Towards the Virtual: AI Beauty Pageants and Their Implications for Society

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Abstract: The dynamic growth of Artificial Intelligence is accelerating rapidly, making AI present in almost every aspect of human life. Digital assistants available on smartphones, smart homes, autonomous cars, and even recently launched AI beauty pageants. The very first Miss AI pageant, announced by the World AI Creator Awards (WAICA) program and Fanvue company, marks a new era in beauty contests. The main idea of Miss AI is to present an AI-based character, which is evaluated based on its beauty, poise, and response to typical beauty pageant questions. What makes it innovative is that Artificial Intelligence not only participates but also serves as a judge. This is because the jury, in addition to normal humans, includes virtual influencers, like Spanish digital mouse Aitana Lopez. Beauty contests have always been controversial - after all, they involve judging individuals by their appearance and setting beauty standards. However, including Artificial Intelligence in this phenomenon raises even more profound ethical questions and blurs the boundary between the virtual world and the real world. This article focuses on researching how the idea of Miss AI impacts its audience, who primarily belong to a social media-driven society. The author used content analysis and case study methods to examine the topic. Drawing on the example of one of the most popular virtual influencers, Aitana Lopez, and her increasing popularity on social media, especially on Instagram, the author reflects on the ethical implications of the Miss AI concept and its ongoing perception by society. Due to the continuous growth of AI beauty pageants, the article provides initial insights into the topic and suggests potential future developments. What can be said for certain is that recent years have brought a significant AI revolution that affects and will continue to affect a growing number of dimensions of human existence. However, this raises many concerns, increasingly centered around ethics.

Keywords: Artificial intelligence (AI), AI beauty pageant, Virtual influencer, Ethical implications

1. Introduction

The first modern beauty contests appeared in the 1920s, starting a new era of setting beauty canons. During their early years, the most significant international beauty pageant was *Miss Universe*, held in the USA (Mihăilă, 2017). Over 100 years later, a new variant of international beauty contests is emerging. Artificial Intelligence (AI) has become a part of a debatable topic - setting beauty standards. During the last few years, a *technological tsunami sweeping the globe* has been observed (Elliott, 2019). Multiple advancements in AI topic are the consequences of the Fourth Industrial Revolution (Darko et al., 2020). Various researchers have already studied the sentiment towards AI and its social and ethical implications. Bao et al. (2022) have classified AI perceptions into five segments - negative, ambivalent, tepid, ambiguous, and indifferent classes. The researchers have proven that perspectives on AI differ based on the amount of news coverage and the content that audiences engage with. Floridi and Cowls (2022) proposed a framework consisting of five principles for AI ethics, emphasizing that the development and use of AI can both positively and negatively impact society. AI can reduce or intensify existing inequalities, solve longstanding problems, or create new ones. Neudert et al. (2020) demonstrated that many people are concerned about the risks of using AI after conducting extensive studies across 142 nations. AI beauty pageants, being a new phenomenon, have not yet been studied in terms of societal and ethical implications. This led the author to fill this gap and pose the following research question - *How does social media society perceive AI beauty pageants?* Additionally, the author hypothesized that *AI beauty pageants are negatively perceived by social media society.* Apart from the introduction, the paper consists of four sections aiming to answer the underlying research question.

1.1 Introduction to AI Beauty Pageants

Miss AI, being the first AI beauty pageant, is organized by Fanvue company in collaboration with the World AI Creator Awards (WAICAs) program, whose goal is to recognize the achievements of developers using AI worldwide. The main idea of the contest is to create an AI-based model with immense popularity on social media, which is one of the components of earning the Miss AI crown. The jury consists of two real human beings – Andrew Bloch, media founder and entrepreneur, and Sally-Ann Fawcett, beauty pageant historian, as well as two AI-based virtual influencers – Emily Pellegrini and Aitana Lopez. Contestants are judged based on traditional pageantry criteria, including beauty, poise, and unique responses to questions like *if you could have one dream to make the world a better place, what would it be?,* the technology used to create them, and social media popularity. The total prize pool for the competition is $20k. At the time of writing this paper, contest entries are officially closed, and 10 finalists across the globe, including Portugal, France, Brazil or India, have been selected.

