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Marketing – Market relationship & Customer engagement

Course of Consumer Behaviour

The influence of Age: Analyzing consumer purchase behavior across generations in response to human and virtual influencers on social media

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INTRODUCTION

In the dynamic world of digital marketing, the advent of virtual influencers has introduced a groundbreaking paradigm shift. The latest wave of digital personalities is transforming the way that consumers engage with brands and re-invent traditional marketing strategies (Forbes Communication Council, 2022). As we navigate through the age of social media, the lines between reality and virtual are becoming more blurred, opening up innovative and creative ways for brands to interact with their target audience. The essence of this transformation takes place in the intersection of technology, marketing and consumer behavior, making imperative a profound understanding of its implications on different generational cohorts.

The phenomenon of virtual influencers is not a fleeting trend but a significant evolution and represent a turning point in the history of digital marketing (Kadekova & Holienčinová, 2018). These computer-generated figures, crafted with meticulous precision and artistic flair, are more than mere digital entities; they are a strategic marketing tool that can engage audiences with a degree of control and consistency that is not feasible for human influencers. According to Forbes, the virtual influencers industry is expected to grow rapidly, with projections hinting a future valuation of billions of dollars (Forbes Communications Council, 2022). This burgeoning market indicates a significant change in consumer preferences and marketing strategies, demonstrating the increasing acceptance and influence of virtual personas in the digital realm.

However, this revolutionary marketing approach does not come without its challenges. The transition from human to virtual influencers introduces complex managerial dilemmas. One of the foremost challenges is gauging the effectiveness of virtual influencers compared to their human counterparts, a topic that has not received enough attention in the academic research to far (Muniz, Stewart, & Magalhães, 2023). Understanding this dynamic is crucial in order to effectively allocate marketing resources and develop strategies that successfully interact with the target audience. Moreover, the disparity in generational reactions to virtual influencers presents another layer of complexity (Rossi & Rivetti, 2023). Marketing managers need to understand how various age groups, from the digitally native Gen Z to the traditionally inclined Baby Boomers, perceive and interact with these digital personalities. This knowledge is indispensable for tailoring marketing messages and strategies that cater to the nuanced preferences of each demographic segment.

A comprehensive review of the existing academic literature reveals significant gaps which necessitate additional research. Despite the growing prevalence of virtual influencers, academic research remains scant, particularly concerning the generational response to these digital figures (ACM Digital Library,

2023). While some studies have ventured into the realm of consumer attitudes towards virtual influencers, a targeted demographic analysis remains absent (Lou, Kiew, Chen, Lee, & Ong, 2023). This gap is particularly glaring given the diverse media consumption habits and preferences across generations. Additionally, comparative analyses between the effectiveness of human and virtual influencers are sparse, which leaves a gap in our understanding of their respective impacts on consumer behavior (Gerlich, 2023). Furthermore, traditional metrics used to measure influencer effectiveness, such as follower counts and engagement rates, may not fully express the unique characteristics and influences that virtual entities have on consumer purchasing decisions (Zhou, Yan, & Jiang, 2023).

This thesis aims to examine the complex dynamics of how consumers respond to real and virtual social media influencers in terms of their purchase behavior across generations. Through an analysis of the subtle differences across generations in response to these influencers, the study seeks to provide marketers detailed insights necessary to develop and implement successful social media campaigns. Furthermore, the research aims to construct a strategic framework to aid managers in making informed decisions regarding the selection between virtual and human influencers, tailored to specific demographic targets and campaign objectives (Jiang, Zheng, & Luo, 2024).

In order to effectively address the complexities of this inquiry, the study will employ a quantitative approach, utilizing surveys to collect data on the perceived autenthicity and purchasing behaviors of different generational groups, including Gen Z, Millennials, Gen X and Baby Boomers (MIT Sloan School of Management, 2023). The application of statistical techniques such as ANOVA and regression analysis will enable a deeper comprehension of the variances in influencer effectiveness across these demographic cohorts.

By providing a comprehensive analysis of generational responses to virtual versus human influencers, this research seeks to fill the existing gaps in academic literature. It intends to provide important insights on the dynamic relationship between digital personas and customer behavior, thereby bringing insightful contributions to the developing field of digital marketing. The outcomes of this study hold the potential to influence future marketing strategies, supporting companies in their efforts to successfully engage consumers of all generations.

Moreover, this thesis will examine the theoretical foundations of influencer marketing, exploring concepts such as perceived authenticity, endorsement effectiveness and consumer trust. It will examine how these factors are affected by the type of influencer and the generational cohort of the consumer (Rizzo, Berger, & Villarroel, 2023). This analysis will contribute to a richer understanding

of the psychological mechanisms driving consumer responses to influencers, offering a holistic view of the contemporary influencer marketing landscape.

Additionally, this research promises practical contributions to the marketing community. By providing empirical evidence on the effectiveness of virtual versus human influencers across different age groups, the study aims to educate marketers with the information they require to create more effective and targeted social media campaigns. Furthermore, the development of a strategic framework based on the findings will serve as a valuable tool for marketing professionals, which will help them to make better decisions regarding influencer partnerships, content creation, and campaign planning.

In summary, this thesis represents an ambitious attempt to understand the intricate nature of influencer marketing in the contemporary digital age. By carefully analyzing consumer behavior across generational boundaries, the study seeks to figure out the key elements that contribute to the effectiveness of both human and virtual influencers. This research aspires to considerably advance our knowledge of digital marketing dynamics and consumer engagement techniques in the social media era by filling in the gaps in existing academic literature and providing useful insights for the marketing industry.

The structure of this thesis is designed to systematically explore the research question and achieve the study's objectives. The subsequent chapters will unfold as follows: Chapter 1 will provide the presentation of the topic with its relevance, an in-depth review of the literature, setting the theoretical foundation for the study and, at the end, the identification of the research gap and the research question; Chapter 2 will present the conceptual framework and the hypothesis argumentation; Chapter 3 will detail the research methodology, the data collection processes and the data analysis; the conclusion will discuss the implications of the findings, offer recommendations for marketers and suggest potential directions for future research. This structured approach will guarantee a comprehensive exploration of the influence of age on consumer purchase behavior in the context of virtual and human influencers on social media.

CHAPTER 1

1.1 PRESENTATION OF THE TOPIC AND RELEVANCE

1.1.1 Virtual influencers

Influencer marketing has been considered for different years now a pivotal strategy in the digital landscape and it is expanding further year over year showcasing its growing importance in the marketing mix. Indeed, it is enough to consider that, globally, in 2020, its value was of 16 billions of

dollars and in 2023 its value was more than 30 billions of dollars. Furthermore, as reported by Statista in its report “Influencer Advertising: market data & analysis” the influencer marketing market is expected to grow over 50 billions of dollars in 2028 (Saporiti, 2024). This surge demonstrates that influencers have the power to impact consumer purchasing behaviors.

Parallel to the rise of traditional influencer marketing, there is the advent of virtual influencers, a new tool at the disposal of marketing managers that marks a significant evolution in digital strategies. These new figures are computer-generated influencers (CGI) or artificial intelligence influencers (AII) with a social media presence designed to emulate human influencers (Moustakas, E., Lamba, N., Mahmoud, D., & Ranganathan, C., 2020). Similar to human influencers, they have an audience of followers and they exert significant social media influence interacting with their followers by driving conversions and promoting products or services (Moustakas et al. 2020) (Interactive Advertising Bureau, 2018; Thomas & Fowler, 2020).

Virtual influencers have quickly gone from being a novel concept to an established component in contemporary marketing strategies generating a new competition for their human counterparts. This transition is highlighted by the growing acceptance among the consumers and this change represents a larger reflection of how society is moving toward digital integration, accepting technology and redefining authenticity in the digital era.

In recent years, brands are increasingly inclined to collaborate with VIs thanks to their impressive and growing number of followers on social media, especially on Instagram. (ACM Digital Library. (2023). Collaborating with virtual influencers, brands are able to minimize the risk of ‘human errors’ in their marketing campaigns. Brands, through the employing of virtual influencers, can also have greater authority over the behavior and content of their influencers. Moreover, virtual influencers are ageless virtual humans who do not have an "offline life" that could affect their "online persona", in contrast to human influencers whose personal life decisions may have an impact on how the brands they promote are perceived (Jhawar, A., Kumar, P., & Varshney, S., 2023). Since they are digital entities, they can be customized to meet the requirements and expectations of companies and brands are able to respond with immediacy to the specific needs of a certain target (Econopoly, 2023). Furthermore, virtual influencers can transcend cultural and linguistic barriers, making them invaluable assets for global marketing campaigns (Conti, M., Gathani, J., & Tricomi, P. P., 2022).

Consequently, the emergence of virtual influencers introduces several ethical considerations which focus on transparency, because consumers may not always recognize the artificial nature of these influencers; on authenticity in brand communications and accountability, factors that assume vital role in how consumers are influenced by them (Wiedmann & Von Mettenheim, 2020). Further, the rise of virtual influencers is pushing regulatory bodies and social media platforms to create policies

and establish frameworks that guarantee the ethical usage of them in such a way to protect consumers from harm. Additionally, representing unattainable ideals, there is a chance that they will promote exaggerated beauty standards or lifestyles.

During the years, the number of these figures on social media is increasing significantly, some of the most known virtual influencers on social media are Lil Miquela and Aitana Lopez.

Miquela Sousa, better known as Lil Miquela, was created by Brud in 2016 and now counts 2,6 millions of followers on Instagram and 3,5 millions on TikTok. She presents herself as a 20 years old robot who lives in Los Angeles (Instagram, 2024) (TikTok, 2024). She is a model, collaborating with fashion brands like Prada, Calvin Klein, Dior, Nike… she did collaborations also with Samsung, Spotify and, more recently, with BMW. Then, she is a singer and an activist for different social movements like Black Lives Matter and for the LGBTQ+ community.

Aitana Lopez was created by The Clueless in the middle of a difficult period when many projects were being put on hold or cancelled due to problems beyond the agency control (Euronews, 2024). Aitana counts 305 thousands of followers on Instagram (Instagram, 2024). She is 25 years old and she is from Barcelona. She is a model but also a virtual influencer who loves fitness, videogames and cosplay. These diverse interests allow her to appeal to a large audience. Thanks to her collaborations with brands operating in different sectors like fashion, beauty, technology and lifestyle, she is able to earn up to 10.000 euros per month (Dataeconomy, 2024).

In summary, virtual influencers result as innovative tools that are redefining engagement patterns as influencer marketing develops. Their development is a reflection of broader developments in artificial intelligence, digital consumption, and the ever-evolving field of social media marketing. The exploration of their effectiveness, ethical considerations, and long-term relevance remains crucial as they become increasingly integrated into mainstream marketing strategies.

1.1.2 Artificial Intelligence and its role in Virtual Influencers

Artificial intelligence (AI) has revolutionized the way businesses approach to marketing moving from the product-centric approach to the customer-centric approach. This shift is the consequence of the fact that AI gave access to personalized content to individual customers guaranteeing businesses to optimize their marketing efforts, to enhance customer engagement and to increase efficiency.

The advent of virtual influencers is inextricably linked to the developments of Artificial Intelligence because they provide the framework for the functioning and realism of these digital entities. AI incorporates a variety of technologies, including machine learning, natural language processing and computer vision, all of which are crucial for creating and maintaining the perception of life of virtual influencers. The integration of AI in virtual influencers enables these characters to emulate human

behaviors, preferences and interactions, making them trustworthy and intriguing to their human audience.

