Renaissance 2.0: Art in the Age of AI

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Abstract

The latest innovation altering the landscape of visual arts is that of generative AI art programs such as DALL-E and Midjourney. With the deep proliferation of AI in all aspects of life, creative industries have not been left behind. But naturally, when machines start mimicking intrinsically human qualities, a social, ethical, and cultural dilemma is born. Amongst the many negative effects of AI art, forgery, theft, job losses, and the devaluation of human labour are the most cited. Art and artists have not only survived but also thrived under the previous waves of automation. But as long as AI learns by replication instead of creation, it will stay a subject of debate among the art and science community alike. Navigating the subtleties behind the integration of AI art in society is crucial for understanding the reasons behind the acceptance/rejection of this new technology. This thesis aimed to find out what artists - the people most affected by generative AI art - think about this phenomenon. It was found that artists have a rather negative outlook towards AI art, even more so than general AI technologies. This outlook is an amalgamation of effects from an assortment of factors. Some of them were types of creativity, technological affinity/adoption, professional status, and previous experiences with AI technology. Creativity and technological adoption are well-researched fields with many definitions, theories, and frameworks developed to understand them. The very existence of generative AI art challenges these definitions. But simultaneously, it fits into or can be seen as an extension of some of these well-established adoption frameworks. It was also found that artists' opinions directly translate into actual use and adoption of generative AI technologies in their daily lives and work. This means that the artists' resistance towards AI could significantly influence the future development and integration of such technologies within the art industry. Moreover, the results suggest that focusing on improving AI's creative capacities in ways that complement rather than compete with human creativity might reduce some of the negative perceptions. A focus on co-creativity and further research into the connection between AI adoption and personality traits will be worthwhile.

KEYWORDS: *Generative AI, Art, AI Art, Machine Creativity, AI Adoption*

Contents

1. Introduction

Picture this: a canvas, a paintbrush, and an invisible machine. Welcome to the unconventional world of today where art meets AI, algorithms operate brushes and visual artists are forced to question: “'Is this the next renaissance or the rise of the machines?”. Recently artificial intelligence (AI) technologies have been reshaping various aspects of our society. The realm of visual arts is no exception. As of last year, AI-generated art from algorithms, such as DALL-E and Midjourney, has emerged as an intriguing intersection between technology and creativity. It can also be credited for galvanising debates within the art community. For example, the "spiral-town" (Figure 1.1) debate was extensively covered by Wired last year (Parham, 2023, paras 1-7). This debate started when a user @deepfates posted an image created using the open-source AI picture generator Stable Diffusion. @deepfates gave credit to human artists for the training data while admitting that the image was technically stolen from multiple sources. Although spiral-town pictured below (Figure 1.1) was not the first AI painting it has been dubbed as the “first piece of AI art to pass the Turing test”(Paul Graham, 2023, as cited in Read, 2023, para 2). This sparked a broader discussion about the essence of art and the application of AI to automating creative processes. AI-generated art has drawn praise for its unconventionality but it has also drawn criticism for lacking human authenticity.

Figure 1.1

AI-generated image “Spiral-town” (Ugleh, 2023)

There is an ongoing discourse within the art community regarding whether the collaborative AI art piece should be perceived as innovative and inspiring or as concerning and potentially undermining for traditional artists (Parham, 2023, para 5). Moreover, hundreds of new AI applications have since emerged, charging subscription fees from users without compensating or crediting the artists whose art styles they were trained on (Chayka, 2023, para 2). Since December 2022, the #noaiart movement has been spurred by millions of artists worldwide to protest against AI image generators' sway on diminishing the value of visual art (Rastogi, 2023, para 9). Hundreds of influential artists and animators came together to make blackout posts using a red ban symbol covering the word AI on various social media sites to highlight their protest (Figure 1.2a) (Babbs, 2023, para 1). In response, another group of artists came up with (Figure 1.2b) an image with a green tick mark encouraging the use of AI as an additional tool. Since the very conception of AI art generators, artists have been divided into a spectrum of opinions, ranging from fully embracing AI in their work to completely renouncing it. Although some creatives have adopted AI, utilising it to showcase new art, others approach this innovation with wariness and resentment (Roller, 2023).

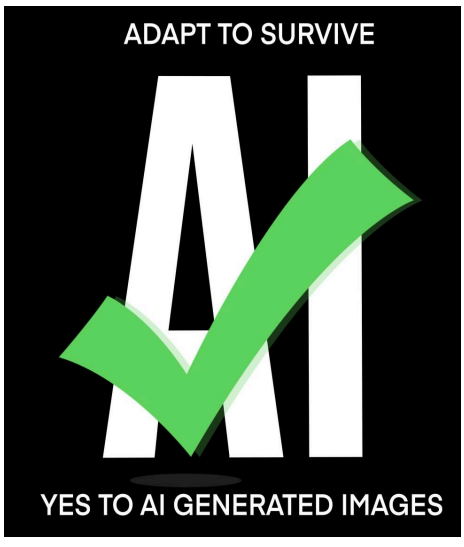
Figure 1.2

(1.2a) Image Representing Movement #Noaiart

(Freemager,2022)

(1.2b) Image Representing Movement #Yesaiart

(MaxxFeral, 2023)



Generative AI has already seeped into different elements of society and affected various areas from education to economics. According to popular opinion, the perceived benefits of AI were saving time and money, automating redundant tasks, as an accountability device (fact checker) and constant availability (Baldassarre et al., 2023, pp. 9-10). Whereas, the drawbacks were cited as concerns regarding privacy, job loss, falsified information and ingrained biases (Baldassarre et al., 2023, p. 10). There is a need to balance these benefits and drawbacks. Especially in the creative sector, the preservation of human authenticity is of utmost importance (Amankwah-Amoah et al., 2024, p. 8-9). Understanding the attitudes of visual artists towards AI and the factors influencing these attitudes is crucial for comprehending the complex evolving landscape of contemporary art and society.

Hence, a significant aspect of this investigation is rooted in artists' attitudes toward AI-generated art and the factors that affect these attitudes. The research question that will guide this study is: ***What attitudes do visual artists have towards generative AI art programs, and what factors influence these attitudes?***

1.1 Societal Relevance

By addressing these questions, this thesis aims to contribute to society by creating awareness of the issue and shedding light on the economic threats of this new technology (Jiang et al., 2023, p. 366). Furthermore, this line of questioning opens up doors to deep ethical issues surrounding human-computer interaction due to the autonomous essence of AI art programs (Caramiaux & Fdili Alaoui, 2022, p. 19). One of the most ethically impacted sectors is education. AI literacy for both teachers and students has emerged as an inevitable need for the education system (Chiu, 2023, p. 7). Generative AI technologies are improving at a staggering rate. Barely one year since its public release, ChatGPT's latest version (GPT-4) can now surpass human scores on the American Bar Exam (OpenAI, 2023, p. 1). Scholars contend that ChatGPT and other generative AI models are not meant to alleviate societal inequalities; nonetheless, it is only fair that these technologies not be exploited to aggravate societal problems (Baldassarre et al., 2023, p. 12). Although growth is important, growing in the right direction is even more so. Lastly, as technological advancements continue to unfold at a rapid pace, understanding how

attitudes within the artistic community are evolving informs us about a potentially massive shift in the world of visual arts.

1.2 Scientific Relevance

From an academic perspective, this is an important research gap because it will be the first study that aims to establish associations between artist attitudes and factors like income, affinity to technology, expertise in art, etc. Additionally, audiences have been observed to only marginally be able to differentiate between paintings made by human artists and those created by AI (Elgammal et al., 2017, p. 1; Bellaiche et al., 2023, p. 19). Multiple studies have been conducted to test the perceived value, and use cases of AI art (Bellaiche et al., 2023, p. 3). On the other hand, only a handful of academic studies have been conducted from the perspective of artists. It is also important to gain a well-rounded, global perspective on the topic (Latikka et al., 2023, p. 9). In addition, there is a need for a broader objective study that corroborates previous subjective, qualitative findings on the topic (Nguyen, 2024, p.49; Shi et al., 2023, pp.12-13). Exploring external personal factors impacting the adoption of AI in creative industries is also relevant (Edberg & Beck, 2020, p.24). This research also aims to bridge the gap between art and science and add to the literature about one of the three main actors of the issue: the creatives, the observers and the tool as articulated by Daniele and Song (2019, pp. 159-160).

1.3 Chapter Outline

The first chapter is an introduction to recent events, developments and ideas that led to the conception of the research question. In addition, the social and academic relevance of studying the effects of AI art are also explained. The second chapter goes into detail about different findings and theories and how they motivate the hypotheses for this thesis. The chapter aims to contextualise the research with ongoing literature regarding technology adoption, gender and more. The third chapter dissects the methodology used for the thesis. This includes but is not limited to data collection, processing, sampling procedures and operationalization of involved factors. The fourth chapter presents results from hypothesis testing including descriptives for the sample and findings from various statistical tests. The

thesis ends with the discussion chapter in which implications from the previous sections are discussed along with some limitations and ideas for further research.

2. Theoretical Framework

The intersection of Art and AI has been a focal point in past literature exploring the complex relationship between humans and machines. Throughout human history, the evolution of art and artistic creativity has been closely intertwined with societal developments (Morris-Kay, 2010, p. 158). Changes in artistic techniques, styles, and perceptions are influenced by factors such as aesthetic trends, available tools, and societal needs (Bosanquet, 2011; Morris-Kay, 2010, p. 158). The next step in this evolution is AI art. Visual AI models initially were similar to large language learning AI models, by training from the work of thousands of amateur and professional artists (Jiang et al., 2023, 364). Although these systems are expedient and robust, responding relatively quickly to their users, their need for training data still essentially means that AI is "stealing" from a vast repository of images, including both freely accessible and copyrighted ones, without obtaining consent from the original creators (Casper et al., 2032, p. 3).

Unlike language learning models which use learned patterns to generate new data, this poses an ethical dilemma because there is a difference between just processing data to learn versus replicating it without authorization. Recognizing these ethical concerns and technological limitations, some updated models, such as AICAN, strive to replicate the entire process of human creativity from inception (Mazzone & Elgammal, 2019, p. 2). However initially, like all other models, these too need to "be fed" on a certain amount of existing visual media content to run effectively. This need to develop predictions by learning and reproducing from existing content is defined as the stable diffusion model (Casper et al., 2023, p. 1). Since artists are unaware of and largely have not consented to this use of their material, this exploitation has typically been seen as theft by the art community (Bausenhardt, 2023, para 2). This gives rise to an even deeper discourse about the Human versus AI narrative.

2.1 AI creativity

"*Art is the transmission of feelings the artist has experienced*."- (Tolstoy, 1897, p. 169)

In 1896, Leo Tolstoy published a series of essays on the philosophy of art. Centuries later the world still struggles to determine what constitutes art. By the late 1990s, philosophers and

artists were divided into two opposing camps: the functionalists and the proceduralists (Stecker, 1992, p. 142). The functionalists were more in line with what Tolstoy said. They believed that art was anything that served an intrinsic purpose such as evoking emotions. Conversely, proceduralists believed that social practices and hierarchies create art, and hence anything that fit the "rules of the art world' at that certain time was coined art (Davies, 1990, p. 100). Consequently, the division between the two perspectives extended to the definition of an artist. In the first definition, almost any creator who creates art can be labelled an artist. However, in the second definition, it is implied that artists have to be 'socialised' in a certain way to qualify as the makers of art. The American pragmatic thinker, John Dewey took to popularising this second definition of an artist. He strongly believed that art stems from and can be understood only when put into the context of the artist's long journey of socialisation into their certain style (Still & d'Inverno, 2019, p. 2). Now at a time when machines are making art, the distinction between these two definitions becomes more relevant than ever.