The award ceremony date is still unknown. Considering the emerging trend of AI beauty pageants, the author aimed to gather initial opinions and insights based on existing comments.

2. Research Methodology

For the purpose of investigating the formulated research question, the author used a two-prolonged approach, which consisted of content analysis and case study methods. Initially, data obtained from users' comments available on Instagram for analysis purposes has been gathered. In total, 475 comments have been collected manually from 11 different accounts (number of comments as of 1 June 2024). Two of the accounts are run by human juries, Sally-Ann Fawcett and Andrew Bloch, while the rest of the accounts are news-related. The reason why the author decided to review the comments manually is because some of the comments had to be excluded, for example, by tagging other users or off-topic content. Emojis, which appeared frequently, had to be excluded from the initial analysis in the tool but included in the manual analysis. The rationale for the author's decision not to replace the graphic forms of the emoticons with their textual name in the tool analysis is that it could distort the results in this tool, blurring the distinction between the emoji name and the actual comment. GIFs have been completely omitted in both analyses. Figure 1 represents graphically how many comments have been collected from each account. The author reviewed Instagram by searching *miss AI* and *AI beauty pageant(s)* hashtags to find the most recent and the most commented posts across the platform.

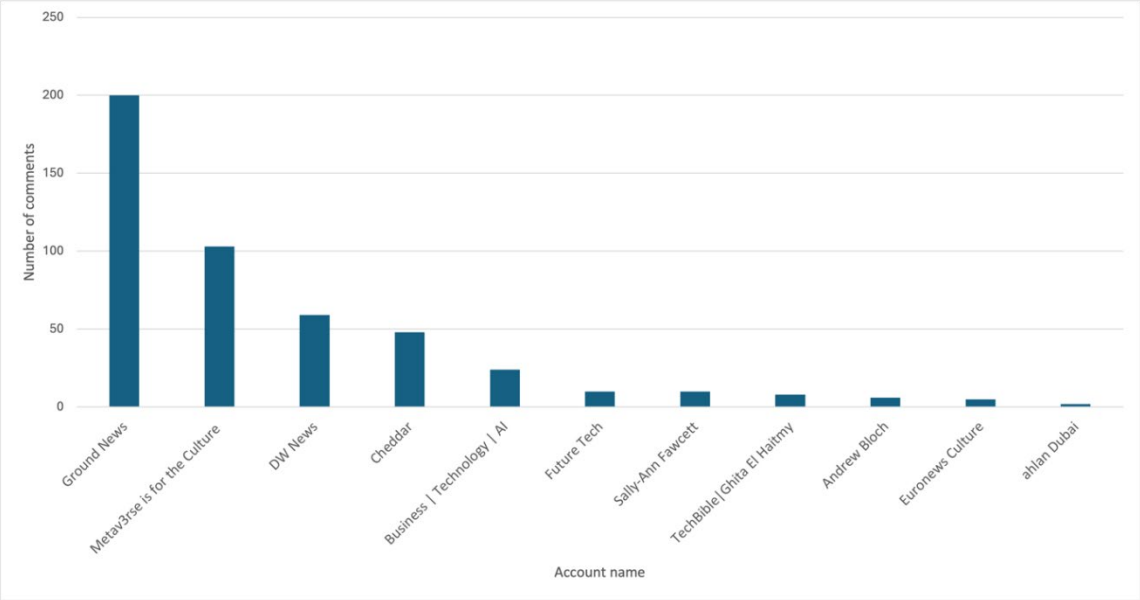

Figure 1: Number of comments collected from each account

In the second phase, comments analysis in R language have been conducted using the RStudio tool. A CSV file has been created and loaded into the application. Retrieved data has been properly transformed with the aim of creating a word cloud and performing sentiment analysis. Because the analysis in the tool has been conducted based on individual words, which in many cases changed the original tone of the commentary, as a third part, the author decided to review the comments manually and include emojis. Human-coder analysis (Alafwan et al., 2023) has been executed on 475 comments, putting the emphasis on the virtual jury, Aitana Lopez, who was positioned as a central figure associated with AI beauty pageant posts. The author incorporated mixed approaches in comments analysis to investigate users' initial opinions and aimed to identify possible future trends in the phenomenon of AI beauty pageants, comparing both single words and entire comments.

