and influencer marketing. Value of R shows correlation which is 0.198 and is weak relation. Adjusted R square shows the accuracy 0.034 which shows small accuracy.

Table 22

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.747	3	.747	7.034	.002[b]
	Residual	18.379	173	.106		
	Total	19.126	176			

a. Dependent Variable: IM

b. Predictors: (Constant), AI

4.21. ANOVA of mediator

The table of ANOVA has significant regression for mediator Artificial intelligence and dependent variable influencer marketing,

the sig. value is less than 0.005.

Table 23

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.031	.228		13.311	.000
	AI	.254	.096	.198	2.652	.002

a. Dependent Variable: IM

4.22. Coefficients of mediator

The table of Coefficients shows that VIF is less than 5 for mediator Artificial intelligence which shows there is no multicollinearity present.

Table 24

Model Summary

	coeff	se	t	p	LLCI	ULCI
constant	2.2276	.3142	7.0898	.0000	1.6074	2.8478
PQ	.2465	.0688	3.5851	.0000	.1108	.3822
AI	.2457	.0927	2.6515	.0000	.4285	.0628

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI	c'_cs
.2465	.0688	3.5851	.0000	.1108	.3822	.2586

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
AI	.0045	.0188	.0211	.0562

Model Summary

	coeff	se	t	p	LLCI	ULCI
constant	2.5633	.2743	9.3437	.0000	2.0218	3.1049
CE	.1410	.0476	2.9611	.0000	.0470	.2350
AI	.2063	.0954	2.1636	.0000	.3946	.0181

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI	c'_cs
.1410	.0476	2.9611	.0000	.0470	.2350	.2198

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
AI	.0178	.0141	-.0027	.0516

Model Summary

	coeff	se	t	p	LLCI	ULCI
constant	1.3205	.3983	3.3154	.0000	.5343	2.1066
VSP	.3687	.0725	5.0817	.0000	.2255	.5118
AI	.0599	.1088	.5509	.0000	.1548	.2746

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI	c'_cs
.3687	.0725	5.0817	.0000	.2255	.5118	.4303

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
AI	.0227	.0651	-.1457	.1102

Mediation test shows the direct and indirect effect of independent variable on dependent variable through mediator. Perceived quality has p-value of 0.000 showing significance of relationship through mediator. Direct effect of perceived quality is 0.2465 and indirect effect is 0.0045 through mediator AI. Celebrity endorsements has p-value of 0.000. Direct effect of Celebrity endorsements is 0.1410 and indirect effect is 0.0178. Virtual Social presence also shows p-value of 0.000 with direct effect of 0.3687 and indirect effect of 0.0227 through mediator AI on Dependent variable Influencer Marketing This shows that Hypothesis 4 is accepted. Artificial intelligence has mediating effect on Influencer marketing.

4.23. Hypotheses Assessment Summary

Hypothesis were all tested by regression analysis in SPSS. The results of tested hypothesis are as explained:

H1: Celebrity endorsements are positively impacted by AI in influencer marketing.

Celebrity endorsements showed a positive correlation but weak with influencer marketing with R value of 0.231. The regression of this hypothesis is significant as significance value is 0.002. Thus, hypothesis 1 is accepted.

H2: Perceived quality of a brand's product/services is impacted by AI in influencer marketing.

Perceived quality also showed a positive correlation and it was also weak with influencer marketing with R value of .243. The regression of this hypothesis is significant as significance value is 0.001. Thus, hypothesis 2 is accepted.

H3: Virtual social presence of AI influencers has positive impact on influencer marketing.

Virtual Social presence showed a positive correlation and it was moderate with influencer marketing with R value of 0.356. The regression of this hypothesis is significant as significance value is 0.000. Thus, hypothesis 3 is accepted.

H4: Artificial Intelligence has a significant mediating effect on Influencer marketing.