In addition to the socialisation process, another factor that psychologists since the 1950s have strongly believed as an intrinsic differentiator between human and machine artists is *creativity* (Bellaiche et al., 2023. p. 17; Guilford, 1950, p. 447). Creativity has been long viewed by scholars as a subjective concept (Boden, 1998, p. 354; Magni et al., 2023). Some aspects of creativity have been defined over the years to include novelty (Boden, 1998, p. 354; Esling & Devis, 2020, p. 7), quality of idea generation (Mueller et al., 2014), and analogy and abstraction (Esling & Devis, 2020, p. 7). The second factor of "quality of idea generation" is what makes the concept most subjective because different assessors will have different standards that determine value (Boden, 1998, p. 354). When it comes to Artificial Intelligence, novelty is what still sets human artists apart. AI is trained to be the most efficient creator, and to do that oftentimes AI sacrifices exploring new alternatives to reduce what it considers errors (Esling & Devis, 2020, p. 7). For example, ignoring skews to fit the principal mode while image creation as accuracy is incentivized over nuance. Another limitation of AI creativity is its high dependence on existing forms of "human creativity" and the retrieval systems that mine this creativity (Esling & Devis, 2020, p. 7).

More recently, there has been growing discourse about viewing AI as a co-creator instead of a creator. This stems from the first "image-generating AI" model (AARON) developed by Harold Cohen in 1956. Cohen made modifications to AARON's code to produce paintings and drawings. He transitioned from merely creating guidelines for AARON to being a colourist for the machine's designs. Despite this, he did not regard AARON as a pure artist because he believed that true creativity was beyond following rules and applying algorithms (Audry & Ippolito, 2019, p.2). And since AARON could not think or learn from its art in the same way that humans do, he labelled this form of creativity as "collaborative creativity". On the other hand, scientists argue that although not the same as human creativity, AI is creative in and of itself (Erden, 2010, p. 360). According to Sawyer's (2014, p. 157) concept of group creativity, creativity can manifest by combining something old with something new and often gets better with the collaboration of different agents. AI art algorithms fit this definition well. Despite the ongoing evolution in the understanding of creativity at a conceptual level, most researchers remain optimistic and suggest that human-AI creative collaboration is the new wave for creative Industries (Hwang, 2022, p.7; Schleiger et al., 2024, p. 15; Wan et al., 2024, p.17). The discourse also strongly suggests that AI can complement human creativity and take our art to a higher level. It also reiterates the importance of studying the link between artist perceptions, AI, and human creativity.

Furthermore, a qualitative study by Wingström et al. (2022, p. 188) found that artists primarily use AI to enhance their creativity. That is, artists with lower creativity have positive AI adoption for co-creativity. In contrast, eye-tracking studies have demonstrated an implicit negative bias towards AI creativity, as viewers believed that artistic creativity is a human prerogative (Zhou & Kawabata, 2023, p. 11). Combined with the perception that AI is trying to replace human creativity, artists who consider themselves highly creative may hold negative attitudes toward generative AI. This brings us to the first hypothesis: ***H1****: Artists with high levels of artistic creativity are more likely to exhibit negative attitudes towards generative AI art programs.*

2.2 Economic Perspectives

"*OpenAI's mission is to create highly autonomous systems that outperform humans at most economically valuable work and benefits all of humanity.*" - (Open AI charter, 2018, para 2)

Economists predict that in the future with the rapid advent of AI technology, deep learning and ultimately machine automation of tasks, traditional jobs might disappear along with the absence of new opportunities emerging (Kukreja, 2022, p.35). This could lead to widespread unemployment, where many people struggle to find fulfilling work, potentially creating further economic and social challenges. This issue is worsened by the fact that corporations invested in AI seek to downplay the threats of their technology towards the general workforce (Newton & Dhole, 2023, p. 3).

The first victims of AI automation seem to be artists of all kinds (Brunder, 2023, p. 16). Nowak et al. (2018, p. 27) put forth the idea that the threat of AI is not merely limited to the possibility of an economic apocalypse but the bigger threat of deterioration of the human mind's ability to contribute to meaningful societal functions. While the full extent of this deterioration remains unconfirmed, emerging research on AI's economic impact on creative industries raises alarms about its potentially devastating consequences. Through interviews and industry analyses, it has been observed that though job displacements in the creative sector may occur, there is also potential for a surge in creativity and the emergence of new job opportunities behind the scenes (Brunder, 2023, p. 16; Nguyen, 2024, p.33). This trend has also been captured in the last EU parliament briefing from Szczepanski (2019, p. 6-7) which predicts a precarious landscape for skilled labourers where mid-level jobs will face a decline in the short term. Technological advancement has lowered the demand for basic minimum wage jobs like handling data, administration and other entry-level positions (Brynjolfsson et al., 2023, pp. 6-7). Specifically, in the case of digital art (game design), as we move down the hierarchy of jobs, starting from basic roles like asset or panel design, humans become increasingly replaceable by AI due to considerations of labour costs (Nguyen, 2024, pp. 29-30). Hence entry-level artists may have taken a dislike towards AI. Hence it is important to gauge how income levels might directly or indirectly shape artists' opinions on generative AI. Therefore, ***H2:*** *The attitudes of*

artists towards AI-generated art programs are predicted by their income levels, such that those with higher incomes will have more positive attitudes.

2.3 AI Art and Expertise

Another group of stakeholders majorly affected by developments in the generative AI industry is that of art students and prospective professional artists. But this is not the first time that budding artists have been challenged by the threat of automation. During the later stages of industrialization, as art started being easily mass-produced, artists like Andy Warhol famously used their ingenuity to transform objects of daily use into pop art (Susuz & Ozturk, 2019). Technological advancements during that era solidified the importance of authenticity in differentiating between art and automation (Lodewijk, 2019, p.94). Nevertheless, the art community has shown its adaptability in the past by harnessing new technologies like the computer (Brown, 2004, p. 1). The progression towards the adoption of computer art programs can give us an insight into the phenomenon of a new technology transforming the entire landscape of the art industry. During the early days of digital painting programs, computers were seen as a separate technological addition to the artist's toolkit but over time they have come to be treated as an extension of the artist themselves (Brown, 2004). In the case of computer art like technology in general, it was observed that younger users with presumably less expertise were early adopters whereas seasoned professionals still debated the integration of digital programs in their work (Brown, 2004; Kangwansil & Leelasantitham, 2020; Lattika et al., 2023, p. 6; Li et al., 2008, p. 285). Hence, ***H3:*** *Artists with less expertise exhibit a more positive attitude towards AI.*

However, AI is leaps ahead of computer art programs where the core of creativity may not fully rest on the human artist. Hence today, the issue is more nuanced, even more so for the younger digital artists. In contrast to the release of computers, in the case of generative AI newly emerging artists, e.g., art students, have felt discouraged entering their new professions, while established artists have become fearful of losing their livelihoods (Jiang et al., 2023, p. 368). This threat is not merely hypothetical. Marvel Studios has become notorious for worsening CGI quality in its productions. Presumably due to their replacement of illustrators with AI

(Burlingame, 2023, para. 5). A further pressing concern in this matter is that at times humans are unable to differentiate with certainty between art made by AI vs artists (Bellaiche et al., 2023; Hong & Curran, 2019, p77). So although artists with less expertise may prefer AI, it is possible that specifically in the case of students an extension of *H3* can be framed as, **H4**: *Art students exhibit more negative attitudes toward AI-generated art compared to professional artists.*

2.4 Technological Adoption and Affinity

Apart from income and expertise, many other social aspects have been known to influence the adoption and attitude of the workforce towards new technologies. Technology adoption is relevant to the study of the emerging generative AI. When it comes to art, AI is brought into relevance with the conjunction of technical systems used in artistic practice, such as digital art. For example, Adobe Photoshop - one of the most used editing and digital painting software worldwide - began to provide users with an AI plugin that makes editing faster and easier (Edberg & Beck, 2020, p. 17; Yan et al., 2022, p. 14). Scientists suggest a strong need to quantitatively examine factors influencing AI adoption, including looking at patterns of previous technology adoption (Edberg & Beck, 2020, p. 24). The two most popular models for studying Technological Adoption are the Technology Acceptance Model (TAM) by Davies (1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003). While UTAUT takes into account aspects that affect technology acceptance and usage, such as demographics and social influence, TAM focuses on the reasons why people accept or reject a particular technology. According to TAM, users' behavioural intentions (which are based on their perceptions of the technology's utility and simplicity of use) predict whether or not it will be accepted by the community (Davis, 1989).

Both these models are primarily based on the theory of reasoned action (TRA) (Dwivedi, 2020). The TRA proposes that unpredictable behaviours like *adoption* can be explained by *behavioural intention*, and these intentions can be traced back to *existing attitudes* and *subjective perceptions* that have already been developed and can be measured (Hale et al. (2002, p. 260). This theory was constructed and verified by the authors to try and offer an explanation for seemingly inherent or “volatile” behaviours. Therefore, to study adoption, first one must

understand artists' attitudes towards AI and if they already use it in their daily lives. In a study about ChatGPT adoption among professionals, Hasan et al. (2023, p. 193) found that attitudes towards AI use positively contributed to actual AI use combined with the TAM framework's behavioural intention variable. This suggests that not only do positive attitudes towards AI encourage its use, but when these attitudes are coupled with a strong intention to use AI (as predicted by the TAM framework), the likelihood of actual adoption significantly increases. These findings were also confirmed by Kelly et al. (2023, p. 30). Hence, replicating this expectation in the context of Art AI we frame, **H5:** *Attitude towards AI (art) positively affects the actual use of generative AI (art) among artists.*

Additionally, AI is the next step in evolving technical systems. But even so, popular discourse continuously highlights the risks and threats of this newest automation (Cheatham et al., 2019, pp. 3-4; Cheng et al., 2022, p. 2, Dahlin, 2021). It was noted that people do not view risks and benefits as black-and-white opposites when studying the social acceptance of various technical systems (Macnaghten et al., 2015, p. 10). Instead, most users proceed cautiously with new technology, ensuring that it aligns with their moral values, genuinely benefits them, and avoids unforeseen risks. A drawback of older adoption models is that they do not take into account context-specific sociocultural and individual personality factors (Malatji et al., 2020, p. 116).