3. Results

This study used a mixed-methods approach, including both quantitative and qualitative data collection and analysis. The results are divided into two parts - the first one obtained using the designated tool and the second one derived from a manual review. In both cases, gathered users' comments have been analyzed and compared with one another to draw proper conclusions. Together, these results provide a comprehensive understanding of preliminary opinions on AI beauty pageants across social media society.

3.1 Single Words Analysis Output

The initial state of all words, including common English stop words (e.g. *the*, *to*, *a, and*) in total, contained 1549 words occurring with varying frequency. To create a word cloud, the dataset was cleaned by removing stop words, numbers, and punctuation, which are unnecessary for analysis in the tool. As a result of the comments review conducted using the RStudio environment, the following word cloud has been obtained (Figure 2). The author has chosen to present the most frequent words which appeared in comments at least five times. The top 10 most frequently words are as follows: *can* (37 times), *women* (37 times), *beauty* (32 times), *people* (28 times), *pageant* (25 times), *like* (24 times), *now* (21 times), *real* (19 times), *world* (17 times) and *human* (14 times). Among less common words, however, deserving attention in the AI beauty pageants context, the following words have been collected: *contest* (10 times), *create* (10 times), *standards* (10 times), *art* (8 times), *girls* (8 times), *models* (8 times), *porn* (8 times), *sex* (8 times), and *fake* (6 times).

Figure 2: Word cloud representing most frequently used words, which appeared at least 5 times

A sentiment analysis has been conducted to determine how words from the comments are categorized in terms of feelings. To do that, a proper sentiment lexicon had to be selected. A sentiment lexicon is a collection of words and expressions, each given a positive or negative rating, which indicates its sentiment polarity and strength (Tang et al., 2014). After reviewing available options, the author decided to use the Bing sentiment lexicon (Hu & Liu, 2004), which classifies words in a binary fashion, either positive or negative. Applying the lexicon reduced the studied dataset to 215 words. There is also another reason behind choosing that lexicon and applying bipolar split. Studied data contained too few observations to draw more tendencies from it, and as stated in the Introduction section, AI beauty pageant is a new phenomenon and is at its beginnings of growth. Figure 3 shows the top 10 most frequent words categorized by the sentiment. In the negatives, the most common word is *miss.* As stated in Cambridge Dictionary (2024), *miss* is both a verb and a noun and has multiple meanings. Therefore, having this word categorized as a negative means that it has been taken as a verb or noun meaning a failure, not a girl or a woman, which should have been the case here. The most frequent word in this analysis and included in the Bing lexicon is *beauty*, classified as a positive.