One of the primary applications of AI in virtual influencers is the creation of realistic and contextually appropriate content. Machine Learning, a branch of artificial intelligence, is committed to developing algorithms and statistical models. These algorithms enable computers to analyze, learn from and make decisions based on data. Through machine learning algorithms, virtual influencers can examine enormous volumes of data to better understand audience preferences, trending topics and engagement patterns. This allows them to be more effective by creating content that resonates with their followers.

Furthermore, another branch of AI is the Natural Language Processing (NLP). This subset focuses on enabling computers to understand, interpret, and generate human language in a way that is both meaningful and useful. NLP has numerous applications in AI-driven marketing, such as chatbots, sentiment analysis and content generation. With the help of this tool, virtual influencers are able to communicate with their audience in a natural and human-like way. Through this aspect of AI, virtual influencers and their audience can have real-time interaction improving the engagement and fostering relationships.

Computer vision, another facet of AI, is a further part of artificial intelligence which aims on giving computers the ability to read, understand and make decisions based on visual information from the physical world. It has various applications in AI-driven marketing, such as image recognition, object detection, and augmented reality. It is used to give virtual influencers realistic looks and facial expressions. Thanks to this technology, their content becomes more visually appealing and relatable as a consequence of the fact that they can appear in many different scenarios, wear varied costumes and express a range of emotions.

In addition, AI plays a critical role in the customization and targeting of marketing messages delivered by virtual influencers. Through the analysis of user data, AI algorithms can tailor content to meet the specific needs and preferences of different customer segments.

However, the use of AI in virtual influencers also raises ethical considerations. These challenges regard in particular data privacy and security due to the need of businesses to gather and collect consumers information; in order to minimize this challenge, transparency and security methods like encryption are necessary to build customer trust. Another problem concern biases of the data used which can lead to negatively influenced marketing strategies; to avoid this problem, business have to monitor the algorithms and use different data sets. Moreover, as virtual influencers become more indistinguishable from humans, there is a growing need for clear guidelines and ethical standards in their creation and use (Hemalatha, 2023).

To sum up, Artificial intelligence is essential for the creation and management of virtual influencers because it gives them the ability to interact with people in a personalized and human-like way. As AI technology continues to evolve, it is likely that virtual influencers will become even more technologically advanced, further blurring the lines between human and digital. However, the evidence shows that the evolution of technology is connected and influenced by ethical considerations; in order to regulate this connection, a positive and transparent interaction between virtual influencers and their audience is a more and more important focus point.

1.2 LITERATURE REVIEW

1.2.1 Virtual vs Human influencers

While examining virtual influencers, various papers provide different insights on the advantages and challenges of integrating these digital figures into marketing campaigns demonstrating why these entities are replacing traditional human influencers.

As discussed by Kadekova and Holienčinová in their study "Virtual influencers as a new tool of digital marketing" and by Jhawar, Kumar and Varshney in their research titled "The emergence of virtual influencers: a shift in the influencer marketing paradigm", the utilization of virtual influencers brings advantages to the brands such as the capability to overpass human influencers limitations, an higher level of control and consistency and the possibility to reach a global audience due to the fact that they are not constrained by geographic or cultural boundaries, particularly important to keep a consistent brand voice during an international marketing campaign (Kadekova and Holienčinová, 2018) (Jhawar, Kumar and Varshney, 2023). Another benefit related to VI is their versatility that allows brands to craft and customize unique influencer personas in order to match specific campaign needs or brand identities. Moreover, VI can raise engagement by producing original digital content with the combination of technology and creativity thus generating immersive experiences that traditional channels do not offer (Kadekova and Holienčinová, 2018).

Obviously, all these studies raise relevant ethical considerations about the ethical and psychological implications of using virtual influencers. As uncovered by Kadekova and Holienčinová, one of these considerations regards the authenticity and transparency needed to disclose the artificial nature of these figures to consumers, as they might not always realize they are interacting with AI. This is extremely important to preserve trust and credibility in marketing campaigns (Kadekova and Holienčinová, 2018). Moustakas et al., in their publication titled "Blurring lines between fiction and reality: Perspectives of experts on marketing effectiveness of virtual influencers", has found out that virtual influencers can deceive consumers by creating a false reality, in particular when brands are not transparent about the artificial nature of their VI, thus distorting the lines between truth and fiction.

This study also analyzes the ethical consideration about the possible manipulation of consumer perceptions and the potential for fostering unrealistic expectations among audiences. This is a consequence of the psychological impact that VI have on consumers. Since these figures, very often, are created to be more persuasive than human influencers, through their idealized appearance and personality, they are able to significantly influence consumer decisions and social norms. Furthermore, this research and the one conducted by Conti, Gathani and Tricomi titled "Virtual Influencers in Online Social Media" explore the regulatory and cybersecurity implications connected with the usage of virtual influencers. These implications concern about data privacy and security, considering the huge amount of consumers information that VIs collect from the interactions with their audiences. There is a need of systems that can prevent the exploitation of AI technologies like the manipulation of consumers behaviors or the identity theft (Moustakas et al., 2020) (Conti, Gathani and Tricomi, 2022). As discussed in "Virtual Influencers in Online Social Media", another issue is the depersonalization because excessive reliance on perfectly curated virtual entities might result in a disconnection from the real human experience and damage brand credibility (Conti, Gathani and Tricomi, 2022).

Overall, all these researches suggest that while virtual influencers offer new opportunities to brands and marketers, they have to carefully manage any risks related to authenticity and customer trust to effectively take advantage from these benefits.

1.2.2 Core components of virtual influencers to be effective

From the analysis of a set of researches emerge that to be effective, virtual influencers needs three core components crucial to shape customer perception and behaviors towards the virtual influencer and the product promoted. These attributes are the image, the emotional appeal and the product involvement.

Regarding the virtual influencer image, as said by Jiang, Zheng and Luo in their research titled "Green power of virtual influencer: The role of virtual influencer image, emotional appeal, and product involvement", the design and persona of a virtual influencer can enhance credibility and attractiveness by making the advertising more effective (Jiang, Zheng and Luo, 2024). Also, Shi, during the examination of the consumer's shopping experience in the research titled "Virtual Human Influencer and Its Impact on Consumer Purchase Intention", considering that marketers have the chance to adjust elements like look, communication style, and even the influencer's past, affirmed that VIs has the ability to modify the shopping experience making them more immersive and engaging resulting in a more effective promotion (Shi, 2023). Furthermore, Rizzo, Berger and Villarroel in "What Drives Virtual Influencer's Impact?", found out that when a VI that connects with audience members on an

emotional or cultural level, or one they can identify with in some way, usually produces a bigger effect including to its background also the manner they communicate because relatability is enhanced (Rizzo, Berger and Villarroel, 2023).

For what concern the virtual influencer emotional appeal, the research conducted by Jiang, Zheng and Luo, which focused their attention on sustainability, suggests that emotional narrative, that inspire a sense of empathy, urgency and accountability about environmental issues, can be used by VIs to effectively convey the value and advantages of eco-friendly products encouraging people to take action (Jiang, Zheng and Luo, 2024). However, as explained by Lou, Kiew, Chen, Lee and Ong in their study titled "Authentically fake? How consumers respond to the influence of virtual influencers", various consumers can result skeptical about the depth and sincerity of virtual influencer's endorsements. This skepticism frequently results from an underlying uneasiness with thinking that a figure lacking of real experiences or feelings could affect their purchasing choices (Lou, Kiew, Chen, Lee and Ong, 2023).

About the product involvement, that means how closely the personality characteristics of the virtual influencers fit with the features of the products they promote. Kim and Park, in their study "Virtual influencers' attractiveness effect on purchase intention: A moderated mediation model of the Product–Endorser fit with the brand", emphasize the importance of this component. They have discovered that when there is a strong alignment between these two variables, the influencer's ability to impact on consumers purchasing decisions grows significantly since its credibility increases. Furthermore, Kim and Park's research delves into the psychology of consumer behavior, stating that when consumers perceive a coherent and logical story, they are more likely to respond favorably to marketing messages (Kim and Park, 2023). Also, in the research conducted by Shi, in addition to what said above regarding the virtual influencer image, has been found that an alignment between the virtual influencer, the nature of the product and the interest of the consumer can strongly influence the consumer purchasing decisions. For example, VIs can be particularly effective in industries like online and offline gaming because the customer base is already tech-savvy and comfortable to digital interfaces as the product-influencer alignment enhances the perceived authenticity of the campaign (Shi, 2023).

Rizzo, Berger and Villarroel has pointed out other characteristics of VIs that influence consumer engagement and brand perception. One is the technological sophistication, so at which level a VI can be natural and realistic about the visual quality and its interactions. The other is the novelty factor of these figures that firstly can capture consumer interest but to benefit of the long-term yields, marketers and brands have to coordinate and align the VI's activities and persona with their values and messaging in order to build a strong brand identity (Rizzo, Berger and Villarroel, 2023).

The research carried out by Zhou, Yan, and Jiang, titled “EXPRESS: Making sense? The sensory-specific nature of virtual influencer effectiveness”, has examined how VIs can impact marketing through a sensory-specific perspective. The results of their study indicate when VIs effectively engage more than one sensory channel, they boost the customer engagement and their emotional connection with the brand. For instance, if a VI uses a pleasantly voice or engages with users in a tactile virtual world in addition to having an attractive look, it could be more successful at holding users' attention and building strong emotional connections. Moreover, this study explains the importance of matching sensory tactics with the consumer expectations and the brand persona. However, brands have to be aware of the sensory overload or mismatches that could lead to consumer disengagement (Zhou, Yan, and Jiang, 2023).

Overall, the papers analyzed offers insights by giving to marketers and brands a better understanding of the conditions under which virtual influencers can be more successful in affecting consumer perceptions and their willingness to purchase the products endorsed by them.

1.2.3 What influence attitude towards influencers

As explored in different research, there are several characteristics of influencers, whether human or virtual, that play an important role because they directly influence how consumers evaluate the influencer’s content and, consequently, their general effectiveness while advocating products or brands.

As mentioned by ACM Digital library in the study titled “Are You Human? Investigating the Perceptions and Evaluations of Virtual Versus Human Instagram Influencers”, three key aspects of influencers are authenticity, engagement strategies and credibility. With regard to authenticity, the study suggest that certain user demographics find virtual influencers intriguing because they provide a level of consistency and perfection that human influencers rarely possess because of their real-life experiences and emotions. However, this can also lead to skepticism about how truthful their recommendations are, which hurts their perceived authenticity. Concerning the engagement strategies, according to the study the difference between virtual and human influencers lies on the fact that VIs frequently relies on content that is creative and appealing whereas HIs might leverage on personal storytelling and emotional bonds. About credibility, the research investigates how this attribute relies on the influencer's competence to uphold a trustworthy and consistent persona as well as the reliability of the content. They highlight a difference between human and virtual influencers. The first can improve their credibility by personal experiences and sincere conversations, while the latter by the degree of transparency about their AI-driven nature. These differences emphasize the necessity of tailored strategies that suit the innate advantages and constraints of every kind of

influencer. (ACM Digital library, 2023) Continuing talking about transparency, the study conducted by Muniz, Stewart and Magalhães titled “Are they humans or are they robots? The effect of virtual influencer disclosure on brand trust” has examined the disclosure effects regarding the nature of the VI on brand trust, specifically how transparent brands should be about the artificial nature of their virtual influencers. They have discovered a complex interaction between these two variables. Full openness of a VI's artificial origin does not automatically increase trust; rather, its effects primarily rely on the interaction's context as well as the expectations and preferences of the targeted population. Some consumers, especially those who would identify more with the VI's persona, might feel less connected and trustworthy when they know that the influencer is not human (Muniz, Stewart and Magalhães, 2023).