Building on these perspectives, a newer technology acceptance model called the AI device use acceptance model (AIDUA) has also been devised (Gursoy et al., 2019). This model is built on the theory that user acceptance and rejection can exist simultaneously (Kelly et al., 2023, p.3). Furthermore, Gursoy et al. (2019, p. 159) also take into primary consideration the role of emotional decision-making. Hence, they instead focus on the complete user journey, partitioning it into three levels of appraisal to gauge intrinsic and extrinsic motivators for AI technology acceptance (Gursoy et al., 2019, p.159). The first stage of primary appraisal consists of social influence and different personal motivations (akin to affinity to use tech). The second stage involves appraising these factors against performance expectations and effort expectancy, which creates specific emotions. These emotions then lead to the final outcome stage, where the

technology is either rejected or accepted (Gursoy et al., 2019, pp. 159-161). This shows a trend of changed parameters of user acceptance when it comes to the evaluation of technical systems that engage with AI. Extending these factors, technological affinity acts alongside other drivers to positively influence adoption (Kim, 2008, pp. 64-66, Trautwein et al., 202, p. 37). Hence, we formulate the hypothesis, ***H6****: High technological affinity is associated with positive attitudes towards AI-generated art programs among artists.*

2.5 Gender and AI Art

Nevertheless, a subtle bias in art appreciation has emerged, in that people who think AI cannot create art repeatedly ranked AI art lower in quality across all categories like composition, style, aesthetic value and more (Hong & Curran, 2019, p. 77). This bias is even stronger when it is a woman looking at the art. Although this bias was considered when women were merely passive audiences of art, the situation changed when women actively started engaging more with AI technologies. Various studies have often resulted in conflicting outcomes regarding the effect of gender on the attitude towards AI and its adoption. Females of all ages including students have consistently shown less trust in AI than men (Costa, 2023; Mauritz et al.,2023). When it comes to accounting students, Nouraldeen (2022, p. 9) found that male students have a higher overall rate of AI adoption. She suggests that the reason for this could be that female students from the study were not as acquainted with AI as male students and hence lacked the initial confidence required for speedy adoption. Furthermore, being a male student positively moderated different factors including the tendency to adopt new technology and perceived usefulness from the TAM framework in the case of AI but negatively moderated the factor of perceived ease of use (Nouraldeen, 2022, p. 9). For the case of students, these moderation effects suggest, ***H7****: The relationship between art students and attitudes towards AI-generated art is moderated by gender, such that the negative effect of job/role (i.e. student) has on attitude will be stronger for female-identifying students.*

Studies that looked at the general American population instead of students also partially corroborated these findings. In that, females tend to view AI less positively for some use cases like disaster management, whereas more positively for others like first respondent calls (e.g.

911) (Horowitz & Kahn, 2021, p. 15). More recently, delving into niche markets, it was found that being female affects perceived ease of use, which in turn directly affects perceived usefulness for Saudi Arabian startup professionals (Al-Ayed & Al-Tit, 2024, p. 1572). Interestingly though, if we look at previous technological innovations, like in the case of online commerce markets Li et al. (2008, p.285) observed that adoption rates for new technology were the same (30%) regardless of gender. But conversely, when looking specifically into connections with AI art, a sample of women was more open to AI (Latikka et al., 2023, p.6). Moreover, that sample also tended to have more positive attitudes toward using AI in art. This would instead suggest the following hypothesis, H*8: Female artists exhibit more positive attitudes toward AI-generated art compared to male artists.* The varying results for the connection between gender and attitudes towards AI adoption have been attributed to the misrepresentation of women and an exaggerated presence of tech-savvy men in the samples from various studies (Davison & Argyriou, 2016, p.414).

2.6 Legal Discourse

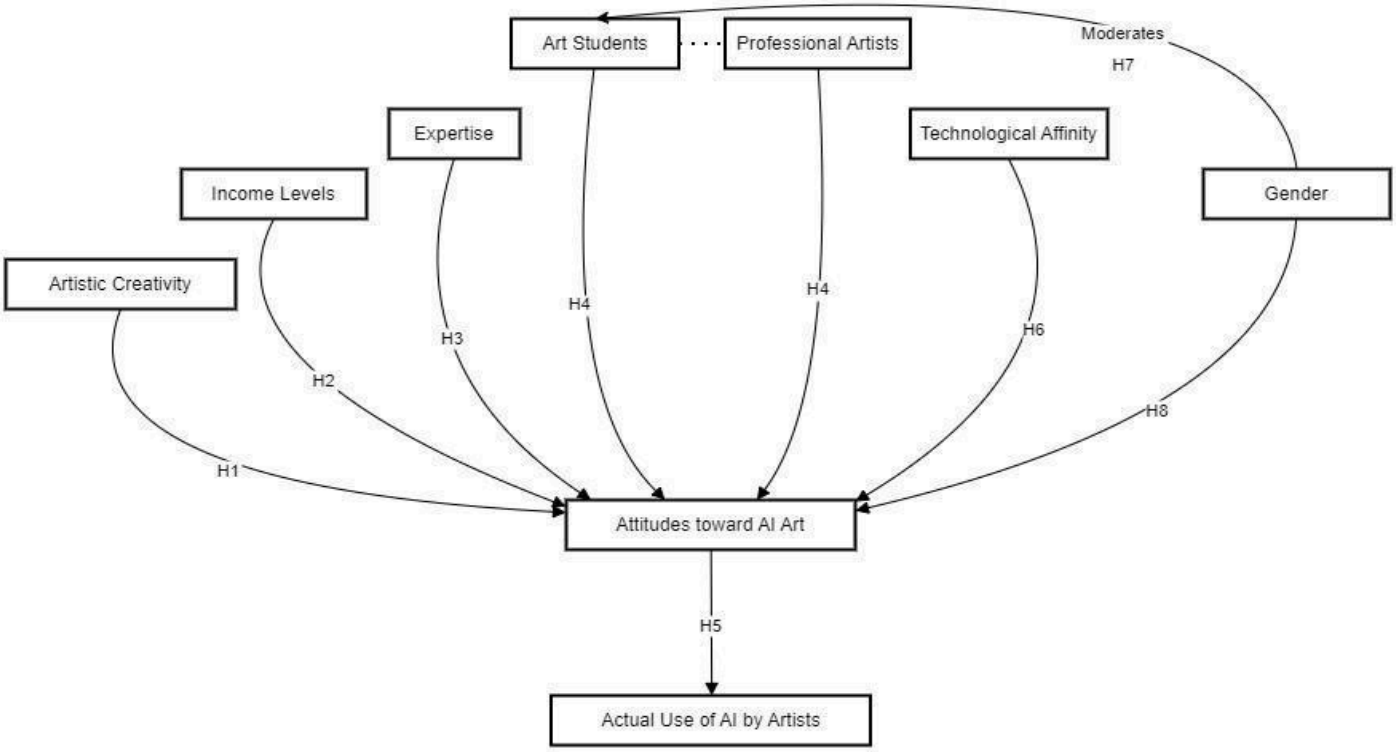
In addition to examining social perspectives, it is crucial to consider the response from judicial systems to these issues to fully understand the context of this topic. A law passed last year in both the EU and the US, that prohibited copyrights on AI art, meaning no one could claim ownership of AI art (Knibbs, 2023). Even though this is a step in the right direction towards protecting artists and their works, a robust policy to regulate the core issues surrounding these fast-paced developing models is needed. The first issue is that of potential forgery: models that are trained to replicate specific art styles can inflict notable harm on artists' reputations (Lodewijk, 2019). In particular, the tools have the potential to convincingly impersonate artists' works while propagating messages contrary to the original artists' intentions or beliefs (Jiang et al., 2023, p. 367). Secondly, similar to LLM models, visual AI models have been also shown to reflect societal biases. As presented through the 10 case studies conducted by Srinivasan and Uchino in 2021 (p. 10), biases like "the confounding bias, dataset bias, selection bias, framing effect bias, and transportability bias" are seen to be replicated by existing AI models. Lastly, the issue of stealing from artists persists; for example, Getty Images

recently filed a lawsuit against Stability AI the creator of the stable diffusion method as the AI company has been allegedly training their program over Getty artists' copyrighted images (David, 2023, paras 1-3). These legal issues surrounding AI art contribute greatly towards how artists perceive these technologies and must be taken into account when considering the issue at hand.

Based on the above discussions and hypotheses in this chapter, the following conceptual diagram (Figure 2.1) portrays various relationships among factors.

Figure 2.1

Conceptual Framework for Factors Affecting Artist's Attitudes Towards AI Art



3. Methods

3.1 Choice of Method

A mixed-method procedure was used that focused predominantly on deductive, quantitative results with one open-ended question that was later analysed qualitatively. The study was designed to assess the relationships linking various factors to attitudes towards AI art in order to answer the research question. Using this method provided three key benefits as per Burrell and Gross (2017, pp. 1378-1380): gaining insights from the world, examining phenomena that impacted people, and analysing data in conjunction with empirical inquiry. The research question was well suited to this method because artists have their global community, which allows for the collection of diverse perspectives and attitudes from a wide range of cultural and social contexts. Additionally, the quantitative approach enables the aggregation and statistical analysis of these diverse perspectives, leading to more generalizable conclusions. Even though this community is large, in many ways it still behaves like a bubble of small groups in the sense that creatives tend to prefer working alone. Artists and creatives have been known to show higher introversion and preference for an introverted thinking style on a psychological level (Gridley, 2006, p.248; Tait-Fries, 2021, p. 40). This tendency towards introversion can lead to a better chance of getting private survey responses over face-to-face qualitative data collection techniques like focus groups or interviews.

Instead, an open-ended question was included to capture any specifics. The qualitative section was placed at the end as it is usually advised to finish surveys with an open question to encourage participants to provide any additional information they believe is significant but has not been covered. This typically results in the collection of unexpected and valuable information (Braun et al., 2020, p. 8). It is also a way to generally cross-check if the findings from the quantitative part are in line with the participant's thoughts. Topic modelling and sentiment analysis were used to analyse this data. Topic modelling was chosen as it is a reliable way to handle short text data and creates individual categories that can be logically interpreted (Albalawi et al., 2020, p. 3). Sentiment analysis enhances the explainability of these results because it takes into account slang, sarcasm, etc. (Pandya & Mehta, 2020, p. 1). In addition, due

to the digital nature of the topic itself, an online survey was deemed as an efficient method to reach artists who were informed and aware of topics related to technology and digital art.

3.2 Sampling

A survey was used since gathering accurate data from a large population in a short amount of time was necessary for the research question. Non-probability sampling was employed specifically, convenience random sampling. This sampling method was chosen given that participation in the study was conditional on being an artist. This was done to reduce any biases and increase generalizability while not requiring population-level data. The risk of non-representativeness was mitigated by the attainment of a larger sample (EDC, 2021, p.2). Access to the sample was gained from social media messages to Instagram artists who were willing to post the survey's link in their stories, various subreddits related to AI Art/ artist/art students, Facebook groups, LinkedIn profiles of art teachers and professional artists, call-for-participation posters at art stores and universities, and the thesis author's connections from art events. The survey acquired $N = 351$ respondents in the period of May-June 2024. With a response rate of 57.55% for full survey completion, when expanded to respondents who had completed key measures the response rate was 84%. The last question of the survey was an open-ended qualitative question looking into any additional comments or opinions that the participants wished to mention. This was added to the recommendations received after pre-tests from different artists. 78 respondents chose to leave a comment. These were then analysed through topic modelling and sentiment analysis to have a broad overview of any specific opinions.

3.3 Ethical Considerations

The sample consisted of visual artists and art students above the age of 18. This range was chosen since even though in the EU the age of consent for data processing is 16 according to the GDPR (2021), globally it is 18. Moreover, ethical considerations were addressed by obtaining consent from all participants, informing them of guaranteed anonymity and confidentiality, and ensuring that their responses were not to be shared with any third parties. Data was collected

using anonymised survey links from Qualtrics in the form of a mobile-friendly questionnaire (Appendix A).

3.4 Reliability, Validity, and Data Analysis

As described, only validated scales from existing literature were used. For reliability, Cronbach's alpha was tested and factor loadings were observed and verified. This step was especially essential while using a new scale like the AIAS by Grassini (2023). Exploratory factor analysis was used as it helped connect theories with real-world data collected through the survey, ensuring more accurate conclusions based on empirical evidence (Mueller & Hancock, 2001). Three artists pre-tested the survey. The data was gathered using Qualtrics and processed in SPSS. Different statistical tests of comparison and correlation were used for the hypothesis testing. Parametric tests like multiple linear regression and t-tests were used in addition to non-parametric tests like the one-way ANOVA for additional results. Factor analysis was also conducted again for further exploratory analysis. All scales are aggregated by mean.