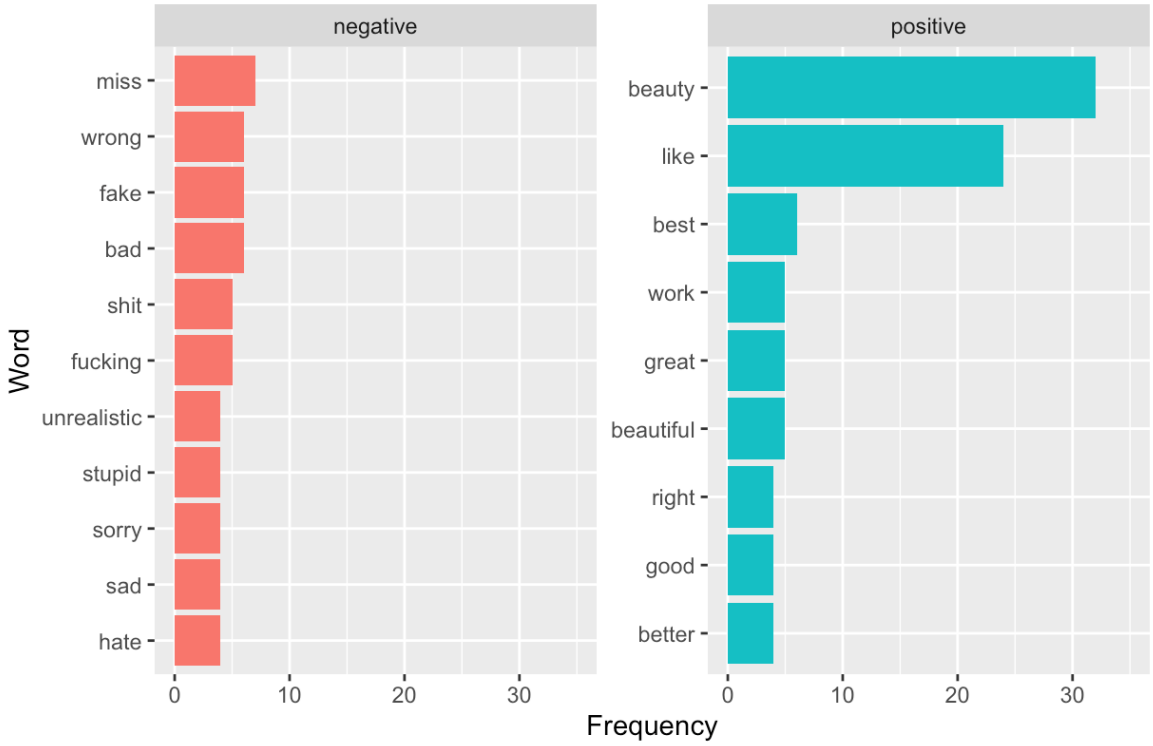

Figure 3: Top 10 most frequent words classified by sentiment (positive and negative)

Considering this result, the studied dataset expresses both positive and negative sentiments, with an advantage on the positive side. This is because *beauty* and *like* terms, one of the most frequent words available in the comments, are classified per the Bing lexicon as positive. The author has also chosen to examine the sentiment distribution encompassing all analyzed words. As presented in Figure 4, more than a half, specifically 54%, which are 116 items, were categorized as negative, and less than a half, more precisely 46%, so 99 words as positive.

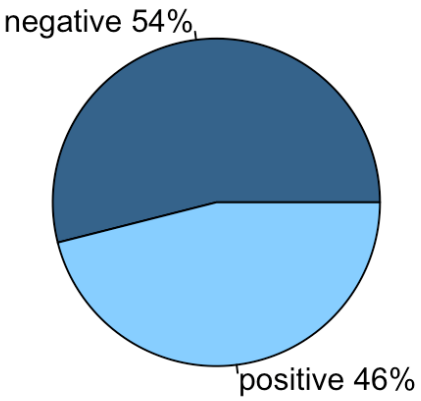

Figure 4: The overall sentiment distribution across all studied words

Given this output, it can be detected that the studied group of people is more likely to perceive AI beauty pageants negatively. However, sentiment is split almost half by half, so the general feelings are not unambiguous yet. Nevertheless, the analysis was performed based on single words, which in many cases doesn't reflect the original tone and misses human understanding. This is why the author decided to analyze whole comments manually, which is described in the next section.

3.2 Comments Analysis Output

To reveal a wider context of the studied dataset, as the second part of the research, the author performed a manual comments analysis. To demonstrate it, 12 examples of comments containing words classified according

to the Bing lexicon were selected, carefully read, and assessed by a human (the author). Each comment has been copied and pasted exactly as originally written on Instagram, including all punctuation and typographical errors. Table 1 gathers the comments, listing the lexicon's words and the author's opinion on the general feeling of the entire comment, without splitting it word by word. Furthermore, the manual analysis included emojis (if any), which the tool struggles to analyze. Due to possible errors in the graphical display of emojis in the article, the author decided to write the name of it in parentheses.