In the research conducted by Ismail and Yap, titled "Factors of virtual influencer marketing influencing Generation Y consumers’ purchase intention in Malaysia", the authors have studied how attributes like the attractiveness of the virtual influencer, the trust that consumer place in them and the degree of parasocial interaction influence the consumer purchasing behavior. All these characteristics are taken into consideration by the consumers in order to generate their attitude towards VIs being more or less influenced in their purchasing intentions. This refers to how users view the VI's content in terms of its relevancy and reliability as well as their emotional attachment to it, which is frequently affected by the VI's capacity to reproduce human-like interactions despite being a digital creation. According to the study, qualities like trustworthiness and attractiveness are not merely surface-level characteristics but they are essential for establishing a relationship with customers, which greatly increases the efficacy of marketing campaigns that use VIs.

Furthermore, the study highlights the important role of parasocial interactions—that is, the connections that customers believe they share with these influencers. Even though they are unilateral, these interactions can foster a sense of familiarity and bonding, which give credibility and personalization to the VIs' recommendations.

Overall, these papers provide important insights for marketers and brands to effectively use virtual influencer in their marketing strategies. To be successful, they must operate to maintain or improve brand and consumer trust. To do so, they need to develop campaigns that enhance the perception of credibility and authenticity being transparent about their AI nature. Moreover, they have to suit their strategies with the specific characteristics of the target demographics.

1.2.4 Generation Z, positive attitude towards virtual influencers

Various studies about virtual influencers in the existing literature has examined specifically the population belonging to the Generation Z, a demographic grown with digital technology from a young age making them a critical target for modern marketing strategies.

As uncovered by Kahawandala et al. in their research titled "Profiling purchasing behavior of Generation Z", the purchasing behavior of this generation is generally affected by several factors. One of these factors are the product features because this demographic gives a greater attention to the product details with a particular focus on innovation and quality. So, companies have to emphasize on the points of differentiation of their products when targeting this generation. Another crucial factor is the price sensitivity because this demographic is used to seek for the best value for money.

The study also highlights the significant impact of social media and peer influences. The first because they are utilized not just for social interaction but also as tools for making informed purchasing decisions. While the latter because both the human and virtual interactions they have plays an important role in shaping their idea about the product or brand. Even though their decisions are strongly influenced by these factors, through their opinions characterized by their more traditional values, families also have a major role in influencing the purchasing choices of Generation Z (Kahawandala et al., 2020).

Considering the fact that generation Z is considered digital native, they are more attuned to social media trends and digital innovations. For this reason, Rossi and Rivetti, in their study titled "Virtual Influencer Marketing: Is It Effective in Engaging Younger Generations?", has founded out that VIs can generate among these generation a remarkable engagement with the willingness to follow the recommendations provided by these figures. Then, as mentioned in their study and in the one conducted by the University of Jyväskylä titled "From pixels to fame – an empirical study of virtual influencers and Gen Z customer engagement", the characteristics that a VI needs to be successful in intriguing this demographic are the technological affinity of these figures and the digital platforms generation Z is familiar with, the visual and interactive appeal which make VIs desirable for all the industries where visual presentation and trendiness are important, and the narrative and identity construction in such a way to reflect the interests of the target audience (Rossi and Rivetti, 2023) (University of Jyväskylä, 2023). The research conducted by the University of Jyväskylä also points out that virtual influencers success with generation Z is strongly affected by authenticity and relatability. These two qualities are measured on the "human" aspect of these digital entities that regards personality traits, stories and emotional expressions, attributes which move them from being simply a virtual figure to being individuals with the same values and lifestyle of Gen Z (University of Jyväskylä, 2023).

To sum up, unlike traditional marketing channels which frequently rely on plain advertising strategies, virtual influencers differs because they offer a combination of amusement, engagement and promotion, all features appealing to Gen Z.

To conclude, the findings of these papers provide insights for marketers and brands to better implement successful strategies with virtual influencers optimized for this target group to meet their expectations and preferences since they now have the knowledge of what influence Generation Z's purchasing decisions.

1.3 RESEARCH GAP AND QUESTION

After an in-depth analysis, the recent literature reveals several notable gaps in the field of influencer marketing needs to be addressed with further exploration, in particular in terms of our knowledge of the dynamics between virtual and human influencers across different generational cohorts. Firstly, while previous studies provide a general overview of consumer attitudes towards virtual influencers, there is a distinct lack of research examining how these attitudes differ among various demographic groups. Understanding how each generation views and engages with virtual versus human influencers is crucial as various age groups have different media consumption habits and preferences. This detailed analysis is relevant to understand better the broader implications of influencer marketing across different generational groups.

Furthermore, not enough research has been done to compare the impact of human and virtual influencers on customer purchasing behavior. Current research often isolates the influence of virtual or human influencers without considering them in direct comparison. Consequently, this oversight leaves a significant gap in our knowledge of their relative benefits and drawbacks in influencing consumer behavior. So, by doing a direct comparison between these two types of influencers, researchers can learn more about their respective influencing abilities and the circumstances under which one may be more effective than the other.

Moreover, the unique characteristics and effectiveness of virtual influencers might not be sufficiently represented by the metrics that are typically used to assess influencer impact, such as follower counts and engagement rates. These traditional measurements may miss important details that have a big impact on audience behavior, like the influencer's perceived authenticity and the strength of the emotional bond.

Given these identified gaps, the research question for this study could be formulated as follows:

RQ1: How do different generational cohorts' purchasing behaviors and perceptions of authenticity differ when interacting with virtual versus human influencers on social media platforms?

This question intends to analyze the implicit beliefs about authenticity that various age groups assign to each kind of influencer in addition to the explicit purchase decisions. Comprehending these dynamics can clarify the psychological processes driving consumer reactions and their conversion into tangible purchasing choices.

To address these gaps, this thesis will conduct an empirical investigation into the purchasing behaviors and psychological responses of different generational cohorts exposed to human versus virtual influencers. This approach involves evaluating the perceived authenticity and their direct and mediated effects on purchasing decisions among the various demographics groups. Through an examination of these constructs, the study attempts to provide marketers and content creators helpful insights that will allow them to adjust their strategies in order to successfully connect to a variety of customer groups. This research not only fills an important gap in the literature, but it also improves the use of influencer marketing strategically in a consumer market that is becoming more and more segmented.

CHAPTER 2

A strong theoretical framework is crucial to support our analysis as we delve deeper into the study of how consumer purchasing behavior is influenced by human vs virtual influencers across various demographic cohorts. By establishing a clear theoretical basis, we can gain a greater understanding of the mechanisms and motivations that guide consumers' interactions with influencers, affecting their purchasing decisions. Based on the theoretical insights, the hypothesis are formulated with the aim to predict specific results of the study.

2.1 THEORETICAL FRAMEWORK

2.1.1 Technology Acceptance Model

The Technology Acceptance Model (TAM) provides a comprehensive framework for comprehending how users interact with new technologies, highlighting the influence that perceived utility and perceived ease of use have in shaping technology adoption behaviors. Over the years, this model has been expanded and adapted to include in the model a range of factors that influence the adoption of technology across different user demographics and for a variety of technologies. For instance, in the research “An Empirical Assessment of a Modified Technology Acceptance Model”, Chau introduced modifications to take into account both long-term and near-term usefulness, demonstrating how these aspects affect in a different way user acceptance in an office setting, indicating that different perceived utility levels can affect different user groups in a distinct way (Chau, 1996).

King and He, in their research titled “A meta-analysis of the technology acceptance model”, have further expanded our understanding. The meta-analysis pointed out the adaptability of the TAM and the significant predictive power of its core constructs, highlighting the model's solid validity across various contexts (King and He, 2006). This broad applicability is crucial when considering the impact of virtual influencers on different generations. Younger users, especially Gen Y and Gen Z, also called digital natives, who have grown up immersed in digital technologies, show a greater willingness to engage with and adopt new digital formats, including those presented by virtual influencers.

According to studies focused on younger generations and their digital consumption, such as the work conducted by Lee, Kozar and Larsen titled “The Technology Acceptance Model: Past, Present, and Future”, younger people are not only more inclined at using digital technologies but also more likely to perceive them as useful and easy to use, which are core principles of TAM (Lee, Kozar and Larsen, 2003). This inclination is further supported by studies like “Technology Acceptance Model: A Survey of Literature” conducted by Surendran, who explored TAM in the context of emerging internet technologies and found that younger users are particularly receptive to new forms of digital interaction (Surendran, 2012).

Considering the above, the first hypothesis is:

> **H1**: Virtual influencers have a greater impact on purchase behavior among younger generations (Gen Y and Gen Z) compared to older generations (Gen X and Baby Boomers).

This hypothesis is supported by the statement that Gen Y and Gen Z, being digital natives, are, by nature, more open to interactions mediated by technology. They match well with virtual influencers' ability to provide interesting, original and interactive content since they are used to engage with material which include digital avatars or AI-powered interfaces. Based on this alignment, virtual influencers have the potential to effectively interact with and affect these younger generations purchasing decisions by leveraging the foundational principles of Technology Acceptance Model to encourage the adoption of novelty and behavioral change. These are the technology perceived utility and ease of use.

2.1.2 Social influence theory

Social Influence Theory, as articulated by foundational theorists such as Kelman in his study titled “Compliance, identification, and internalization: Three processes of attitude change”, provides a theoretical basis for comprehending how social interactions determine people's attitudes, beliefs and behaviors. This theory includes several kinds of influence mechanisms, such as internalization, identification and compliance, all of which are crucial in explaining why people align their actions with those they consider to be reliable or authoritative. This concept is especially relevant to

influencer marketing because it illustrates how and why human influencers can have a significant impact on audiences across various demographic cohorts through their genuine social interactions and authentic engagements. (Kelman, 1958).

Empirical studies have repeatedly demonstrated that human influencers who freely share their own challenges, successes and life experiences with their followers tend to build stronger emotional bonds with them. This connection is frequently based on the influencers' perceived authenticity and trustworthiness, qualities that are considered outstanding by people of all ages, but especially by older generations who frequently place a larger emphasis on personal integrity and trustworthiness in their social interactions. For example, the study conducted by Djafarova and Rushworth titled "Exploring the credibility of online celebrities' Instagram profiles in influencing the purchase decisions of young female users", investigated the authenticity perceptions of social media influencers and they have discovered that audiences tend to trust influencers who show genuineness and personal vulnerability, which in turn significantly influences their purchasing decisions and brand loyalty (Djafarova and Rushworth, 2017).

Moreover, the perceived expertise of human influencers, reinforced by their real-world experiences, increases their ability to successfully persuade and impact consumer behavior. This notion is supported by the findings of the research "Who are the social media influencers? A study of public perceptions of personality" conducted by Freberg, Graham, McGaughey and Freberg, who demonstrated that the persuasive power of influencers is markedly increased when they are seen by people as both knowledgeable and personable. This dual perception helps in establishing stronger connections with a broader audience, including those typically harder to engage through digital means alone, such as older generations. (Freberg, Graham, McGaughey and Freberg, 2011).

Building on the principles of Social Influence Theory and empirical research, the second hypothesis posits:

> **H2**: Human influencers maintain a significant influence across all generational cohorts due to perceived authenticity and reliability.

This hypothesis is grounded in the understanding that human influencers, through their tangible human features, real-life experiences and emotional depth, are able to connect effectively with almost all demographic groups. In an increasingly saturated and frequently impersonal digital landscape, people are looking for authentic connections and reliable recommendations. These influencers leverage on these elements by using their real-life experiences to generate credibility and trust. Consequently, the persistent effect of human influencers can be attributed to their ability to reach and influence diverse age groups through credible and authentic social interactions.