Artificial intelligence has significant mediating correlation, which is weak with influencer marketing with R value of 0.198. The regression of this hypothesis is significant as significance value is 0.003. It is shown that Artificial intelligence has significant mediating effect on influencer marketing.

5. Conclusion, Discussion, Implications, Limitations and Recommendations

5.1. Conclusion

The outcomes of the research are discussed in this chapter after the conclusions derived from the interpretations and inferences made from the data collected from the respondents. According to the results of research it has been proved that there are positive impacts of Artificial Intelligence on influencer marketing. The independent variables celebrity endorsements, perceived quality, virtual social presence and mediator Artificial Intelligence has a positive impact on Influencer marketing. The mediator Artificial Intelligence has significant mediating effects on Dependent variable Influencer marketing.

5.2. Discussion

The research conducted explains the impacts of Artificial intelligence on Influencer marketing, whether the Artificial Intelligence complements Influencer marketing or not. The results have shown positive impact of Artificial Intelligence on Influencer marketing. It has been shown that celebrity endorsements have a positive relation with influencer marketing ($\beta = .231$, $p < .002$). Perceived quality has positive relation with influencer marketing ($\beta = .243$, $p < .001$). Virtual social presence also shows positive relation with influencer marketing ($\beta = .356$, $p < .000$). Artificial Intelligence has significant mediating effect on Influencer marketing ($\beta = .198$, $p < .001$).

In previous researches it has also been proven that celebrity endorsements have positive impact on influencer marketing, as it is stated by (Chung & Cho, 2017) that celebrity endorsement is a common marketing strategy for influencer marketing and also said by (Aw & Labrecque, 2020) celebrity endorsement is reliable source of knowledge for consumers. Also, (Burke, 2017) stated that consumers feel comfortable if celebrities endorse products and all social media influencers have also become a celebrity. Through the results obtained it is proven people believe the quality of product and feel happier when they buy celebrity endorsed product. Perceived quality also has shown positive relation with influencer marketing. (Supiyandi et al., 2022) stated influencers are the main reason of consumers having to perceive quality of products. Mostly people believe the influencers they are familiar with (Shanahan et al., 2019). The results showed that people are suspicious about the AI generated models but still not inclined in buying products marketed by AI generated models. Virtual social presence indicates a positive relation with influencer marketing users are more suspicious and interested to know more about the virtual models as said by (Schultze et al., 2019).

Also (Selzer et al., 2019) stated that Avatars made social media influencers have a huge social media following. The results also show that people are keen to know more about these virtual avatars social presence but also threatened by their presence. The mediator Artificial Intelligence also has shown a significant mediating effect as stated by (De Bruyn et al., 2020) that AI has variety contexts as AI is being used as chatbots, to personalize events and etc. AI is also a great tool for helping influencers to easy work. (Bughin et al., 2017).

As shown by the results and discussions Artificial Intelligence positively impacts on influencer marketing. (Block & Lovegrove, 2021) also showed that influencers are having an ease with the help of AI tools but are also threatened how AI is fast in growing and AI influencers emerging more.

5.3. Implications

The study done on the impacts of artificial intelligence on influencer marketing has been proved positive. This will help influencers understand that how Ai influencers are emerging and users of social media are suspicious and trying to get to know these types of influencers. Also, the research tells how AI can help influencers to grow and effectively work on social media

5.4. Limitations

The research has been done to see the impacts of Artificial Intelligence on Influencer marketing. There are more aspects that can be contributed in the research and more independent variables can be included. The sampling size can be increased and the results may differ. The limited sample size does not provide valid cause and effect relation.

5.5. Recommendations

This particular study highlights potential research directions that need to be investigated. While artificial intelligence has been considered as a mediator in this research, other mediating factors may also be considered to determine the positive effects on influencer marketing. In cases where we have employed virtual social presence, perceived quality, and celebrity endorsements as independent variables, they are likely to be substituted by any other factor that directly affects the dependent variable.

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