The qualitative comments were cleaned, processed and analysed in ConText, a software by Diesner (2014). The comments were parsed into different files, and then stemming and stop word removal were carried out. Lastly, a bigram analysis and topic modelling were conducted. Due to the corpus ranging on the smaller side, topics stabilised at 5 topics with 10 keywords each at 1000 iterations. The parsed data was then also used for sentiment analysis with the help of SentiStrength (Thelwall et al., 2010a). SentiStregnth was chosen as it yields more comprehensive results than Context in terms of analysing emotional argumentation. The positive scale was normalised by -1 and the negative scale by +1 to achieve a true neutral because SentiStregnth does not score with 0s. These results were then visualised using Tableau.

3.5 Survey Design

The survey begins with signing an informed consent request form. This section informs the user of the topic of the study and tells them about the age criteria for participation. Participants are assured their data will be kept private and only used for academic purposes. Expected time commitment and the voluntary nature of participation are explained along with the author's contact information for any complaints/comments. If the participants do not

consent then the survey ends. Otherwise, it continues to the next section. The first 16 questions measure art expertise. Then a matrix of nine questions measuring artistic creativity has been presented. After that, the third section again is a matrix of nine questions, this time measuring technological affinity. The next block measures the variables of attitude towards AI and actual use with a slider. First, for general generative AI and then on the same scale for Art generative AI. The last block contains demographic questions that might have been considered too personal to start with. These include age, gender, employment status, income and location in that order. The survey ends with a personal opinion question asking the participant if they'd like to mention anything else. The survey was adjusted for mobile phones and shared via an anonymous link. The survey is attached in Appendix A.

3.6 Operationalization

3.6.1 Attitudes towards AI

Attitude towards generative AI art programs were operationalized based on factors pertaining to general attitudes toward AI, namely perceived usefulness, beliefs about potential benefits, behavioural intention and societal impact. This scale has been chosen since it heavily borrows from the TAM framework that was previously discussed, an established human-computer interaction model designed by Davis (1989). Thus, attitudes were measured using the recently updated unifactorial 4-item (AIAS) AI Attitude scale, modified by Grassini (2023, p.5) from the original bifactorial 5-item reverse-coded model. The answer categories for this scale range from 1 the lowest labelled 'not at all' to 10 the highest labelled "completely agree". The three items concerning modification from the Technology Acceptance model are,

(1) I believe that AI will improve my life (perceived usefulness)

(2) I believe that AI will improve my work (beliefs about potential benefits)

(3) I think I will use AI technology in the future (behavioural intention)

and lastly, an additional factor rooted in literature pertinent to the effects of AI in context of the modern society,

(4) I think AI technology is positive for humanity (societal impact)

(Grassini, 2023, p.4)

Two variations of the AIAS were used, first to measure attitude towards general AI technology and the second to specifically measure attitude towards generative AI art technology.

3.6.2 Creativity

Creativity was conceptualised using the definition of *artistic creativity* from Kaufman (2012, 298) and measured using the scale he created titled Kaufman Domains of Creativity Scale (K- DOCS). It is a 5-item scale with 50 items, in which sets of 9 -11 items concern each type of creativity: Self, Scholarly, Performance, Mechanical, and Artistic Kaufman (2012, p. 302). Items 41 to 50 correspond to "artistic creativity". The last (5^{th}) factor containing 9 items grouping "artistic creativity" was used for this research. For example, three of the highest loading statements in this group were as follows, "Making a sculpture or piece of pottery", "Sketching a person or object", and "Drawing a picture of something I've never actually seen (like an alien)" (Kaufman, 2012, p.303). Other six statements were, "Doodling/Drawing random or geometric designs, making a scrapbook page out of my photographs, taking a well-composed photograph using an interesting angle or approach, appreciating a beautiful painting, coming up with my own interpretation of a classic work of art and enjoying an art museum."

The answer categories rate an individual participant's creativity compared to individuals of approximately the same age and life experience for each of the listed acts. For acts not specifically performed, they were instructed to estimate their creative potential based on their performance on similar tasks rated from 1 to 5 as much less creative, less creative, neither more nor less creative, more creative, and much more creative (Kaufman, 2012, p.303). All the items were measured exactly as stated in the original scale on the 5-point range.

3.6.3 Art Expertise

Art expertise was operationalised in the form of their interest, ability and performance (execution) of their art, measured using the Artistic Creativity Domains Compendium (ACDC) scale (Lunke & Meier, 2016, p.3). Originally in German, the scale was adapted to English with the help of Google Translate for the survey. The scale had 72 questions, four questions each

spread over each type of art subcategory for example visual (Painting, Photography, Graphic Design), literary (Poetry, Novel, etc.), theatre, and music. Only the 16 questions that apply to the visual arts were used for the variable of art expertise. Art interest was measured using two statements (I have a strong interest in painting/photography / graphic design/sculptures *and* I visit painting/photography / graphic design/sculpture exhibitions). Art ability and art performance were measured using one statement each respectively (I paint pictures/make artistic photos/ create graphic designs/make sculptures myself *and* I have already exhibited my paintings/photos/designs/sculptures publicly). Lunke and Meier (2016) employ a 4-point Likert range, although this study will expand it to 6 because pre-testing showed a need for a greater defined range of time frame categories. The answer categories for the first item were also adapted to be easier to understand and changed from 1 = not true at all, 2 = not true, 3 = true, 4 = completely true to 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, and 6 = strongly agree for the first statement regarding interest. On the other hand, the three remaining statements related to the frequency of action: 1 = never, 2 = rarely, 3 = occasionally and 4 = frequently were changed to 1 = never, 2 = every few years,3 = once or twice a year, 4 = once or twice a month, 5 = once or twice a week, and 6 = almost every day. Since the original scale did not offer a true neutral, the same system was followed for consistent results.

3.6.4 Technological Affinity

This variable was operationalized using the Affinity to Technological Interaction scale (ATI). This scale was designed to determine how likely an individual was to take an interest in high-technology engagement or the opposite (Franke et al., 2018, p. 1). The 9-item ATI scale consisted of six regular-coded questions and three reverse-coded questions. For example,

(1) I like to occupy myself in greater detail with technical systems.

(2) I like testing the functions of new technical systems.

(3) I predominantly deal with technical systems because I have to. (Reverse)
and so on and so forth (Franke et al., 2018, p. 3). These are all measured on the 6 levels of agreement/disagreement in line with the last variable (ACDC). With lowest = 1 being

completely disagree and highest being 6 = completely agree. The reversed items in the scales were appropriately computed in SPSS. Specifically, the reversed items were adjusted appropriately for the scale calculations (for ex. TA6 = 7 - Tech_Affinity_6), but their original (unreversed) values were used when computing the mean.

3.6.5 Other Variables

The actual use of AI was measured using one question devised in a way that was similar to the AISA scale by Grassini (2023). The statement said, "I currently use general AI/ generative AI art technologies in my daily life/work". Respondents could choose from between one to ten, from not at all to completely agree.

3.6.6 Demographic Data

Five types of major demographics, age, gender, income, location and employment status, were captured. Since this type of data is sensitive, respondents had the option to skip or N/A on all these questions. Out of the five, income was measured continuously operationalized as a percentage of income dependence on art and art-related ventures. This measure was operationalized in this manner because direct income figures could be considered sensitive information. Participants could answer this question in increments of 5% going from 0% to 100%. The rest of the questions were all categorical. Gender had five levels, male, female, trans/third, non-binary and prefer not to say. Employment had six levels, full-time, part-time, seeking opportunities, student, retired and prefer not to say. The location could be input as the participant's country's name from an autofill list. Lastly, age could be entered in digits as a whole number.

3. 7 Factor Analysis

3.7.1 Attitude towards AI (ATAI & ATAI_Art)

An exploratory factor analysis for the two scales concerning attitude towards AI was conducted. Both these analyses yielded a *unifactorial* result presenting no change in the existing scale. The exploratory analysis was performed on four items for attitude towards AI technologies in general (Table 3.1a) with principal component extraction and oblique rotation (direct oblimin) based on Eigenvalues (> 1.00), $KMO = .86$, $\chi 2$ ($N = 198$, 6) = 807.32, $p < .001$,

resulted in counting for 87.22% of the variation in attitude towards AI art with a *Cronbach's α* of .95. Similarly, specifically for attitude towards generative art AI technologies (Table 3.1b), *KMO* = .86, $\chi 2$ (N = 1, 6) = 1057.25, $p < .001$, resulted in accounting for 92.36% of the variation within the variable of attitude towards AI art with a *Cronbach's α* of .97.

Table 3.1a

Factor Loadings for Attitude towards AI (ATAI)

Items	Component 1
I believe that AI in general will improve my work.	.951
I believe that AI in general will improve my life.	.935
I think I will use general AI technology in the future.	.926
I think general AI technology is positive for humanity.	.923
R^2	.86
Cronbach's α	.95

Table 3.1b

Factor Loadings for Attitude towards AI art (ATAI_Art)

Items	Component 1
I believe that AI in generative art will improve my work.	.946
I believe that AI in generative art will improve my life.	.922
I think I will use generative art AI technology in the future.	.895
I think generative art AI technology is positive for humanity.	.935
R^2	.92
Cronbach's α	.97

Extraction Method: Principal Component Analysis. (1 components extracted)

3.7.2 Artistic Creativity

First, an exploratory factor analysis was conducted for the scale of artistic creativity drawn from the larger K-DOCS scale. Originally this scale had nine items measured on a five-point ranking each. These items were labelled as - Imagination, Sketch, Doodle, Scrapbook, Photograph, Sculpture, Appreciation, Interpretation, Experience. This measure passed all the

conditions for a-priori (nine correlation items, measured continuously on the same scale, 223 valid responses). The exploratory analysis performed on these nine items with principal component extraction and oblique rotation (direct oblimin) based on Eigenvalues (> 1.00), *KMO* = .74, $\chi 2$ (N = 223, 36) = 533.31, $p < .001$, resulted in accounting for 36.56% of the variation within the construct of artistic creativity. The analysis yields a three-factorial answer. Factor loadings of specific items onto the factors discovered have been provided in Table 3.1.

Appreciative Creativity - The first group included the last three factors connected to creativity through the appreciation of art. This included items seven through nine, regarding interpreting, appreciating and experiencing art at museums and otherwise.

Hands-On Creativity - The second element includes three items about creativity as a process of creating. This included the questions gauging activities like Doodling, Scrapbooking and Photography.

Abstract Creativity -The last group of factors is made from the items of Imagination, Sketching and Sculpture. These relate to visualising/making things one has never made before.

The data passed all Post Priori criteria with acceptable internal reliability, *Cronbach's α* for Appreciative creativity being the best at .80, adequate for Hands-On Creativity at 0.67 and minimally acceptable for Abstract Creativity at .62. But removing any item does not improve reliability and hence these scales remain unchanged.

Table 3.2

Factor Loadings of Artistic Creativity onto Three New Components Appreciative Creativity, Hands-On Creativity and Abstract Creativity.