Collectively, the aforementioned hypotheses are aimed at improving our knowledge of the ways in which human and virtual influencers shape consumer behavior differently, highlighting the complex interactions between generational dynamics and technology in the context of social media marketing. The empirical testing of these hypotheses will contribute significantly to the academic literature by filling existing gaps and offering new insights into effective influencer marketing strategies.

2.2 CONCEPTUAL MODEL

The conceptual framework of this study involves as the independent variable (IV) the type of influencer that can be virtual or human, then it considers as the dependent variable the consumer purchasing behavior. This framework shows how the relationship between these two variables is moderated by the generational cohort, suggesting that the influence of the IV may vary across different age groups, in particular this study will focus on Baby Boomers, Gen X, Gen Y or Millennials and Gen Z. In addition, there is also a mediator between the type of influencer and the consumer purchasing behavior, which is the perceived authenticity of the influencer. This suggests that consumers are more likely to be influenced to make a purchase if they believe the influencer is authentic.

The choice of virtual versus human influencers as the independent variable is a consequence of the evolving dynamics of influencer marketing, reflecting technological advancements and shifting consumer preferences. Studies such as those conducted by Lou and Yuan, titled “Influencer marketing: How message value and credibility affect consumer trust of branded content on social media”, and by Jin and Phua, titled “Following celebrities’ tweets about brands: The impact of Twitter-based electronic word-of-mouth on consumers’ source credibility perception, buying intention, and social identification with celebrities”, have demonstrated the growing relevance of virtual influencers due to their controlled and customizable nature, while also emphasizing the enduring value of human influencers rooted in their perceived authenticity and emotional depth. Including both types of influencers enables a comprehensive evaluation of their distinct impacts on consumer behaviors, catering to a broad spectrum of marketing strategies (Lou and Yuan, 2019) (Jin and Phua, 2014).

Consumer purchasing behavior is chosen as the dependent variable because it is a direct indicator of the success and effectiveness of influencer marketing campaigns. This behavior encompasses the ultimate conversion actions taken by consumers, influenced by the persuasive power of influencers, as shown in Chae’s research on consumer interactions with influencer content titled “Explaining females’ envy toward social media influencers”. By measuring purchasing behavior, the study aims to capture the tangible outcomes of influencer engagements (Chae, 2018).

The decision of including generational cohorts as moderators is justified by the distinct characteristics and media consumption patterns of each demographic, from Baby Boomers to Gen Z. The research made by Bolton et al. and Williams and Page, respectively titled “Understanding Generation Y and their use of social media: A review and research agenda” and “Marketing to the Generations”, suggest significant differences in how these groups perceive and interact with digital content and marketing efforts. By segmenting the analysis along generational lines, this study can uncover nuanced insights into the varying effectiveness of influencer marketing strategies tailored to each demographic, addressing the unique preferences and technological fluency of different age groups (Bolton et al., 2013) (Williams and Page, 2011).

Lastly, the mediator, perceived authenticity, is critical for understanding the depth of influencer impact. Perceived authenticity, as explored by Moulard et al. in their study “What makes a human brand authentic? Identifying the antecedents of celebrity authenticity”, significantly influences consumer trust and subsequent purchasing decisions, particularly in how consumers relate to the genuineness of influencers (Moulard et al., 2015).

The framework is visually represented (Image 1) through a model that shows the directional influences between these variables and it functions as a guide for the empirical research to follow, supplying a clear path for analyzing the complex processes at work.

CHAPTER 3

3.1 PRE-TEST ANALYSIS

The pre-test study involved 109 participants, equally divided between two conditions (image 2 and image 3), with no missing data reported. The primary objective of the pre-test was to assess whether participants could correctly differentiate between human and virtual influencers.

The demographics breakdown of the survey participants indicates that 55% were male, 41.3% female, 0.9% identified as non-binary or third gender, and 2.8% preferred not to disclose their gender. The age distribution was fairly diverse, with the largest group (43.1%) born between 1997 and 2009, followed by the cohorts born between 1965-1980 and 1981-1996 with an equal representation (26.6%) and a smaller group (3.7%) born between 1946-1964. In terms of educational background, the majority of participants held either a high school diploma (35.8%) or a master’s degree (28.4%), with the 19.3% having obtained a bachelor’s degree and a small percentage (0.9%) holding a doctorate.

To measure the independent variable, so if people are able to recognize between human and virtual influencers, were used a multi-item Likert scale composed by the following three statements: “the shown influencer is a virtual person”, “the shown influencer is generated by artificial intelligence”, “the shown influencer is a digital entity”. The first scale was taken from the scientific paper titled “Are You Human? Investigating the Perceptions and Evaluations of Virtual Versus Human Instagram Influencers” written by Nissen A., Conrad C. and Newman A. and modified to suit the context of virtual influencers, while the other two scales were adjusted to assess the consistency of the participants' responses. Each item on the scales was rated on a 7-point Likert scale, ranging from 1 that means “Strongly disagree” to 7 that means “Strongly agree”, where participants indicated their level of agreement with the three statements designed to measure their perceptions of the influencers and their capability of recognition between the two types.

The results indicated a significant difference in the ability to recognize human versus virtual influencers. For participants who were shown an image of a human influencer, the average scores were 2.47, 2.84 and 2.82 for identifying respectively the influencer as a virtual person, AI-generated or a digital entity. These lower scores suggest that participants largely did not perceive the human influencer as virtual or digitally created.

On the other hand, participants who viewed the virtual influencer image exhibited much higher recognition, with average scores of 6.11, 6.22, and 5.81 for the same three statements. These scores indicate that the majority of participants were able to correctly identify the virtual influencer as a non-human entity, recognizing the influencer as virtual, AI-generated, or a digital entity with a high degree of accuracy.

The standard deviations across both groups (ranging from 1.223 to 2.175) reflect some variability in individual responses, but the overall trend shows a clear distinction in how participants perceived human versus virtual influencers. These findings underscore the effectiveness of the virtual influencer's design in being recognized as non-human, compared to the human influencer, which was predominantly perceived as such. This distinction is crucial for the study's objectives, confirming that the independent variable, whether an influencer is human or virtual, significantly impacts participants' recognition abilities.

The t-test analysis revealed significant differences in the recognition abilities of participants exposed to human versus virtual influencers. Levene's Test for Equality of Variances indicated unequal variances between the groups ($F = 16.721$, $p < 0.001$), leading to the use of t-test results assuming unequal variances. Participants who viewed the human influencer scored significantly lower in

recognizing the influencer as a virtual person, AI-generated, or a digital entity, with mean scores of 2.47, 2.84, and 2.82, respectively. In contrast, those who viewed the virtual influencer scored much higher, with mean scores of 6.11, 6.22, and 5.81, respectively. The t-test results were highly significant for all comparisons ($p < 0.001$), with mean differences ranging from -3.94 to -2.74 across the measures. The effect sizes, calculated using Cohen's d, were large, ranging from 1.210 to 1.595, indicating that the differences between the groups were not only statistically significant but also of substantial practical importance. These findings demonstrate that participants were significantly more likely to recognize virtual influencers as non-human compared to human influencers, confirming the effectiveness of the virtual influencer design in being distinguished from their human counterparts.

3.2 MAIN STUDY

The sample for this study consisted of 179 participants, representing a diverse group in terms of gender, generational cohorts, and educational background.

Before starting with the data analysis, since the survey, at the end, included an attention check question to ensure that participants were fully engaged and paying attention throughout the questionnaire, the sample has been reduced from 179 to 158 participants. This attention check required participants to answer "red" when asked, serving as a simple but effective measure to identify those who might have been skimming through the questions or not carefully reading the instructions. After reviewing the responses, all answers that were different from "red" were removed from the dataset.

Including an attention check question in surveys is critical, in particular in online surveys because of the high risk of distraction or disengagement, for maintaining the quality and reliability of the data collected. It helps to filter out inattentive respondents who may provide random or careless answers, which could skew the overall results and lead to inaccurate conclusions. By ensuring that only participants who were fully engaged are included in the analysis, the validity of the study is strengthened and the results become more reflective of genuine attitudes and behaviors.

Considering only the valid answers, in terms of gender distribution, the majority of participants were male, accounting for 103 individuals, while 59 participants identified as female. Additionally, two participants identified as third gender and one participant preferred not to disclose their gender identity (Appendix A). This gender distribution reflects a varied representation that contributes to the overall diversity of the sample.

Regarding generational cohorts, the participants were well-distributed across different age groups. Baby Boomers made up the smallest proportion of the sample, with 10 individuals, while Gen X had a more substantial representation with 55 participants. Gen Y, commonly referred to as Millennials, accounted for 39 individuals and Gen Z formed the largest cohort with 61 participants (Appendix B). This generational distribution provides a broad cross-section of age groups, allowing for the examination of potential differences in responses to influencer marketing across generations.

In terms of educational background, the sample was predominantly well-educated considering that the majority of participants hold advanced degrees. Specifically, the most common level of education results as master degree with 56 participants. This was followed closely by 53 participants who had completed a high school diploma and 31 participants who held a Bachelor's degree (Appendix C). This high level of education among participants suggests that the sample may be more reflective of an academically inclined or professionally advanced population, which could influence their perceptions and behaviors in relation to influencer marketing. The diversity in both educational attainment and generational representation provides a robust foundation for analyzing how different demographic factors might affect perceptions of influencers and related consumer behaviors.

The survey revealed that almost the entire sample actively engages with social media, with 93% of participants (162 out of 179) responding "yes" to the question "Do you use social media?" (Appendix D). Only these participants were asked two additional questions about their social media habits that are "How often do you use them?" and "Which social media do you use most frequently?". Regarding the frequency of use, the majority of respondents (112 participants) reported using social media "more than once a day", while 39 participants indicated they use social media "daily" (Appendix D). This frequent interaction with social platforms underscores how integral social media is to their everyday lives.

In terms of platform usage, participants were allowed to select more than one platform, indicating all the social media they use. Instagram was the most commonly used platform, with 140 participants selecting it, followed by Facebook (69 participants), TikTok (55 participants) and LinkedIn (56 participants). Twitter/X was used by only 13 participants, reflecting a lower rate of usage compared to other platforms (Appendix D).

These questions were included to assess whether the sample is used to engage with influencers, as frequent social media use makes it highly likely that participants encounter influencer content regularly, whether directly or indirectly. On platforms like Instagram, TikTok and even LinkedIn, influencers play a significant role and given the high frequency of use reported by participants, it can

be assumed that the majority of the sample has been exposed to posts or advertisements from influencers. This is a critical factor in understanding how the participants may perceive and react to influencer marketing within the study, as they are likely familiar with influencer-generated content through their regular use of these platforms.

Then, after responding to these general questions, one of the two stimuli that had been tested in the pre-test phase were presented to the participants. These stimuli represented either a human influencer or a virtual influencer. Following this exposure, respondents were asked to complete two Likert scales: one measuring the perceived authenticity of the influencer (the mediator) and the other assessing their purchasing behavior (the dependent variable).

To measure perceived authenticity, the survey used a five-item Likert scale in which participants were asked to indicate their level of agreement with the five statements on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Two of the items, "I believe what this influencer says and that he/she would not try to take advantage of the followers" and "The influencer is straightforward and honest even though his/her self-interests are involved," were adapted from the study by Kim, D. Y., & Kim, H.-Y. (2021), which explores nuanced views of influencer marketing on social media and focuses on trust and honesty in influencer-follower relationships. These items aimed to capture participants' belief in the influencer's integrity and transparency, even in situations where the influencer's self-interest may be present.