Table 1: Studied comments and lexicon words with the author's opinion

Comment	Words from Bing lexicon and its sentiment	Author's sentiment
Fake beauty standards **(unamused face)**	*fake* (negative) *beauty* (positive)	negative
This is what we are doing with AI, not making excel better **(angry face)** ***what a waste of*** **(man facepalming)**	*excel* (positive) *better* (positive) *waste* (negative)	negative
Sorry… but this is sick! Just thinking about young girls and how this is affecting their beauty standards. **(pensive face)**	*sorry* (negative) *sick* (negative) *beauty* (positive)	negative
Women are complaining about beauty standards now, just imagine what's gonna happen in 10 years when boys are creating their dream girls on a computer with unmatched beauty	*complaining* (negative) *beauty* (positive) *unmatched* (positive)	negative
This is so toxic, and wrong in a lot of levels.	*toxic (negative)* *wrong (negative)*	negative
a sad day for humanity and the beautiful and real ladies around the world...Perfection does not exist...but yes real people with perfect imperfections....	*sad* (negative) *beautiful* (positive) *perfect* (positive) *perfection* (positive)	negative
Although how is AI good or great but it is still not human **(robot face)**	*good* (positive) *great* (positive)	negative
at least pervs will have a "good looking woman" online **(face with rolling eyes)**	*good* (positive)	negative
Lol. Late Stage Capitalism is having AI beauty contests. Pathetic	*beauty* (positive) *pathetic* (negative)	negative
Great, so now we the women will be subjected no to just human "beautiful" standards, now will be artificial standards…	*great* (positive) *beautiful* (positive)	negative
Remember when AI was suppose to make life easier. **(thinking face)**	*easier* (positive)	negative
This is disgusting **(face vomiting)**	*disgusting* (negative)	negative

Based on the above comparison can be observed that the results of the single-word analysis slightly differ from the results of the whole comments analysis. Although some comments contained positively classified words, the overall sentiment of the sentence conveyed a negative feeling. In many cases, the positively classified word was *beauty* included in the main topic name *AI beauty pageant*. This is why it may disrupt the outcome of the overall sentiment, increasing the positives. However, the manual review corrected these errors and validated the findings, as shown in the examples in Table 1. What's more, supplementing the tool method with manual analysis incorporated human intuition and understanding, which are essential for accurately interpreting complex emotions and sentiments. Given the outcome of the human analysis, the majority of the comments expressed a negative sentiment, which means that the perception of the AI beauty pageant among social media

society is pessimistic. Moreover, while studying the dataset and embedded impressions, the author observed a few main directions that appeared in the comments. Table 2 gathers 14 distinguished topics, which recurred among users' opinions.

Table 2: Main topics observed in comments

Theme	Sample comments
Surprise and disbelief	*Wow, I wasn't expecting AI to be so influential in every sector so soon. Seems like in less than a year, everywhere you look.*
Negative impact on young girls	*This is extremely dangerous and damaging to young girls trying to meet beauty standards of nonexistent images; Imagine a situation a girl looking at the mirror flaunting her beauty at the same time one pop up just appear on phone and laptop for a sec with the line "Am more beautiful then you!!!!" and just vanish…*
Concerns about future implications	*This is all going in the wrong direction; Stop the madness, this is the wrong direction.*
Objectification of women and concerns about sexism	*Women are complaining about beauty standards now, just imagine what is gonna happen in 10 years when boys are creating their dream girls on a computer with unmatched beauty; Men reinventing the objectification of women.*
Comparisons to human beauty pageants	*Beauty contests full stop should be banned; As if real beauty pageants weren't bad enough, now it is create your own.*
Misuse of technology	*Imagine if this energy was put towards something actually meaningful and productive; What a stupid use of technology*
Sarcasm and jokes	*For the talent portion they just see who can solve a Facebook login captcha*
AI as art	*No because ai isn't art; That is subjective, just like art tbh*
Collapse of society	*We are witnessing the collapse of our society; We're cooked as a society.*
Money laundering	*New money laundering playgrounds?; Money laundering again.*
Late-stage Capitalism	*Lol. Late Stage Capitalism is having AI beauty contests. Pathetic; Late stage capitalism at its finest*
Pornography	*Nobody is surprised by this. The internet was created and men used it for porn. AI will be no different, unfortunately; Poor people use it for porn and will continue to use everything for porn.*
Consequences of Industrial Revolution	*The Industrial Revolution and its consequences…*
Artificial beauty standards	*Great, so now we the women will be subjected no to just human "beautiful" standards, now will be artificial standards…*
Cultural implications	*The West has fallen*