Items	*Appreciative Creativity*	*Hands-on Creativity*	*Abstract Creativity*
Experience	.882		
Appreciation	.876		
Interpretation	.706		
Scrapbook		.869	
Photograph		.797	
Doodle		.621	
Imagination			.844
Sculpture			.757
Sketching			.526
R^2	.58	.22	.20
Cronbach's α	.80	.67	.62

3.7.3 Technological Affinity

The initial model to measure technological affinity consists of nine items that work together to measure this phenomenon continuously. Despite reverse coding, the items did not load on a singular factor. Instead, upon conducting a factor analysis on this scale, the nine items were further split into a bifactorial matrix. The first component was made of items 1,2,4,5,7 and 9. While all the reverse-coded statements came together to form the second component. The measure passed all the conditions for a-priori (nine correlation items, measured continuously with the highest 6 for each item, and 205 valid responses). An exploratory analysis was performed on these nine items with principal component extraction and oblique rotation (direct oblimin) based on Eigenvalues (> 1.00), $KMO = .84$, $\chi 2$ ($N = 204, 36$) = 950.90, $p < .001$, resulted in accounting for 49.43% of the variation within the variable technological affinity. Factor loadings corresponding to each item have been shown in Table 3.2.

Positive Technological Affinity - The first group included the five positive statements about self-reported tech usage. Such as all the items that reflected a proactive and enthusiastic engagement with new technical systems.

Negative Technological Affinity - The second component included three items that indicated a more utilitarian interaction with technical systems. This scale was concerned with whether a technical system worked, rather than understanding its underlying mechanisms.

Table 3.3

Factor Loadings of Technical Affinity onto Two New Components Positive Technological Affinity and Negative Technological Affinity.

Items	Factor Loadings	
	1	2
I like testing the functions of new technical systems.	.872	
When I have a new technical system in front of me, I try it out intensively.	.865	
I like to occupy myself in greater detail with technical systems.	.836	
I enjoy spending time becoming acquainted with a new technical system.	.811	
I try to make full use of the capabilities of a technical system.	.788	
I try to understand how a technical system exactly works.	.652	
It is enough for me that a technical system works; I don't care how or why.		.766
It is enough for me to know the basic functions of a technical system.		.703
I predominantly deal with technical systems because I have to.		.690
R^2	.49	.17
Cronbach's α	.90	.61

4. Results

4.1 Descriptive Statistics

A variety of data was gathered from the survey to represent certain variables for hypothesis testing. A general overview of the basic distribution concerning their variable names is represented in Table 4.2. Of the total valid responses (*N*= 202 of 349) 48.2% identified as male, 37.1% identified as female, 2% as Trans/third gender, 9.6% as non-binary and 3% preferred not to disclose their gender. The survey garnered answers from across 37 different countries. The US is the largest with 35.6%, followed by The Netherlands at 9.3%, The UK at 6.7% and India at 5.2%. Distribution across countries is shown in Table 4.1. For employment (*N*=197), full-time professionals made up the biggest group 45.1% followed by students at 26.2%, part-time workers at 10.3%, seeking opportunities at 9.7%, and retired at 2.6%. Other demographic variables such as age (*M* = 29.24, *SD* = 8.95) showed a relatively young sample with *Mode* = 18 and the oldest person to answer the survey being a retired artist of 61. Income dependency (*M* = 41.06%, *SD* = 42.19) shows substantial variation of 7780.00. For continuous variables, the most important values are reported in Table 4.2. Art expertise, art ability and technological affinity (negative) all had multiple modes, the lowest of which have been reported.

Table 4.1

Sample Distribution Across Different Countries

Country	Respondents (%)	Country	Respondents (%)	Country	Respondents (%)
United States	35.6	Brazil	1	Hungary	0.5
Netherlands	9.3	Japan	1	Indonesia	0.5
United Kingdom	6.7	Malaysia	1	Mexico	0.5
India	5.2	Philippines	1	New Zealand	0.5
Australia	3.1	Switzerland	1	Portugal	0.5

Germany	3.1	Ukraine	1	Romania	0.5
Italy	2.6	Austria	0.5	Serbia	0.5
Poland	2.6	Belgium	0.5	Slovakia	0.5
Canada	2.1	Costa Rica	0.5	South Africa	0.5
France	1.5	Croatia	0.5	Sweden	0.5
Russia	1.5	Denmark	0.5	Turkey	0.5
Spain	1.5	Finland	0.5		
Vietnam	1.5	Georgia	0.5		

The mean attitude towards AI (AISA) was $M = 4.49$, $SD = 2.99$ with a median of 4.00 and a mode of 1.00, suggesting a generally neutral attitude towards AI. Similarly, the mean attitude towards AI art (AISA Art) was $M = 3.54$, $SD = 3.12$ with a median of 2.00 and a mode of 1.00, which suggested a more negative attitude when compared to AISA for general AI. Both these variables accompanied by their respective SDs are the signs of a heterogeneous sample possibly with opposing views or outliers. Creativity ($M = 3.50$, $SD = 0.63$) showed low variance suggesting consistent but moderate levels of self-reported artistic creativity among participants. Out of the three subtypes of creativity, the sample scored highest on appreciative creativity ($M = 3.66$, $SD = 0.88$). In general, artists had a moderate amount of art expertise ($M = 2.70$, $SD = 0.76$) whereas technological affinity was found to be relatively high ($M = 3.90$, $SD = 0.59$) among participants. Results from hypothesis testing follow.

Table 4.2

Descriptive Statistics for All Variables

Variable Name	Mean	Median	Mode	Std. Deviation	Variance
Attitude towards AI (ATAI)	4.49	4.00	1.00	2.99	8.93
Attitude towards AI ART (ATAI_Art)	3.54	2.00	1.00	3.12	9.71

Artistic Creativity	3.50	3.56	3.67	0.63	0.40
➔ Appreciative Creativity	3.66	3.67	4.00	0.88	0.77
➔ Hands-On Creativity	3.35	3.33	3.33	0.82	0.66
➔ Abstract Creativity	3.48	3.67	4.00	0.81	0.65
Art Expertise	2.70	2.63	2.29	0.76	0.57
➔ Art Interest	3.24	3.25	3.38	0.78	0.60
➔ Art Ability	2.96	3.00	2.75	0.96	0.92
➔ Art Performance	1.88	1.50	1.00	0.96	0.92
Technological Affinity	3.90	3.92	4.08	0.59	0.35
➔ Technological Affinity Positive	4.30	4.33	4.00	1.01	1.03
➔ Technological Affinity Negative	3.50	3.67	3.00	1.00	1.00
Age	29.24	27.00	18.00	8.95	80.07
Income Dependency (%)	41.06	20.00	0.00	42.19	7780.00

4.2 Creativity and Attitude Towards AI:

A multiple linear regression was conducted to test for an inverse relationship between artistic creativity and attitude towards AI. The hypothesis formulated was,

H1: *Artists with high levels of artistic creativity are more likely to exhibit negative attitudes towards generative AI art programs.*

Hence after the factor analysis, H1's IV was partitioned:

H1a: *Artists with high levels of appreciative creativity are more likely to exhibit negative attitudes toward generative AI art programs.*

***H1b**: Artists with high levels of <u>hands-on creativity</u> are more likely to exhibit negative attitudes towards generative AI art programs*

***H1c**: Artists with high levels of <u>abstract creativity</u> are more likely to exhibit negative attitudes towards generative AI art programs*

The data obtained was used to carry out a multiple linear regression. With attitude towards AI as the dependent variable (DV). Appreciative Creativity, Hands-on Creativity, and Abstract Creativity were entered together as independent variables (IVs). The model was significant, F (3,182) = 5.803, p = .001, and explained 8.7% (R^2) of the variance in the DV. For appreciative creativity (H1a), the relationship was found to be weakly significant, b^* = -129, p = .051 (one-tailed) < .10. The effect of hands-on creativity (H1b) was significant but positive, b* = .16, p = .044 i.e. in the wrong direction. Whereas, abstract creativity (H1c) was found to be a significant negative predictor of attitude towards AI, b^* = -.252, p = .002. This means that a 1 standard deviation increase in abstract creativity is associated with a .252 standard deviation decrease in the attitude towards AI. Consequently, **H1b is rejected but H1a and H1c are accepted**. Thus, H1 is only partially accepted, artists with high levels of appreciative creativity and hands-on creativity are more likely to exhibit positive attitudes toward generative AI art programs. However, artists with high levels of abstract creativity are more likely to exhibit negative attitudes toward generative AI art programs. However, a Shapiro-Wilk test revealed deviation from normality (p < .01). Therefore, the results should be interpreted with discretion.

4.3 Income Dependency and Attitude Towards AI Art

H2: *The attitudes of artists towards AI-generated art programs are predicted by their income levels, such that those with higher incomes will have more positive attitudes.*

Two tests of linear regression were run to check for the effect of income dependency (M = 41.06, SD = 42.19) on the attitude towards AI in general, F (1, 154) = 1.162, R^2 = .007, p = .283. And for attitude towards gen AI art, F (1, 146) = 0.05, R^2 = .000. , p = .821. Both were found to be insignificant. Hence **H2 is rejected,** income does not affect artists' attitudes towards AI.

4.4 Art Expertise and Attitude Towards AI Art

H3: *Artists with less art expertise exhibit a more positive attitude towards AI art programs.*

Art expertise is made up of three factors: art interest, art ability and art performance. A multiple linear regression was performed to measure the directional effect of the totality of these three factors (art expertise) on attitude towards AI. Hence, we can formulate,

***H3a**: Artists with less art interest exhibit a more positive attitude towards AI art programs.*

***H3b**: Artists with less art ability exhibit a more positive attitude towards AI art programs.*

***H3c**: Artists with less art performance exhibit a more positive attitude towards AI art programs.*

The data obtained was used to conduct a multiple linear regression. The regression model had attitude towards AI as the dependent variable. Art interest, art ability and art performance were entered as independent. The model reached statistical significance. For the overall model, F (3,182) = 4.584, R^2 explains 7% variance, p = .004. The findings show that a decrease in art interest (b^* = -0.211, p = .023) substantially predicted an increase in positive attitudes towards AI-generated art (H3a), whereas, a decrease in art performance (b^* = 0.245, p = .006) significantly predicted attitudes towards AI-generated art but in the opposite direction (H3c). Art ability (b^* = -0.115, p = .255) did not significantly show an effect on attitude towards AI-generated art (H3b), but the prediction was in the hypothesised direction. Therefore, we **accept H3a but reject H3b and H3c**. The third hypothesis stands partially accepted.

4.5 Employment and Attitude Towards AI Art

H4: *Art students exhibit more negative attitudes towards AI-generated art compared to professional artists.*

The IV, employment status was measured categorically with six options. A comparative analysis was conducted between professional artists and art students. Cases were filtered so that the sample only included art professionals and art students actively taking classes or working in the field at the time of measurement. An independent samples t-test was conducted to compare attitudes towards AI-generated art programs between the two groups. Levene's Test for equality of variances showed that the variances were not equal between the two groups because of a positive skew and some outliers (p < .001). A Shapiro-Wilk test further confirmed that the

attitudes towards AI-generated art were not normally distributed for either group, art students ($p < .001$) and professional artists ($p < .001$), accordingly, the findings here should be treated as tentative. Therefore, the results for equal variances not assumed are reported. The t-test resulted in statistically significant differences in attitudes towards AI between the full-time professionals ($N = 56$, $M = 3.84$, $SD = 3.24$) and art students ($N = 25$, $M = 2.12$, $SD = 1.90$), t (72.962) = 2.99, p = .004. For a 95% confidence interval. The mean difference in attitudes was 1.72 units, so students had more negative views. Thus, **H4 is accepted**, art students have more negative attitudes towards AI-generated art programs than full-time artists.