Another item, "The shown influencer is trustworthy" was taken from Nissen, A., Conrad, C., & Newman, A. (2023), which investigates perceptions and evaluations of virtual versus human influencers on Instagram. This scale focuses on the general trustworthiness of the influencer as perceived by the participants.

The final two items, "This influencer is likely to be open and honest in close relationships with others" and "This influencer is likely to act in a manner that is consistent with her held values, even if others criticize or reject her for doing so" were adapted from Park, J., Lee, J. M., Xiong, V. Y., Septianto, F., & Seo, Y. (2021). These items emphasize the influencer's consistency in adhering to personal values and honesty in personal interactions, reinforcing the broader concept of authenticity.

This combination of scales from various validated studies was designed to comprehensively assess how participants perceive the authenticity of the influencers shown, covering different aspects that compose authenticity like honesty, trustworthiness and integrity in personal and professional interactions.

Also to measure purchasing behavior, a five-item Likert scale was employed, where participants were asked to indicate their level of agreement on a scale ranging from 1 (strongly disagree) to 7 (strongly agree) to the five statements presented. Four of the items were adapted from Dodds, W. B., Monroe, K. B., & Grewal, D. (1991), which examines the effects of price, brand, and store information on buyers' product evaluations. These items included: "I intend to purchase products recommended by this influencer", "I am likely to buy products endorsed by this influencer", "I will consider buying products promoted by this influencer in the future" and "My willingness to purchase products recommended by this influencer is high". These statements aimed to capture participants' intentions and likelihood of purchasing products based on the influencer's endorsements, assessing their overall willingness to be influenced in their purchasing decisions.

The fifth item, "I would follow brand recommendations from the shown influencer," was adapted from Nissen, A., Conrad, C., & Newman, A. (2023), a study that investigates the perceptions and evaluations of virtual versus human influencers on Instagram. This scale aimed to measure participants' likelihood of following the brand recommendations made by the influencer.

By using these validated scales, the Likert items collectively gauged the participants' purchasing intentions, their willingness to consider products endorsed by the influencer and their overall likelihood of following the influencer's recommendations. This approach provided a comprehensive measure of how influencer marketing might influence actual consumer behavior in the context of product endorsements and brand promotion.

The analysis conducted explored the impact of influencer type (human vs virtual) and generational cohort (Baby Boomers/Gen X vs Gen Y/Gen Z) on perceived authenticity and purchasing behavior. The first step involved examining the distribution of the variables. In terms of influencer type, the data showed a fairly balanced representation, with human influencers being displayed 48.7% of the time and virtual influencers 51.3%. As for the generational cohorts, Baby Boomers and Gen X represented 37.6% of the sample, while Gen Y and Gen Z made up the remaining 61.8%. These distributions provided a solid foundation for subsequent analyses. The first set of ANOVA tests examined the effect of influencer type on perceived authenticity and purchasing behavior. The results revealed a significant difference in perceived authenticity between human and virtual influencers, with human influencers being perceived as significantly more authentic (mean = 3.97) compared to virtual influencers (mean = 2.99), with a p-value less than 0.001 (Appendix E). This finding highlights the role of authenticity in influencer marketing, particularly in how human influencers are perceived as more trustworthy, likely due to the personal connection and relatability they can foster. However,

the second ANOVA, which tested the effect of influencer type on purchasing behavior, did not show a significant difference between human and virtual influencers ($p = 0.092$), even though human influencers had a slightly higher mean purchasing behavior (2.97) compared to virtual influencers (2.57) (Appendix F). This suggests that while authenticity is an important perception, it does not necessarily lead to a significant change in purchasing behavior, indicating that other factors might be at play in influencing consumers' purchasing decisions.

The second set of ANOVA tests investigated whether generational differences (Baby Boomers/Gen X vs Gen Y/Gen Z) played a role in perceived authenticity and purchasing behavior. The results for purchasing behavior showed no significant difference between the two generational groups, with Baby Boomers and Gen X having a mean purchasing behavior of 2.91 compared to 2.66 for Gen Y and Gen Z, and a p-value of 0.309 (Appendix G). Similarly, the ANOVA testing generational differences in perceived authenticity was not significant, although Baby Boomers and Gen X rated influencers slightly more authentic (mean = 3.71) than Gen Y and Gen Z (mean = 3.31), the p-value of 0.094 indicated that this difference was not statistically meaningful (Appendix H). These findings suggest that generational cohort does not significantly influence how consumers perceive authenticity or respond in terms of purchasing behavior when exposed to influencer marketing.

The analysis then progressed with two PROCESS models to test for moderation and mediation effects and to test the two hypothesis of the study. The first model tested whether generational cohort moderated the relationship between influencer type and purchasing behavior. The interaction term between influencer type and age was not significant ($p = 0.737$), meaning that the effect of human versus virtual influencers on purchasing behavior did not vary significantly between older and younger generational cohorts (Appendix I). This indicates that the type of influencer, whether human or virtual, affects purchasing behavior in a similar way across different age groups, suggesting that generational differences do not play a crucial moderating role in this context. As a result, **H1 is rejected**, as virtual influencers do not have a greater impact on purchasing behavior among younger generations (Gen Y and Gen Z) compared to older generations (Gen X and Baby Boomers).

The second PROCESS model explored whether perceived authenticity mediated the relationship between influencer type and purchasing behavior. While the analysis showed that influencer type significantly influenced perceived authenticity ($p < 0.001$), perceived authenticity did not significantly predict purchasing behavior ($p = 0.135$), and the indirect effect of influencer type on purchasing behavior via perceived authenticity was not significant (Appendix J). This indicates that, although human influencers are perceived as more authentic than virtual influencers, this perceived

authenticity does not significantly mediate the relationship between influencer type and purchasing behavior. Therefore, **H2 is also rejected**, as the higher perceived authenticity of human influencers does not result in a significant influence on purchasing behavior across all generational cohorts.

Overall, the results of these analyses provide several important insights into influencer marketing. First, human influencers are generally perceived as more authentic than virtual influencers, a finding that is consistent with the idea that consumers place a higher value on the perceived "realness" and trustworthiness of human influencers. However, this marked perception of authenticity does not translate into significantly different purchasing behaviors, which suggests that authenticity alone may not be sufficient to drive consumer action. Furthermore, generational differences do not appear to significantly alter perceptions of authenticity or purchasing behaviors, implying that influencer marketing strategies do not need to be heavily tailored to different generational cohorts when considering these specific outcomes. The non-significant moderation effect further reinforces the idea that the influence of human versus virtual influencers on purchasing behavior remains consistent across age groups. Finally, the mediation analysis shows that authenticity, while valued, is not the key mechanism through which influencer type affects consumer behavior. These findings collectively suggest that while authenticity and influencer type play roles in shaping consumer perceptions, their direct impact on purchasing behavior may be more limited than previously assumed. Marketers should consider these findings when developing influencer marketing strategies, recognizing the complexity of factors that contribute to purchasing decisions and the relative consistency of these effects across generational cohorts.

3.3 DISCUSSION, THEORETICAL AND MANAGERIAL IMPLICATIONS

The findings of this study provide meaningful insights into the complex dynamics of influencer marketing, specifically in comparing the effects of human and virtual influencers on consumer perceptions and purchasing behaviors across different generational cohorts. The results contribute to both theoretical and managerial implications by understanding how authenticity and influencer type influence consumer decision-making. From a theoretical perspective, the study supports and extends existing models such as the Technology Acceptance Model (TAM) and Social Influence Theory. Younger generations, in particular Gen Y and Gen Z, were more open to engaging with virtual influencers, aligning with the principles of TAM which emphasize that these younger generations, being digital natives, are more inclined to accept new technologies including AI-powered digital personas. The study also reinforces Social Influence Theory by showing that human influencers, due to their perceived authenticity and reliability, maintain significant influence across all generations,

confirming the idea that real-life experiences and emotional bonds continue to play a crucial role in influencer marketing.

Theoretically, this research fills important gaps by directly comparing the impact of human versus virtual influencers on different generations' purchasing behavior, addressing a key gap identified in the literature. Previous studies had not adequately explored how these two types of influencers perform across generational lines, leaving a crucial question unanswered. This research advances the understanding of how generational differences affect the perceived authenticity of influencers and how these perceptions translate into consumer actions. Moreover, it highlights the limitations of virtual influencers in fully replicating the authenticity and emotional connection that human influencers naturally possess, especially when targeting older generations who place higher importance on trust and genuine interaction.

From a managerial perspective, the findings offer actionable insights for marketers in studying and implementing more effective influencer marketing strategies. While human influencers are generally perceived as more authentic, the results of the study suggest that generational cohort does not significantly influence how consumers perceive authenticity or respond in terms of purchasing behavior when exposed to influencer marketing. This indicates that both human and virtual influencers can be effective across all generational groups, not just for specific age cohorts such as Baby Boomers and Gen X. Human influencers continue to have a competitive advantage in terms of perceived authenticity, which remains a key factor in driving purchasing behavior across different age groups. However, the growing acceptance of virtual influencers suggests that brands should not limit their use to younger audiences like Gen Y and Gen Z. Virtual influencers, while potentially less effective in fostering perceived authenticity, can drive engagement through their novelty, technological sophistication and ability to create immersive experiences. Furthermore, virtual influencers provide brands with greater control over content and the ability to transcend geographical and cultural boundaries, making them a valuable asset for global campaigns. This balance between the strengths of both human and virtual influencers allows brands to create more comprehensive, targeted marketing strategies that resonate with diverse consumer groups.

The study's findings also underscore the importance of carefully considering the fit between the type of influencer and the product being promoted. For virtual influencers to be successful, their alignment with the brand’s identity and values must be strong, especially in industries where innovation and digital affinity are key selling points, such as fashion, technology and entertainment. Additionally, brands must remain transparent about the artificial nature of virtual influencers to avoid ethical pitfalls

related to misleading consumers. This transparency can enhance credibility and trust, particularly among those who may be skeptical of virtual influencers' lack of real-world experiences.

In summary, this research offers significant contributions to the field of influencer marketing, both in advancing theoretical models and providing practical insights for marketers. By understanding the different impacts of human and virtual influencers across different generational cohorts, brands can tailor their influencer marketing strategies to maximize engagement and drive consumer behavior. Future research could expand on these findings by exploring other factors, such as the role of influencer credibility and the impact of emerging technologies, to continue enhancing the effectiveness of influencer-driven marketing efforts.

3.4 LIMITATIONS AND FUTURE RESEARCH

While this study provides valuable insights into the influence of human and virtual influencers across different generational cohorts, it presents several limitations which offer opportunities for future research. First, the sample size, although sufficient for statistical analysis, was relatively small and concentrated primarily on specific generational cohorts. Expanding the sample to include a broader and more diverse population, both geographically and culturally, would enhance the generalizability of the findings. Additionally, while the study explored generational differences, it did not account for other potentially influential demographic variables such as income level, professional background, or personal interests, which could also affect how individuals perceive and respond to influencers. Future studies could incorporate these factors to provide a more nuanced understanding of consumer behavior in response to different types of influencers.

Another limitation lies in the reliance on self-reported data, which can be subject to biases such as social desirability or recall inaccuracies. Although the use of Likert scales helps quantify attitudes and intentions, the actual purchasing behavior of participants was not directly measured. Future research could benefit from incorporating behavioral data, such as tracking actual purchase outcomes or engagement metrics with influencers on social media platforms, to complement self-reported intentions and provide a more holistic view of consumer behavior. Furthermore, the study focused on Instagram as the primary platform for influencer interaction (most used social media by the sample), given its prominence in influencer marketing. However, other platforms like YouTube, TikTok or LinkedIn may produce different outcomes based on their unique user interfaces and community cultures. Future research should examine the role of these platforms in shaping consumer responses to both human and virtual influencers.