4.6 Attitude Towards AI Art and Actual Use

H5: *Attitude towards AI (art) positively affects the actual use of generative AI (art) among artists.*

A simple linear regression was used to determine the link between artists' attitudes towards AI (IV) and their actual usage of generative AI art programs (DV). According to the results, a strong positive relationship was found. The model was found to be significant F (1,180) = 922.99, b^* = .92, p < .001 and R^2 showed that 83.7% of the variance in the actual use of AI can be explained by attitude towards AI art. For general ATAI as independent and actual use (art) as independent, F (1,196) = 463.26, b^* = .84, p < .001 and R^2 showed that 70.3% of the variance in the actual use of AI can be explained by attitude towards AI art. **H5 is accepted**. This means that for both general and art AI those who have a more positive attitude towards AI are more likely to use AI in their work and daily lives.

4.7 Technological Affinity and Attitude Towards AI Art

H6*: High technological affinity is associated with positive attitudes towards AI-generated art programs among artists.*

Hypotheses after Factor Analysis are, H6's IV was partitioned:

H6a: *High positive technological affinity is associated with positive attitudes towards AI-generated art programs among artists.*

H6b: *High negative technological affinity is associated with positive attitudes towards AI-generated art programs among artists.*

A multiple regression analysis was conducted to look for the relationship between technological affinity and attitudes toward AI-generated art programs among artists. positive technological affinity and negative technological affinity were entered as independent and attitudes toward AI-generated art programs as dependent. The overall model was significant, F (2, 183) = *5.441*, p = .005, indicating that the predictors, positive technological affinity and negative technological affinity, together explain a 5.6% variance in attitudes toward AI-generated art programs. Positive technological affinity was found to be a significant predictor, b^* = .247, p = .001. This result suggests that for a 1 standard deviation increase in positive technological affinity, there is a .247 standard deviation increase in the attitude towards AI, showing a positive relationship. Conversely, negative technological affinity was not a significant predictor, b^* = .044, p = .558, so there is no relationship between negative technological affinity and attitudes toward AI-generated art programs. This result **supports the hypothesis H6a**, higher *positive* technological affinity is associated with more positive attitudes toward AI-generated art programs but **rejects H6b**, higher *negative* technological affinity does not positively predict attitudes. H6 is partially accepted.

4.8 Gender Moderation Hypothesis

H7*: The relationship between art students and attitudes towards AI-generated art is moderated by gender, such that the negative effect of job/role (i.e. student) has on attitude will be stronger for female-identifying students.*

A multiple regression was used to assess the effects of being an art student, gender, and their interaction on attitudes toward AI-generated art. The results for the first model F(2, 153) = 5.54, R^2 = 6.8%, p = .005 were significant. Yet, the second model, which included the interaction term (IsStudent* IsFemale), showed no increase in explained variance F (1, 152) = 3.673, R^2 = 6.8%, p = .918. The results indicated that while the main effects of being a student and being female were significant, the interaction term was not. Therefore, the results do not support the hypothesis that gender moderates the relationship between art students and attitudes toward AI-generated art. **H7 is rejected**.

4. 9 Gender and Attitude Towards AI Art

H8: *Female artists exhibit more positive attitudes toward AI-generated art programs compared to male artists.*

Gender was measured categorically in 5 groups. The first two groups *male* and *female, were* compared to look for any significant differences between their attitudes towards AI art. Levene's test for equal variances was significant $p < .001$. An independent samples t-test was conducted. The test assessed differences in attitudes toward AI-generated art programs between the two gender groups. The results revealed a statistically significant difference *(*t (153.773) = 2.224, $p = .028$) between males ($N = 80$, $M = 4.27$, $SD = 3.46$) and females ($N = 76$, $M = 3.17$, $SD = 2.71$) for 95% confidence interval. This suggests that females have ***more negative*** attitudes towards AI as compared to males. Apart from females, non-binary individuals also had more negative attitudes as compared to males (t (153.773) = 2.224, $p = .028$). However, for the eighth hypothesis, as the difference was not in the hypothesised direction, **we reject H8**.

4.10 Topic Modelling and Sentiment Analysis

One open-ended question inquiring about specific comments on AI art was asked in the survey. 76 participants left comments with their personal experiences and opinions. This data was parsed and entered into a topic modelling process with ten keywords each for five different topics. The topics found in the corpus were Practical Challenges (61.02%), Personal Stories (11.83%), Intellectual property and Plagiarism (10.22%), Criticism about automation of art (9.68%), and Detrimental outlook (7.25%). A detailed explanation of all these themes follows in Table 4.3. Bigram Analysis found a total of 1203 bigrams of which the first four bigrams were all related to generative AI art, generative + AI (18 instances), AI + art (8), AI + generate (6), and Generative + AI (4). Some other word pairings of interest were, automate + creative (3), artist + work (3), and replace artist (3); all had negative connotations. Lastly, two bigrams, DeviantArt + Artstation and Adobe + Generative shift the onus of responsibility towards corporations and platforms that allow the misuse of artist's work.

Table 4.3

Topic Modelling for Artists' Attitudes Towards AI Art

Topic Name (%)	Topic Weight	Topic Words	Topic Description	Comment Example
1. Practical Challenges (61.02%)	2.27	art - artist - work - generative - make - creative - people - image - thing - human	Discussed the practical limitations of AI in professional use such as biases and the lack of nuance. The varying impacts on different art-related professions (like graphic design, tattooing, baking). Lastly, the broader implications for job opportunities and work conditions are mentioned.	"The use of generative AI in my line of work (graphic design) is minimal right now. It's just not good enough to use for a lot of things." "By the way things are going now, AI does not seem to be opening up any job opportunities, it's not making life easier or improving work conditions for the average person….."
2. Personal Stories (11.83%)	0.44	field - talent - stem - illegal - server - necessarily - draw - argument - detrimental - hobbyist	The narration of an artist's personal experience with using different generative AI software. Hobbyists and non-artists also weigh in on this topic.	"I am studying STEM at a university right now, although I am not necessarily studying the arts, I find anything ai related a disgrace to the human experience and human expression….." "I am a hobbyist; hobbyists may have their own reasons for disliking AI image generators that do not relate to job loss".
3. Intellectual property and	0.38	open-source - regulation - money - time -	This topic mentions the complexities surrounding intellectual property and the ethical concerns	"I fundamentally do not respect the concept of Intellectual Property. I am against someone having a monopoly on all copies of an

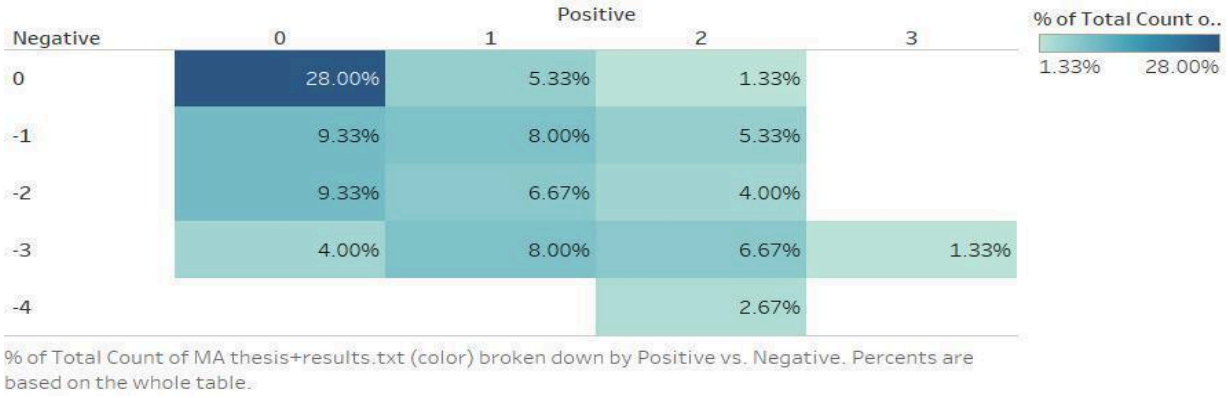
Plagiarism (10.22%)		potential - fraud - copy - property - illustration - job -	that come with AI in art. Two sides are represented in this topic, one that disapproves of IP rights and other that views AI-generated art as plagiarism.	infinitely copy-able item such as a piece of art or a medical formula. Copying is not theft as the ""owner"" does not lose any property. I however do support trademarks and am against fraud." "AI used to 'make art' is plagiarism, end of story. It creates nothing novel, only regurgitates a feather from every bird it's seen ever fly, to use a figure of speech. It steals other artists' work and takes the credit."
4. Criticism about automation of art (9.68%)	0.36	base - hand - people - source - live - day - task - build - bro - life-	This section highlights comments that talk about scepticism towards the use of generative AI in creative ventures. Respondents worry about the automation of tasks traditionally associated with human creativity. Comments that seem to express a sense of loss regarding the enjoyment of the creative process due to the prevalence of AI-generated material online are included too.	"Generative AI is all built on stolen artwork, there was no need to automate a creative, fun process. There are soulless jobs that need automation yet we take the one most ppl actually enjoy. the internet is full of air generated trash now…" "AI is the anti-life equation."

5. Detrimental outlook (7.25%)	0.27	commissio n - danger - skill - artisanship - http - contact - artist - upcoming - uploaded - decade -	In this section, artists comment about how they envision a dystopian future if nothing changes. Comments make a case for how technological advancements, driven by capitalist forces, will reshape the artist's economic landscape for the worse.	"General AI was meant to take care of mundane tasks, so people can explore their creativity more. It was supposed to make our lives easier. Instead, it is used to exploit us more by speeding up our work - so we can work even more, and to replace humans altogether. It's not AI that is the problem - people's greed and lack of morality and empathy is." "Humanity stands out through our artistic output. By automating the process of creativity in the arts, to the extent that human artists can be replaced, generative AI goes against the spirit of humanity. "

All of these topics were made up of largely negative comments and focused on the detrimental side of gen AI art. Similarly, sentiment analysis results show that 28% of comments were wholly neutral, while a total of 6.66% of comments were fully positive in contrast to 22.7% of completely negative comments. In addition, while the most negatively rated comments were at -3,+0 and -4,+3; the most positive comment stood at a +2,+0. Hence this sample of artists' comments about AI art sways to more negative emotions. The detailed output table is in Figure 4.1.

Figure 4.1

Sentiment Analysis for Artist's Attitudes Towards AI Art



One of the most *negative* comments (-3) is, "It's a complicated one as a digital artist. I fear AI art as a tattoo artist it comes to use now and then (but still rarely because AI does not understand anatomy)". The most *positive* comment (+2) is, "I do not believe AI is a danger to art. It is my understanding it is a danger to artisanship. AI can compete with tasks that are commissioned, not creations that are endemic to the artist. It is true that an artist being commissioned has the ability to take ownership of the demands and guidelines and create art when he is being commissioned." Although this comment does view AI in a comparatively positive light, it is important to note that there is a certain negative connotation that might have been alluded to as a total positive score in the end due to the overall wordiness of the statement. In other cases, statements like "ai sux" have been given a neutral score due to the non-recognition of some slang by SentiStrength. It has been noted by researchers that this method of sentiment analysis has up to 60%-73% accuracy (Thelwall et al., 2010b, p.19). Hence the results should be interpreted in this context as such.