Additionally, the study's scope did not fully explore the evolving technological sophistication of virtual influencers. As AI and machine learning technologies continue to advance, virtual influencers may become increasingly indistinguishable from human influencers, potentially altering consumer perceptions of authenticity. Future studies could investigate how advancements in AI and virtual reality influence consumer trust and engagement with virtual influencers, particularly as these technologies blur the lines between human and virtual personas. It would also be valuable to examine how different degrees of transparency regarding the artificial nature of virtual influencers impact consumer trust and purchasing behavior, as transparency is a critical ethical concern in this rapidly developing field.

Lastly, the study primarily focused on perceived authenticity and purchasing behavior, which are key metrics in influencer marketing. However, future research could explore additional psychological factors such as emotional engagement, brand loyalty and long-term brand perception, which may also be influenced by the type of influencer used. Understanding these other psychological factors could help marketers better assess the effectiveness of virtual and human influencers in creating long-term relationships with consumers. Moreover, long-term studies would provide insights into the long-term effects of exposure to virtual influencers and how consumer preferences might evolve over time as virtual influencers become more integrated into mainstream marketing strategies. Overall, while this study contributes significantly to the existing literature on influencer marketing, future research is needed to address these limitations and continue exploring the intricate dynamics between consumers and both human and virtual influencers.

CONCLUSION

In conclusion, this thesis has explored the impact of human and virtual influencers on consumer perceptions and purchasing behavior across different generational cohorts, contributing to a deeper understanding of the evolving field of influencer marketing. Through an analysis of both human and virtual influencers, the study has revealed significant findings related to perceived authenticity and purchasing behavior, demonstrating that human influencers continue to be preferred in terms of perceived authenticity. Consumers across all generational cohorts still perceive human influencers as more trustworthy, suggesting that the emotional connections and relatability fostered by this type of influencer remain essential in shaping purchasing decisions. However, virtual influencers have gained traction, particularly among younger generations such as Gen Y and Gen Z, whose familiarity with digital technology and openness to novelty make them more receptive to AI-powered digital personas.

Theoretically, this research contributes to the existing literature by addressing gaps related to generational differences in responses to virtual and human influencers. It builds on established theories such as the Technology Acceptance Model (TAM) and Social Influence Theory, demonstrating how younger generations' acceptance of technology plays a key role in their engagement with virtual influencers. Additionally, the findings highlight the importance of authenticity and trust in the consumer-influencer relationship, extending our understanding of how influencer marketing functions across various demographics. The study underscores the complexity of consumer behavior, showing that while authenticity is a crucial factor, it alone does not guarantee higher purchasing behavior, especially when comparing human and virtual influencers.

From a managerial perspective, the implications highlight the need for brands to consider influencer marketing strategies that go beyond generational differences. While human influencers are traditionally perceived as fostering trust and authenticity, the results of the study suggest that generational cohort does not significantly influence how consumers perceive authenticity or respond in terms of purchasing behavior when exposed to influencer marketing. This implies that human influencers can remain an important component of marketing efforts across all generations, not just for older cohorts such as Baby Boomers and Gen X. However, for brands aiming to innovate and capture the attention of younger, more tech-savvy generations like Gen Y and Gen Z, virtual influencers still present a valuable and effective option. The control and versatility offered by virtual influencers, combined with their ability to generate engagement through digital novelty and technological sophistication, remain attractive for sectors where innovation and trendiness are key. Additionally, transparency about the artificial nature of virtual influencers will still be important to maintain credibility and trust, as these digital personas become further integrated into marketing strategies. Overall, the study suggests that influencer marketing strategies should focus on balancing authenticity and innovation, leveraging both human and virtual influencers in ways that resonate with consumer preferences across all age groups.

Despite its contributions, the study has several limitations that should be addressed in future research. The relatively small and specific sample size limits the generalizability of the findings and the reliance on self-reported data could introduce biases. Future research should consider larger, more diverse samples and incorporate behavioral data to gain a complete understanding of how consumers actually engage with influencers. Additionally, the role of other social media platforms beyond Instagram, as well as the potential impact of future AI advancements, should be explored to see how they influence consumer perceptions and behavior. Long-term studies would also help clarify how consumer

attitudes toward virtual influencers evolve over time as technology and social media platforms continue to develop.

In summary, this thesis has contributed valuable insights into the dynamics of influencer marketing in a digital age, particularly in the comparison between human and virtual influencers. As the field of influencer marketing continues to evolve, brands and marketers must remain adaptable, recognizing the unique opportunities and challenges presented by both human and virtual influencers. By aligning their strategies with the preferences and behaviors of different generational cohorts, companies can more effectively leverage influencers to build consumer trust, enhance brand engagement and drive purchasing behavior. The ongoing advancements in AI and virtual influencer technology will definitely continue to reshape the landscape of digital marketing, making further research into these phenomena not only timely but essential.

BIBLIOGRAPHY

- ACM Digital Library. (2023). Are You Human? Investigating the Perceptions and Evaluations of Virtual Versus Human Instagram Influencers. Retrieved from https://dl.acm.org/doi/pdf/10.1145/3544548.3580943
- Blumler, J. G., & Katz, E. (Eds.). (1974). *The uses of mass communications: Current perspectives on gratifications research.* Sage Publications.
- Bolton, R. N., Parasuraman, A., Hoefnagels, A., Migchels, N., Kabadayi, S., Gruber, T., ... & Solnet, D. (2013). Understanding Generation Y and their use of social media: A review and research agenda. *Journal of Service Management, 24*(3), 245-267. https://doi.org/10.1108/09564231311326987
- Chae, J. (2018). Explaining females' envy toward social media influencers. *Media Psychology, 21*(2), 246-262. https://doi.org/10.1080/15213269.2017.1328312
- Chandler, P., & Sweller, J. (1991). Cognitive Load Theory and the Format of Instruction. *Cognition and Instruction*, 8, 293-332. https://doi.org/10.1207/S1532690XCI0804_2.
- Chau, P. (1996). An Empirical Assessment of a Modified Technology Acceptance Model. *J. Manag. Inf. Syst.*, 13, 185-204. https://doi.org/10.1080/07421222.1996.11518128.
- Conti, M., Gathani, J., & Tricomi, P. P. (2022). Virtual Influencers in Online Social Media. *IEEE Communications Magazine*, *60*(8), 1–13. https://doi.org/10.1109/mcom.001.2100786
- Dataconomy (2024). *Meet Aitana López, The Spanish AI Model That Everyone Talks About. https://dataconomy.com/2023/11/24/aitana-lopez-the-spanish-ai-model/*
- Djafarova, E., & Rushworth, C. (2017). Exploring the credibility of online celebrities' Instagram profiles in influencing the purchase decisions of young female users. *Computers in Human Behavior*, *68*, 1-7. https://doi.org/10.1016/j.chb.2016.11.009
- Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research*, *28*(3), 307–319. https://doi.org/10.2307/3172866
- Econopoly. (2023, October 11). *Blog | Il potere dei Virtual Influencer: quali vantaggi per i brand?* Econopoly. https://www.econopoly.ilsole24ore.com/2023/10/11/virtual-influencer-marketing/
- Euronews (2024, March 22). *Meet Spain's first AI model who earns up to €10,000 a month*. https://www.euronews.com/next/2024/03/22/meet-the-first-spanish-ai-model-earning-up-to-10000-per-month

- Fauser, P., Schmäh*, P., Chen, X., Michel, T., & Lee, S. (2023). Virtual Influencer Marketing and its impact on customer purchase Behaviour. *International Journal of Business and Applied Social Science*. https://doi.org/10.33642/ijbass.v9n6p4.
- Financial Times. (2023). How AI-created fakes are taking business from online influencers. Retrieved from https://www.ft.com/content/e1f83331-ac65-4395-a542-651b7df0d454
- Forbes Communications Council. (2022). The rise of virtual influencers and what it means for brands. Forbes. Retrieved from https://www.forbes.com/sites/forbescommunicationscouncil/2022/10/18/the-rise-of-virtual-influencers-and-what-it-means-for-brands/?sh=3e42405e6b56
- Freberg, K., Graham, K., McGaughey, K., & Freberg, L. A. (2011). Who are the social media influencers? A study of public perceptions of personality. *Public Relations Review*, *37*(1), 90-92. https://doi.org/10.1016/j.pubrev.2010.11.001
- Gao, J. (2022). Study of the Influence of Social Media Using Motivation on Brand Online Advertising Marketing Effect. *BCP Business & Management*. https://doi.org/10.54691/bcpbm.v21i.1289.
- Gerlich, M. (2023). The Power of Virtual Influencers: Impact on Consumer Behaviour and Attitudes in the Age of AI. Administrative Sciences, 13(8), 178. Retrieved from https://www.mdpi.com/2076-3387/13/8/178
- Hemalatha, A. (2023). AI-Driven Marketing: Leveraging Artificial Intelligence for Enhanced Customer Engagement. https://doi.org/10.47715/jpc.b.978-93-91303-61-7.
- Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development, and validation. *Journal of Interactive Marketing, 28*(2), 149-165. https://doi.org/10.1016/j.intmar.2013.12.002
- Hollender, N., Hofmann, C., Deneke, M., & Schmitz, B. (2010). Integrating cognitive load theory and concepts of human-computer interaction. *Comput. Hum. Behav.*, 26, 1278-1288. https://doi.org/10.1016/j.chb.2010.05.031.
- Instagram (2024), official profile Aitana Lopez, https://www.instagram.com/fit_aitana/
- Instagram, (2024), @lilmiquela, official profile Lil Miquela, https://www.instagram.com/lilmiquela/
- Ismail, N., & Yap, Y. (2022). Factors of virtual influencer marketing influencing Generation Y consumers purchase intention in Malaysia. *International Journal of Internet Marketing and Advertising*. https://doi.org/10.1504/ijima.2022.10048839.

- Jhawar, A., Kumar, P., & Varshney, S. (2023). The emergence of virtual influencers: a shift in the influencer marketing paradigm. *Young Consumers*, *24*(4). https://doi.org/10.1108/yc-05-2022-1529
- Jiang, K., Zheng, J., & Luo, S. (2024). Green power of virtual influencer: The role of virtual influencer image, emotional appeal, and product involvement. Journal of Retailing and Consumer Services, 77, 103660. Retrieved from https://ideas.repec.org/a/eee/joreco/v77y2024ics0969698923004113.html
- Jin, S. V., & Phua, J. (2014). Following celebrities' tweets about brands: The impact of Twitter-based electronic word-of-mouth on consumers' source credibility perception, buying intention, and social identification with celebrities. *Journal of Advertising, 43*(2), 181-195. https://doi.org/10.1080/00913367.2013.827606
- Jong, T. (2010). Cognitive load theory, educational research, and instructional design: some food for thought. *Instructional Science*, 38, 105-134. https://doi.org/10.1007/S11251-009-9110-0.
- Kadekova, Z., & Holienčinová, M. (2018). Virtual influencers as a new tool of digital marketing. Communication Today. Retrieved from https://www.communicationtoday.sk/download/22018/06.-KADEKOVA-HOLIENCINOVA-–-CT-2-2018.pdf
- Kahawandala, N., Peter, S., & Niwunhella, H. (2020). Profiling purchasing behavior of Generation Z. *2020 International Research Conference on Smart Computing and Systems Engineering (SCSE)*, 155-160. https://doi.org/10.1109/SCSE49731.2020.9313038.
- Kelman, H. C. (1958). Compliance, identification, and internalization: Three processes of attitude change. *Journal of Conflict Resolution*, *2*(1), 51-60. https://doi.org/10.1177/002200275800200106
- Kim, D. Y., & Kim, H.-Y. (2021). Trust me, trust me not: A nuanced view of influencer marketing on social media. *Journal of Business Research, 134*(1), 223–232. https://doi.org/10.1016/j.jbusres.2021.05.024
- Kim, H., & Park, M. (2023). Virtual influencers' attractiveness effect on purchase intention: A moderated mediation model of the Product–Endorser fit with the brand. Computers in Human Behavior, 130. Retrieved from https://www.sciencedirect.com/science/article/abs/pii/S0747563223000547
- King, W., & He, J. (2006). A meta-analysis of the technology acceptance model. *Inf. Manag.*, 43, 740-755. https://doi.org/10.1016/j.im.2006.05.003.