4.11 Additional Findings

4.11.1 Factor Analysis: Attitude towards AI art (ATAI_Art) + Actual Use

An exploratory factor analysis was performed with the four original items from the AIA scale by Grassini (2023) and actual use (art) as the fifth factor. The data passed pre-priori with principal component extraction and oblique rotation (direct oblimin) based on Eigenvalues (> 1.00), $KMO = .90$, $\chi 2$ ($N = 10, 182$) = 1373.03, $p < .001$, accounted for 91.30% of the variation in

attitude towards generative art AI. *Cronbach's α* was = .98 and the pattern matrix gave a unifactorial result. Hence the new five-item scale is found to be reliable and valid. This new scale could be tested and used as a measure to gauge attitudes towards generative art AI. For general AI technologies, the same test based on Eigenvalues (> 1.00), *KMO* = .89, $\chi 2$ (*N* = 10, 198) = 1068.88, $p < .001$, with a *Cronbach's α* was = .95 resulted in, 84.85% of the variation in attitude towards generative AI in general. Factor loadings are detailed in Appendix B.

4.11.2 Paired t-test (difference between ATAI and ATAI_Art)

A paired samples t-test was conducted comparing general attitudes towards AI and attitudes towards AI art programs. The results showed a significant difference in the group means t (80) = 6.03, $p < .001$. For ATAI (M = 4.26, SD = 1.40) and for ATAI_Art (M = 3.32, SD = 1.20). The mean difference between the two conditions was 0.94 (95% *CI* [0.63, 1.25]), meaning on average, general attitudes towards AI were more positive compared to attitudes towards AI in art for a sample made up of almost 60% of artists. This suggests that participants generally had a more favourable view of AI in a broader context than specifically in the context of their field (art).

4.11.3 ANOVA test for the relationship between age and attitude towards AI

People aged from 18 to 61 answered the survey, hence they were further divided into four categorical groups spanning 10 years each. These were as follows,

Group 1: Young Adults (Ages 18 to 28)

Group 2: Adults (Ages 29 to 39)

Group 3: Middle-aged adults (Ages 40 to 50)

Group 4: Seniors (Ages 51 to 61)

An ANOVA was performed to compare the differences between attitudes towards AI among four age groups. The test was significant $F\ (3,180)$ = 3.95, p = .009, indicating that there are differences in AI attitudes among the different age groups. Tukey's post hoc test revealed there was a weakly significant difference between group 1 (young adults) and 2 (adults) (p = 0.050). Adults have a more positive view of AI art technologies than young adults. There is no significant difference between other groups.

4.12 Summary of Hypothesis Testing

Table 4.3

Summary of Hypothesis Testing

Number	Hypothesis	Significance	Result
H1 *H1a* *H1b* *H1c*	High artistic creativity → negative attitudes	-	Partially Accepted
	High appreciative creativity → negative attitudes	Significant	Accepted
	High hands-on creativity → negative attitudes	Significant but in the opposite direction	Rejected
	High abstract creativity → negative attitudes	Significant	Accepted
H2	High income → positive attitudes	Not Significant	Rejected
H3 *H3a* *H3b* *H3c*	Low art expertise → positive attitudes	-	Partially Accepted
	Low art interest → positive attitudes	Significant	Accepted
	Low art ability → positive attitudes	Not Significant	Rejected
	Low art performance → positive attitudes	Significant but in the opposite direction	Rejected
H4	Negative attitudes: art students → professional artists.	Significant	Accepted
H5	Attitudes → actual use	Significant	Accepted
H6 *H6a* *H6b*	High technological affinity → positive attitudes	-	Partially Accepted
	Higher positive technological affinity → positive attitudes	Significant	Accepted
	Higher negative technological → positive attitudes	Not Significant	Rejected
H7	Art students → (gender) → negative attitudes	Not Significant	Rejected
H8	Negative attitudes: male **>** **f**emale	Significant but in the opposite direction	Rejected

5. Discussion

This thesis set out to answer the question: *what attitudes do visual artists have towards generative AI art programs, and what factors influence these attitudes*? It is important to contextualize the results in terms of their real-world consequences to gauge the full effect of generative AI on the art industry.

5.1 Theoretical Implications

Implications from the creativity hypothesis (H1) are twofold. Artists with high levels of appreciative and abstract creativity are more likely to exhibit negative attitudes toward generative AI art programs in support of H1a and H1c. However, artists with high levels of hands-on creativity are more likely to exhibit positive attitudes toward generative AI art programs (H1b). While *appreciative creativity* is linked to the appreciation of creative works, *abstract creativity* is composed of activities related to imaginative thinking. *Hands-on creativity* is associated with the very process of creating art. This adds to the discourse of creativity as a cognitive concept with constantly varying and evolving definitions throughout the years rather than an extension of the functionalist versus constructivism debate (Cropley, 2019, p. 2-3). The facet of creativity that AI seems to be taking over is more so the making or the hands-on, because as noted previously gen AI still lacks in the "novelty" aspect of creativity due to the nature of machine learning (Mukherjee & Chang, 2023, p. 14).

Additionally, we saw that artists largely use these programs to brainstorm ideas and not because they lack practical skills (Wingström et al., 2022, p. 188). Hence it is possible to conclude that artists who are adept at the practicalities of their art (for example, the actual act of sketching) have less of a resistance to AI as they can incorporate it in their brainstorming process. On the contrary, artists who rely heavily on imaginative thinking may perceive AI as a threat to their creative identity. This aligns with theoretical models that emphasise the importance of identity, self-efficacy and self-concept in technology adoption (Granić, 2023, pp. 845, 850).

Secondly, we found that artists with low levels of *art interest* are more likely to exhibit positive attitudes toward generative AI art programs (H3a) while those with low levels of *art*

performance show more negative attitudes (H3c). *Art ability* has no effect (H3b). In the big picture, this finding translates to the fact that artists who are less invested in their art like hobbyists or those just starting care less about the ramifications of generative art AI. On the other hand, those who lacked art performance, i.e., in this case, lacked the opportunities to showcase their art, hold negative feelings towards AI art. Awareness about AI technologies had a positive effect on seeing applications of AI in different fields in a better light (Owsley & Greenwood, 2022, p. 428). Although the awareness study focused on AI in writing and journalism, similar observations can be deduced for art, showing that generative AI in art encounters some of the same adoption issues as text-based AI. In addition, the mean for attitude towards general AI tech was higher by one point than the mean for attitude towards AI art technologies, for this sample of practising artists as confirmed by the paired t-test in additional findings. This implies that there is a link between the perception of AI based on personal involvement and awareness of the subject. The less AI personally affects individuals the less likely they are to oppose its uses and applications.

All of these different factors affecting attitudes towards AI art ultimately impact the actual use and adoption of these technologies in daily life. A strong positive connection was found between the two, meaning a better view of generative art programs leads to artists' integrating them more into their professional and personal lives. Additionally, a factor analysis model also showed that actual use when added to the AI attitudes scale, works in perfect coalition to be part of a unifactorial predictor; hence similar to other extended technology adoption models (for example UTAUT2 by Venkatesh et al., (2012)), actual use could also be tested as an addition to Grassini's (2023) AIA scale in further research. Moreover, we could relate this to the finding that higher *positive* technological affinity is associated with more positive attitudes toward AI-generated art (In accordance to H6a), meaning that people/artists who are more technologically dispositioned, i.e., are curious about the ins and outs of new technologies are more likely to be drawn to actually testing and incorporating these technologies. On the other hand, the negative aspects of technological affinity do not affect attitudes towards AI art programs (H6b rejected), meaning people who are not technologically

oriented do not let their bias taint their view of AI. This finding can be investigated further, along with testing for other biases towards AI.

5.2 Societal Implications

Furthermore, art students have twice as much negativity in their views of AI as compared to full-time professionals, in support of H4. The mean age for art students was 18 while for professionals was 32. Additional findings also showed that overall, young adults (ages 18 to 28) had more negative views of AI compared to adults (ages 29 to 39). So, this finding contradicts the long-believed observation that age and tech adoption are negatively correlated (Berkowsky et al., 2017, p.11). This can be attributed to the present situation where there is a strong dialogue about unemployment, job loss due to automation and artists' rights (Carter, 2023, para 2). The company Meta recently announced that it will be using all its Instagram users' images to train its generative AI. The statement from the company reads, "*...We'll now rely on the legal basis called legitimate interests for using your information to develop and improve AI at Meta…We're including updates in our Privacy Policy to reflect these changes. The updates go into effect on June 26, 2024*." (Meta, 2024). In response, thousands of artists have quit the platform and have been moving their artwork to the Cara platform. One of the art students in the study, a 22-year-old female art student from the Netherlands left a comment explaining how a design company she interns at replaced some entry-level job positions with generative AI and how that came as a shock to her colleagues. The result of resentment from such events appears to affect the attitudes towards AI art.

Apart from age, female and non-binary artists had more negative views about AI art programs as compared to male artists. This could be because women value ease of use over performance (Aguirre-Urreta & Marakas, 2010, p. 169). In addition, self-esteem was also related to how individuals judge new technology (Aguirre-Urreta & Marakas, 2010, p. 172; Orser & Riding, 2018, p. 8). Women had lower belief in their capacities to use technology (Orser & Riding, 2018, p. 9). Socially, women were also less encouraged to engage with technology because it was seen as a more male trait (OECD, 2018, p.13).

Finally, we found that artists have a negative view of generative art AI applications. Some factors like creativity, expertise and technological affinity affect this outlook. However, none of them had a very strong effect. But all of them when come together work to explain a large amount of variance in attitudes. This means that attitude towards AI is a complex and multifaceted subject that is dependent on personal, external, circumstantial as well as other factors yet to be found.

5.3 Directions for Future Research

For this thesis, creativity was operationalized from Kaufman's definition (Kaufman, 2012, p.299) with the scale of creative compendium. Only one part of the five-part scale was used for brevity and relevance. This scale is modelled after the Big 5 personality test (Kaufman, 2012, p.300). Hence relationships between artists' personality types and their attitudes towards AI adoption can be tested using the expanded 50-item scale. Similarly for art expertise, Lunke and Meier's (2016) scale was isolated to expertise in the visual arts. Similar studies can be conducted for all of the arts. For example, other sectors like music and theatre are also being affected by the developments in generative AI. The movement for and against generative AI is seen to be largely online (specifically on Instagram for now). Thus, an analysis of social media posts regarding the topic might help get a better grasp on the exact reasons for the generally negative attitude towards AI. Creativity in itself is a strongly debated topic (Runco & Jaeger, 2012, p. 2). Hence a study looking into how people perceive machine versus human creativity might prove to be worthwhile.

5.4 Limitations

Almost all participants of this study were recruited from the internet, which affects two things. First, older artists in farther places with no access to the web or those who do not use social media might have been excluded from the sample. Secondly, those with a predisposition to liking technology, being a part of online discussions/surveys and already having a strong opinion on the topic could have been selected. It is important to note that the limitation is not only because of the restricted range of technological attitudes reflected in the sample but also

because of the need to determine if the observed variation is consistent with a larger population that includes offline artists. Further testing is necessary to ensure this consistency.

Another limitation was that almost 40% of respondents did not fully complete the survey so the entirety of their opinion could not be gauged. Such incomplete data may introduce bias to the results, especially if individuals who did not complete the survey had viewpoints that differed strongly from those who did fill it. The data could be subject to MNAR errors (missing not at random), which implies that the missing data pattern may have been connected to the variables in a way that skews the results.