- Lee, Y., Kozar, K., & Larsen, K. (2003). The Technology Acceptance Model: Past, Present, and Future. *Commun. Assoc. Inf. Syst.*, 12, 50. https://doi.org/10.17705/1cais.01250.
- Lou, C., & Yuan, S. (2019). Influencer marketing: How message value and credibility affect consumer trust of branded content on social media. *Journal of Interactive Advertising, 19*(1), 58-73. https://doi.org/10.1080/15252019.2018.1533501
- Lou, C., Kiew, S. T. J., Chen, T., Lee, T. Y. M., & Ong, J. E. C. (2023). Authentically fake? How consumers respond to the influence of virtual influencers. Journal of Advertising. Retrieved from https://www.tandfonline.com/doi/abs/10.1080/00913367.2022.2149641
- Lou, C., Kiew, S., Chen, T., Lee, T., Ong, J., & Phua, Z. (2022). Authentically Fake? How Consumers Respond to the Influence of Virtual Influencers. *Journal of Advertising*, 52, 540 - 557. https://doi.org/10.1080/00913367.2022.2149641.
- MIT Sloan School of Management. (2023). The power of influencers in social media networks. Retrieved from https://mitsloan.mit.edu/press/power-influencers-social-media-networks
- Moulard, J. G., Garrity, C. P., & Rice, D. H. (2015). What makes a human brand authentic? Identifying the antecedents of celebrity authenticity. *Psychology & Marketing, 32*(2), 173-186. https://doi.org/10.1002/mar.20775
- Moustakas, E., Lamba, N., Mahmoud, D., & Ranganathan, C. (2020). Blurring lines between fiction and reality: Perspectives of experts on marketing effectiveness of virtual influencers. *2020 International Conference on Cyber Security and Protection of Digital Services (Cyber Security)*, 1–6. https://doi.org/10.1109/cybersecurity49315.2020.9138861
- Muniz, F., Stewart, K., & Magalhães, L. (2023). Are they humans or are they robots? The effect of virtual influencer disclosure on brand trust. Journal of Consumer Behaviour. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1002/cb.2271
- Nissen, A., Conrad, C., & Newman, A. (2023). Are You Human? Investigating the Perceptions and Evaluations of Virtual Versus Human Instagram Influencers. *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. https://doi.org/10.1145/3544548.3580943
- Paas, F., Renkl, A., & Sweller, J. (2003). Cognitive Load Theory and Instructional Design: Recent Developments. *Educational Psychologist*, 38, 1 - 4. https://doi.org/10.1207/S15326985EP3801_1.
- Park, J., Lee, J. M., Xiong, V. Y., Septianto, F., & Seo, Y. (2021). David and Goliath: When and Why Micro-Influencers Are More Persuasive Than Mega-Influencers. *Journal of Advertising*, *50*(5), 584–602. https://doi.org/10.1080/00913367.2021.1980470

- Rizzo, G. L. C., Berger, J., & Villarroel, F. (2023). What Drives Virtual Influencer's Impact? Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4329150
- Rossi, C., & Rivetti, F. (2023). Virtual Influencer Marketing: Is It Effective in Engaging Younger Generations? European Conference on Social Media. Retrieved from https://www.researchgate.net/publication/370579829_Virtual_Influencer_Marketing_Is_It_Effective_in_Engaging_Younger_Generations
- Ruggiero, T. (2000). Uses and Gratifications Theory in the 21st Century. *Mass Communication and Society*, 3, 3 - 37. https://doi.org/10.1207/S15327825MCS0301_02.
- Saporiti, R. (2024, January 12). *Blog | Quanto vale e come funziona il mercato degli influencer*. Info Data. https://www.infodata.ilsole24ore.com/2024/01/12/quanto-vale-e-come-funziona-il-mercato-degli-influencer/
- Shi, W. (2023). Virtual Human Influencer and Its Impact on Consumer Purchase Intention. *Advances in Economics, Management and Political Sciences*. https://doi.org/10.54254/2754-1169/47/20230376.
- Skulmowski, A., & Xu, K. (2021). Understanding Cognitive Load in Digital and Online Learning: a New Perspective on Extraneous Cognitive Load. *Educational Psychology Review*, 34, 171-196. https://doi.org/10.1007/s10648-021-09624-7.
- Stafford, T., Stafford, M., & Schkade, L. (2004). Determining Uses and Gratifications for the Internet. *Decis. Sci.*, 35, 259-288. https://doi.org/10.1111/j.00117315.2004.02524.x.
- Sundar, S., & Limperos, A. (2013). Uses and Grats 2.0: New Gratifications for New Media. *Journal of Broadcasting & Electronic Media*, 57, 504 - 525. https://doi.org/10.1080/08838151.2013.845827.
- Surendran, P. (2012). Technology Acceptance Model: A Survey of Literature. *International journal of business and social research*, 2, 175-178. https://doi.org/10.18533/IJBSR.V2I4.161
- Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, *12*(2), 257–285. https://doi.org/10.1016/0364-0213(88)90023-7
- Sweller, J. (1994). COGNITIVE LOAD THEORY, LEARNING DIFFICULTY, AND INSTRUCTIONAL DESIGN. *Learning and Instruction*, 4, 295-312. https://doi.org/10.1016/0959-4752(94)90003-5.
- TikTok (2024), official profile Lil Miquela, https://www.tiktok.com/@lilmiquela
- University of Jyväskylä. (2023). From pixels to fame – an empirical study of virtual influencers and Gen Z customer engagement. Retrieved from https://jyx.jyu.fi/bitstream/handle/123456789/86822/1/URN%3ANBN%3Afi%3Ajyu-202305092905.pdf

- Wiedmann, K. P., & Von Mettenheim, W. (2020). Attractiveness, trustworthiness and expertise–social influencers' winning formula? The Journal of Product and Brand Management, 30(5), 707–725. https://www.researchgate.net/publication/343081087_Attractiveness_trustworthiness_and_expertise_-_social_influencers'_winning_formula
- Williams, K. C., & Page, R. A. (2011). *Marketing to the Generations*. ResearchGate. https://www.researchgate.net/publication/242760064_Marketing_to_the_Generations
- Zhou, X., Yan, X., & Jiang, Y. (2023). EXPRESS: Making sense? The sensory-specific nature of virtual influencer effectiveness. Journal of Marketing. Retrieved from https://journals.sagepub.com/doi/abs/10.1177/00222429231203699

APPENDIX

Appendix A: Frequencies – Gender

Frequenze

Statistiche

Per favore, indica il tuo genere

N	Valido	157
	Mancante	1
Media		1.41
Deviazione std.		.555

Per favore, indica il tuo genere

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	Maschio	96	60.8	61.1	61.1
	Femmina	58	36.7	36.9	98.1
	Genere non-binario / Terzo genere	2	1.3	1.3	99.4
	Preferisco non dirlo	1	.6	.6	100.0
	Totale	157	99.4	100.0	
Mancante	Sistema	1	.6		
Totale		158	100.0		

Appendix B: Frequencies - Age

Statistiche

Per favore, indica la tua fascia di appartenenza del tuo anno di nascita

N	Valido	157
	Mancante	1
Media		2.95
Deviazione std.		.966

Per favore, indica la tua fascia di appartenenza del tuo anno di nascita

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1946-1964	9	5.7	5.7	5.7
	1965-1980	50	31.6	31.8	37.6
	1981-1996	38	24.1	24.2	61.8
	1997-2009	60	38.0	38.2	100.0
	Totale	157	99.4	100.0	
Mancante	Sistema	1	.6		
Totale		158	100.0		

Appendix C: Frequencies – Level of education

Frequenze

Statistiche

Per favore, indica il livello più alto di istruzione conseguito o che stai conseguendo

N	Valido	157
	Mancante	1
Media		3.10
Deviazione std.		1.142

Per favore, indica il livello più alto di istruzione conseguito o che stai conseguendo

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	Licenza media	10	6.3	6.4	6.4
	Diploma superiore	49	31.0	31.2	37.6
	Laurea triennale	29	18.4	18.5	56.1
	Laurea Magistrale o a ciclo unico	55	34.8	35.0	91.1
	Master	13	8.2	8.3	99.4
	Dottorato di ricerca	1	.6	.6	100.0
	Totale	157	99.4	100.0	
Mancante	Sistema	1	.6		
Totale		158	100.0		

Appendix D: Frequencies – general questions

Tabella delle frequenze

Utilizzi i social media?

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	Si	147	93.0	93.0	93.0
	No	11	7.0	7.0	100.0
	Totale	158	100.0	100.0	

Quanto spesso li utilizzi?

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	Più di una volta al giorno	103	65.2	70.1	70.1
	Quotidianamente	36	22.8	24.5	94.6
	4 o 6 volte alla settimana	2	1.3	1.4	95.9
	2 o 3 volte alla settimana	5	3.2	3.4	99.3
	Una volta alla settimana	1	.6	.7	100.0
	Totale	147	93.0	100.0	
Mancante	Sistema	11	7.0		
Totale		158	100.0		

Statistiche

		Quali social media utilizzi più frequentemente? (seleziona 1 o più risposte) – Selected Choice Instagram	Quali social media utilizzi più frequentemente? (seleziona 1 o più risposte) – Selected Choice Facebook	Quali social media utilizzi più frequentemente? (seleziona 1 o più risposte) – Selected Choice Tik Tok	Quali social media utilizzi più frequentemente? (seleziona 1 o più risposte) – Selected Choice Twitter/X	Quali social media utilizzi più frequentemente? (seleziona 1 o più risposte) – Selected Choice Linkedin	Quali social media utilizzi più frequentemente? (seleziona 1 o più risposte) – Selected Choice Altro (specificare)
N	Valido	128	64	53	13	53	5
	Mancante	30	94	105	145	105	153
Media		1.00	1.00	1.00	1.00	1.00	1.00
Deviazione std.		.000	.000	.000	.000	.000	.000

Appendix E: ANOVA – effect of influencer type on Perceived Authenticity

A una via

Descrittive

Perceived_Authenticity

	N	Medio	Deviazione std.	Errore std.	95% di intervallo di confidenza per la media		Minimo	Massimo
					Limite inferiore	Limite superiore		
.00	77	3.9714	1.31858	.15027	3.6721	4.2707	1.00	6.40
1.00	81	2.9877	1.45648	.16183	2.6656	3.3097	1.00	7.00
Totale	158	3.4671	1.47171	.11708	3.2358	3.6983	1.00	7.00

Tests di omogeneità delle varianze

		Statistica di Levene	gl1	gl2	Sig.
Perceived_Authenticity	Basato sulla media	.986	1	156	.322
	Basato sulla mediana	.858	1	156	.356
	Basato sulla mediana e con il grado di libertà adattato	.858	1	154.855	.356
	Basato sulla media ritagliata	.982	1	156	.323

ANOVA

Perceived_Authenticity

	Somma dei quadrati	df	Media quadratica	F	Sig.
Tra gruppi	38.204	1	38.204	19.745	<.001
Entro i gruppi	301.845	156	1.935		
Totale	340.049	157			

Dimensioni effetto ANOVA[a]

		Stima del punto	Intervallo di confidenza 95%	
			Inferiore	Superiore
Perceived_Authenticity	Eta quadratico	.112	.036	.209
	Epsilon quadratico	.107	.029	.204
	Effetto fisso omega quadratico	.106	.029	.203
	Effetto casuale omega quadratico	.106	.029	.203

a. Eta quadratico e epsilon quadratico vengono stimati in base al modello a effetto fisso.