5.6 Further Societal Relevance

It was found that attitudes toward AI art are a rather complex topic to pinpoint, and are formed from the contribution of various factors related to the artists' personalities, life experiences and previous use of technology. In addition, there is a low influence of socio-demographic factors like gender, income or location. Instead, similar to previous waves of automation, artists keep a united front in their attitudes against AI. The automation of processes previously thought to be intrinsically human such as creativity, intelligence and art is more than just a social issue. The effects of this technology are changing the very definition of what it means to be human. In a world where machines can create, represent and manipulate human emotions through art there is a thin line to walk between renaissance and the rise of machines. Machines were made primarily to benefit humans, to make their lives easier not to replace humanity. This situation brings to mind the quote by the artist Joanna Maciejewska (2024) on X "*I want AI to do my laundry and dishes so that I can do art and writing, not for AI to do my art and writing so that I can do my laundry and dishes*." This sentiment should guide our approach as we continue to integrate AI into our creative processes. Thus, as we participate in the rapidly developing web of AI and art, it is imperative to remind ourselves that technology was meant to complement human creativity not replace it for capitalistic gain.

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Appendix A

Artists' Attitude towards Gen AI: Survey Flow

Block: Consent and Art_Expertise (9 Questions)

Standard: Artistic Creativity (1 Question)

Standard: AI and Tech (3 Questions)

Standard: Demographics (10 Questions)

Standard: Personal Opinion (1 Question)

Start of Block: Consent and Art_Expertise

CONSENT REQUEST FOR PARTICIPATING IN RESEARCH: You are invited to participate in survey research about the effect of Generative AI such as DALL-E or Midjourney on artists and the art industry. The purpose of the study is to gain insight into artists' attitudes and experiences concerning Artificial Intelligence. You must be 18 or older to participate in this survey. If you agree to be in this study, you will complete an online survey. The questions in the survey will relate to your previous experiences. Your responses will be used only for academic purposes.

RISKS AND BENEFITS: There are no risks associated with participating in this research.

TIME INVOLVEMENT: The survey will take 10-15 minutes. You may interrupt your participation at any time.

PARTICIPANTS' RIGHTS: If you decide to participate in this project, please understand your participation is voluntary, and you have the right to withdraw your consent or discontinue participation at any time without penalty. Your privacy will be maintained in all writings and data resulting from the study. Your responses are anonymous and confidential.

CONTACTS AND QUESTIONS: If you have questions about your rights as a study participant or are dissatisfied at any time with any aspect of this study, you may contact

–anonymously, if you wish— Maitreyee Deshmukh, 642544md@eur.nl

SIGNING THE CONSENT FORM: I give consent to participate in this study.

o Yes, I consent. (1)

o No, I do not consent. (2)

Skip To: End of Survey If CONSENT REQUEST FOR PARTICIPATING IN RESEARCH: You are invited to participate in survey research... = No, I do not consent.

1A- Art_Interest Please indicate the extent to which you disagree/agree with the following statements.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Agree (5)	Strongly agree (6)
I have a strong interest in **painting**. (1)	o	o	o	o	o	o

1A Art_Expertise For each item, choose the level of activity that most closely matches your actual level.

	Never (1)	Every few years (2)	Once or twice a year (3)	Once or twice a month (4)	Once or twice a week (5)	Almost everyday (6)
I visit **painting**	o	o	o	o	o	o

exhibitions. (1)						
I **paint** pictures. (2)	o	o	o	o	o	o
I have already exhibited my **pictures** publicly. (3)	o	o	o	o	o	o

1B Art_Interest Please indicate the extent to which you disagree/agree with the following statements.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Agree (5)	Strongly agree (6)
I have a strong interest in **sculptures**. (1)	o	o	o	o	o	o

1B Art_Expertise For each item, choose the level of activity that most closely matches your actual level.

	Never (1)	Every few years (2)	Once or twice a year (3)	Once or twice a month (4)	Once or twice a week (5)	Almost everyday (6)
I visit **sculpture**	o	o	o	o	o	o

exhibitions. (1)						
I make **sculptures** myself. (2)	o	o	o	o	o	o
I have already exhibited my **sculptures** publicly. (3)	o	o	o	o	o	o

1C Art_Interest Please indicate the extent to which you disagree/agree with the following statements.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Agree (5)	Strongly agree (6)
I have a strong interest in **photography**. (1)	o	o	o	o	o	o

1C Art_Expertise For each item, choose the level of activity that most closely matches your actual level.

	Never (1)	Every few years (2)	Once or twice a year (3)	Once or twice a month (4)	Once or twice a week (5)	Almost everyday (6)
I visit **photo** exhibitions. (1)	o	o	o	o	o	o
I make artistic **photos** myself. (2)	o	o	o	o	o	o
I have already exhibited my **photos** publicly. (3)	o	o	o	o	o	o

1D Art_Interest Please indicate the extent to which you disagree/agree with the following statements.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Agree (5)	Strongly agree (6)
I have a strong interest in **graphic**	o	o	o	o	o	o

design. (1)	

1D Art_Expertise For each item, choose the level of activity that most closely matches your actual level.

	Never (1)	Every few years (2)	Once or twice a year (3)	Once or twice a month (4)	Once or twice a week (5)	Almost everyday (6)
I visit **graphic design** exhibitions. (1)	o	o	o	o	o	o
I create **graphic design** art (e.g. posters) myself. (2)	o	o	o	o	o	o
I have already exhibited my **graphic design** art publicly. (3)	o	o	o	o	o	o

End of Block: Consent and Art_Expertise

Start of Block: Artistic Creativity

Q. Compared to people of approximately your own age and life experience, how creative would you rate yourself for each of the following activities? For activities that you have not specifically done, estimate your creative potential based on your performance on similar tasks.

	Much less creative (1)	Less creative (2)	Neither more nor less creative (3)	More creative (4)	Much more creative (5)
Drawing a picture of something I've never actually seen (like an alien) (1)	o	o	o	o	o
Sketching a person or object (2)	o	o	o	o	o
Doodling/drawing random or geometric designs (3)	o	o	o	o	o
Making a scrapbook page	o	o	o	o	o

out of my photographs (4)					
Taking a well-composed photograph using an interesting angle or approach (5)	o	o	o	o	o
Making a sculpture or piece of pottery (6)	o	o	o	o	o
Appreciating a beautiful painting (7)	o	o	o	o	o
Coming up with my own interpretation of a classic work of art (8)	o	o	o	o	o
Enjoying an art museum (9)	o	o	o	o	o

Block: Tech Affinity In the following items, we will ask you about your interaction with technical systems, in the context of your artistic practice. The term "technical systems" refers to apps and other software applications (such as Adobe Photoshop, Illustrator, Procreate, etc), as

well as any digital device.

Please indicate the extent to which you disagree/agree with the following statements.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Agree (5)	Strongly agree (6)
I like to occupy myself in greater detail with technical systems. (1)	o	o	o	o	o	o
I like testing the functions of new technical systems. (2)	o	o	o	o	o	o
I predominantly deal with technical systems because I have to. (3)	o	o	o	o	o	o
When I have a new technical system in front of me, I try it out intensively. (4)	o	o	o	o	o	o

I enjoy spending time becoming acquainted with a new technical system. (5)	o	o	o	o	o	o
It is enough for me that a technical system works; I don't care how or why. (6)	o	o	o	o	o	o
I try to understand how a technical system exactly works. (7)	o	o	o	o	o	o
It is enough for me to know the basic functions of a technical system. (8)	o	o	o	o	o	o
I try to make full use of the capabilities of a technical system. (9)	o	o	o	o	o	o

ATAI- To what extent do you agree or disagree with the following statements concerning generative AI in general, such as ChatGPT, chatbots, AI assistants, etc?

Not at all - - - - - - - - Completely Agree

1 2 3 4 5 6 7 8 9 10

I believe that AI in general will improve my life.	
I believe that AI in general will improve my work.	
I think I will use general AI technology in the future.	
I think general AI technology is positive for humanity.	
I currently use general AI technologies in my daily life. (Actual Use)	

ATAI-Art To what extent do you agree or disagree with the following statements concerning generative art AI specifically in your artistic practice like DALL-E, Midjourney etc. ?

Not at all - - - - - - - - Completely Agree Not Applicable

1 2 3 4 5 6 7 8 9 10

I believe that generative art AI will improve my life.	
I believe that generative art AI will improve my work.	
I think I will use generative art AI technology in the future.	
I think generative art AI technology is positive for humanity.	
I currently use generative art AI technologies in my daily life or work. (Actual Use)	

End of Block: AI and Tech

Start of Block: Demographics

Age- Please indicate your age in whole numbers.

_____

Gender- What gender do you identify with most?

o Male (1)

o Female (2)

o Transgender/third gender (3)

o Non-binary (4)

o Prefer not to say (5)

Employment- What is your employment status?

o Full-time (1)

o Part-time (2)

o Seeking opportunities currently (3)

o Retired (4)

o Student (5)

o Prefer not to say (6)

Display This Question: If What is your employment status? = Student

Q20 Are you an Art Student? (That is, are you currently enrolled in an art program at a school or university in which you create artwork, or are you currently taking any art classes?

o Yes, enrolled in an art program (1)

o Yes, taking art classes (2)

o No (3)

Display This Question: If What is your employment status? = Full-time

Q21 Do you create any kind of professional artwork for your current job? This could include not only painting, drawing/illustration, photography, and sculpting, but also design, UI/UX, film, CGI (computer-generated imagery)

o Yes (3)

o No (4)

Display This Question: If What is your employment status? = Part-time

Q22 Do you create any kind of professional artwork for your current job? This could include not only painting, drawing/illustration, photography, and sculpting, but also design, UI/UX, film, CGI (computer-generated imagery)

o Yes (3)

o No (4)

Display This Question: If What is your employment status? = Seeking opportunities currently

Q23 Are you looking for opportunities that require you to do professional artwork? This could include not only painting, drawing/illustration, photography, and sculpting, but also design, UI/UX, film, CGI (computer-generated imagery)

o Yes (3)

o No (4)

Display This Question: If What is your employment status? = Retired

Q24 Are you retired from a job that required you to do professional artwork? This could include not only painting, drawing/illustration, photography, and sculpting, but also design, UI/UX, film, CGI (computer-generated imagery)

o Yes (3)

o No (4)

Income- How much of your income is dependent on Art or Art-related opportunities?

Not Applicable

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

% of total income ()	

Location- What country are you currently based in? (You may enter N/A if you prefer not to say)

End of Block: Demographics

Start of Block: Personal Opinion

Q29 Is there anything else you'd like to add to this topic?

_____

End of Block: Personal Opinion

End of Survey

Appendix B

Table B1

Factor Loadings for Attitude towards AI (ATAI) + Actual Use

Items	Component 1
I believe that AI in general will improve my work.	.941
I believe that AI in general will improve my life.	.939
I think I will use general AI technology in the future.	.923
I think general AI technology is positive for humanity.	.906
I currently use general AI technologies in my daily life. (Actual Use)	.895
R^2	.84
Cronbach's α	.95

Extraction Method: Principal Component Analysis. (1 components extracted)

Table B2

Factor Loadings for Attitude towards AI art (ATAI_Art) + Actual Use (art)

Items	Component 1
I believe that generative art AI will improve my work.	.970
I believe that generative art AI will improve my life.	.962
I think I will use generative art AI technology in the future.	.953
I think generative art AI technology is positive for humanity.	.947
I currently use generative art AI technologies in my daily life. (Actual Use)	.945
R^2	.91
Cronbach's α	.98

Extraction Method: Principal Component Analysis. (1 components extracted)