Appendix F: ANOVA – effect of influencer type on Purchasing Behaviour

A una via

Descrittive

Purchasing_Behaviour

	N	Medio	Deviazione std.	Errore std.	95% di intervallo di confidenza per la media		Minimo	Massimo
					Limite inferiore	Limite superiore		
.00	77	2.9714	1.46493	.16694	2.6389	3.3039	1.00	6.00
1.00	81	2.5679	1.52330	.16926	2.2311	2.9047	1.00	7.00
Totale	158	2.7646	1.50405	.11966	2.5282	3.0009	1.00	7.00

Tests di omogeneità delle varianze

		Statistica di Levene	gl1	gl2	Sig.
Purchasing_Behaviour	Basato sulla media	.002	1	156	.965
	Basato sulla mediana	.020	1	156	.887
	Basato sulla mediana e con il grado di libertà adattato	.020	1	151.408	.887
	Basato sulla media ritagliata	.016	1	156	.901

ANOVA

Purchasing_Behaviour

	Somma dei quadrati	df	Media quadratica	F	Sig.
Tra gruppi	6.428	1	6.428	2.875	.092
Entro i gruppi	348.734	156	2.235		
Totale	355.162	157			

Dimensioni effetto ANOVA[a,b]

		Stima del punto	Intervallo di confidenza 95%	
			Inferiore	Superiore
Purchasing_Behaviour	Eta quadratico	.018	.000	.078
	Epsilon quadratico	.012	-.006	.072
	Effetto fisso omega quadratico	.012	-.006	.072
	Effetto casuale omega quadratico	.012	-.006	.072

a. Eta quadratico e epsilon quadratico vengono stimati in base al modello a effetto fisso.

b. Le stime negative ma meno distorte vengono tenute, non arrotondate a zero.

Appendix G: ANOVA – Effect of generational cohorts on Purchasing Behaviour

A una via

Descrittive

Pur_Beh

	N	Medio	Deviazione std.	Errore std.	95% di intervallo di confidenza per la media		Minimo	Massimo
					Limite inferiore	Limite superiore		
.00	59	2.9119	1.42503	.18552	2.5405	3.2832	1.00	5.80
1.00	98	2.6592	1.54765	.15634	2.3489	2.9695	1.00	7.00
Totale	157	2.7541	1.50314	.11996	2.5172	2.9911	1.00	7.00

Tests di omogeneità delle varianze

		Statistica di Levene	gl1	gl2	Sig.
Pur_Beh	Basato sulla media	.519	1	155	.472
	Basato sulla mediana	.286	1	155	.593
	Basato sulla mediana e con il grado di libertà adattato	.286	1	151.339	.593
	Basato sulla media ritagliata	.409	1	155	.524

ANOVA

Pur_Beh

	Somma dei quadrati	df	Media quadratica	F	Sig.
Tra gruppi	2.351	1	2.351	1.041	.309
Entro i gruppi	350.118	155	2.259		
Totale	352.470	156			

Dimensioni effetto ANOVA[a,b]

		Stima del punto	Intervallo di confidenza 95%	
			Inferiore	Superiore
Pur_Beh	Eta quadratico	.007	.000	.054
	Epsilon quadratico	.000	-.006	.047
	Effetto fisso omega quadratico	.000	-.006	.047
	Effetto casuale omega quadratico	.000	-.006	.047

a. Eta quadratico e epsilon quadratico vengono stimati in base al modello a effetto fisso.

b. Le stime negative ma meno distorte vengono tenute, non arrotondate a zero.

Appendix H: ANOVA – Effect of generational cohort on Perceived Authenticity

A una via

Descrittive

Per_Aut

	N	Medio	Deviazione std.	Errore std.	95% di intervallo di confidenza per la media		Minimo	Massimo
					Limite inferiore	Limite superiore		
.00	59	3.7153	1.40943	.18349	3.3480	4.0826	1.00	6.60
1.00	98	3.3082	1.49864	.15139	3.0077	3.6086	1.00	7.00
Totale	157	3.4611	1.47451	.11768	3.2287	3.6936	1.00	7.00

Tests di omogeneità delle varianze

		Statistica di Levene	gl1	gl2	Sig.
Per_Aut	Basato sulla media	.471	1	155	.494
	Basato sulla mediana	.499	1	155	.481
	Basato sulla mediana e con il grado di libertà adattato	.499	1	154.886	.481
	Basato sulla media ritagliata	.481	1	155	.489

ANOVA

Per_Aut

	Somma dei quadrati	df	Media quadratica	F	Sig.
Tra gruppi	6.103	1	6.103	2.840	.094
Entro i gruppi	333.070	155	2.149		
Totale	339.173	156			

Dimensioni effetto ANOVA[a,b]

		Stima del punto	Intervallo di confidenza 95%	
			Inferiore	Superiore
Per_Aut	Eta quadratico	.018	.000	.078
	Epsilon quadratico	.012	-.006	.072
	Effetto fisso omega quadratico	.012	-.006	.072
	Effetto casuale omega quadratico	.012	-.006	.072

a. Eta quadratico e epsilon quadratico vengono stimati in base al modello a effetto fisso.

b. Le stime negative ma meno distorte vengono tenute, non arrotondate a zero.

Appendix I: Model 1 matrix - Process for SPSS Version 4.2

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 4.2 beta ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : Pur_Beh
    X  : Image
    W  : età_dic

Sample
Size:  157

**************************************************************************
OUTCOME VARIABLE:
 Pur_Beh

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1661      .0276     2.2402     1.4471     3.0000   153.0000      .2313

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.0759      .2779    11.0669      .0000     2.5268     3.6249
Image        -.3225      .3898     -.8275      .4092    -1.0926      .4475
età_dic     -.1675      .3520     -.4759      .6348     -.8630      .5279
Int_1        -.1658      .4933     -.3361      .7373    -1.1405      .8088

Product terms key:
 Int_1    :        Image    x        età_dic

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0007      .1130     1.0000   153.0000      .7373

************************ ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

------ END MATRIX -----
```

Appendix J: Model 4 matrix - Process for SPSS Version 4.2

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 4.2 beta ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : Pur_Beh
    X  : Image
    M  : Per_Aut

Covariates:
 età_dic

Sample
Size:  157
**************************************************************************
OUTCOME VARIABLE:
 Pur_Beh

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6853      .4697     1.2218    45.1651     3.0000   153.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant      .0496      .3209      .1547      .8773     -.5843      .6836
Image         .3034      .1879     1.6148      .1084     -.0678      .6746
Per_Aut       .7289      .0645    11.3023      .0000      .6015      .8563
età_dic      .0435      .1840      .2365      .8134     -.3200      .4070


****************** DIRECT AND INDIRECT EFFECTS OF X ON Y *****************

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI
      .3034      .1879     1.6148      .1084     -.0678      .6746

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
Per_Aut     -.7294      .1665    -1.0747     -.4103

************************ ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

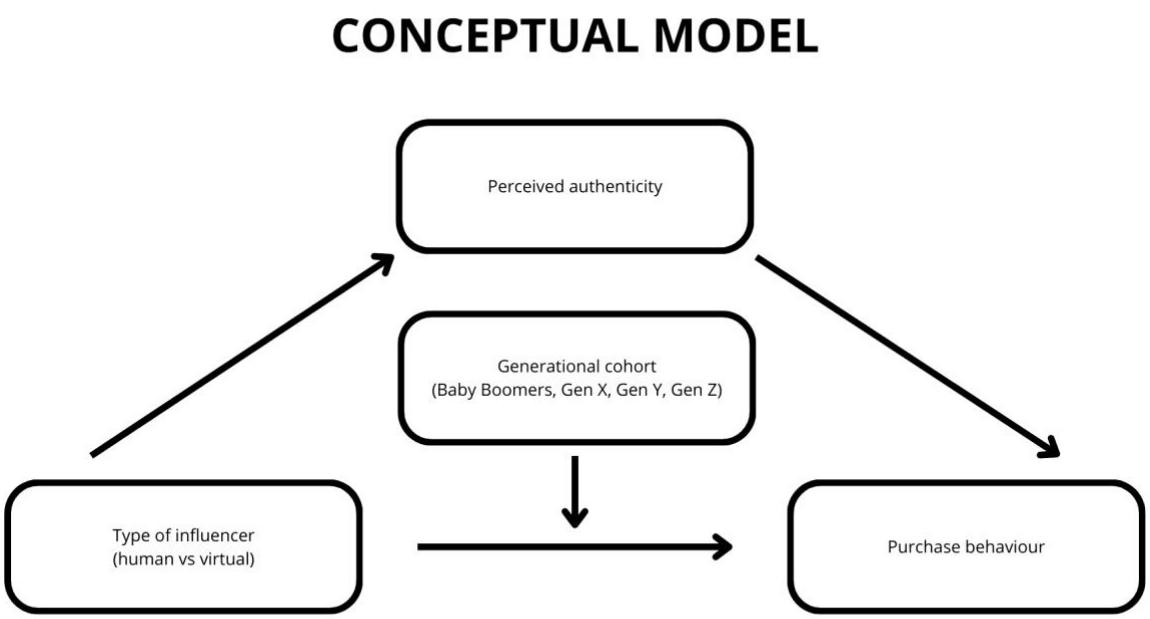

Image 1 - Conceptual framework

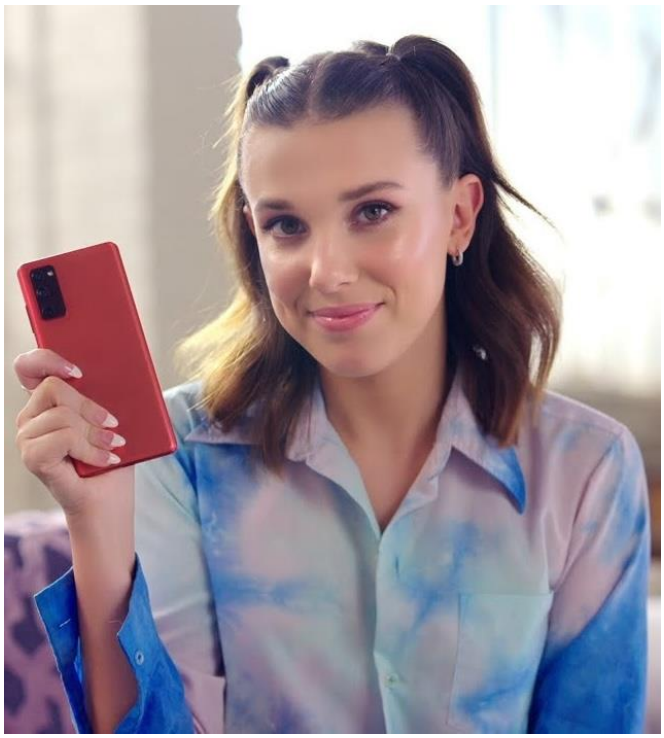

Image 2 – Human influencer condition

Image 3 – Virtual influencer condition