As can be clearly observed, the dataset reflects a predominantly mix of negative sentiments towards the idea of an AI beauty pageant, with significant concerns about its impact on society, particularly regarding beauty standards, objectification of women, and pornography. While some humour is expressed, the overarching response is critical, highlighting ethical and societal issues and implications. In the context of comments, graphical posts should be mentioned as well. One of the most frequently posted characters in the AI beauty pageant range is Aitana Lopez. Users have not missed pointing this out, adding a proper note to the discussion. This leads to a short case study of Aitana, based on the users' comments and general perception of the character.

3.2.1 Aitana Lopez case study

Aitana Lopez, one of the jury members of the AI beauty pageant, has been created by The Clueless agency, based in Barcelona, Spain (2024). As of now (22 June 2024), she has more than 321k followers on Instagram, and this number is still increasing. It can be assumed that being a jury in the contest and her immense popularity were leveraged in social media posts announcing the AI beauty pageant. Therefore, while reviewing all the comments,

the author noticed that some of the sentences refer precisely to Aitana, not to the AI beauty pageant itself. Instagram users primarily paid attention to Aitana's appearance and, more specifically, which famous person she resembles. Among the similarities to the celebrities have been observed Lady Gaga, Nicole Scherzinger (*This is absolutely Gaga mixed with Nicole Scherzinger*), Gal Gadot (*That's just Gal Gadot with pink hair*), Dua Lipa (*Isn't that just dua lipa?*), and Jessica Alba (*Didn't they already do this years ago and it kinda looked like Jessica Alba?*). There has also been specified a second group of comments on Aitana's look - *She looks great*; *She looks good; Pink hair looks like a dude with a wig* or *Love you sis.* Based on that, it can be observed that people present mixed feelings on this topic. On the one hand, they find Aitana like a celebrity and compliment her look, but on the other hand, they express themselves negatively about her. Considering all the results, it can be recognized that this case study also demonstrates a bipolarity of sentiments.

Summarizing all the analyses, both performed in the tool and the manual one, it can be said that social media society perceives AI beauty pageants in a negative light. While the tool has shown the sentiment is spread almost fifty-fifty, the qualitative overview was required to complement the results through a holistic interpretation of the data. The chosen methods allowed for the application of a mixed and balanced approach, which brought comprehensive insights, increased the reliability of the results and granted a nuanced understanding of the sentiment in the comments.

4. Discussion

The article presents a study on social media society's perception of a new AI phenomenon, which is AI beauty pageants. The study has revealed a few key findings. First, the respondents' overall attitude towards the main topic is predominantly negative, with significant criticism, scepticism, and numberless concerns. There are loads of opinions acknowledging real beauty canons, which might be dominated by unrealistic and harmful beauty standards and a fear of a dystopian society where human values are flawed by artificial standards. Furthermore, the objectification aspect, criticizing how pageants might contribute to the disruption of women's perception, marking AI beauty pageants as a male-dominated initiative. One of the previous studies about public perception of AI has shown that more than half of the surveyed think that AI will lead to the downfall of society in different contexts, *inter alia*, the personal, the social, and the cultural. Furthermore, the researchers have proven that AI and its implications were not seen in simple black-and-white terms. The participants held nuanced views on how AI will impact their lives (Brauner et al., 2023). The study described in this article points out various aspects and nuances in terms of AI usage, similar to Braunder's studies, but in a beauty pageant context. Most of them express negative attitudes, however, there is a wide range of raised issues. It is essential to note that this study was conducted on a small dataset, and the used tool is not limitations-free, e.g. by a limited number of records in the lexicon. In another study, Araujo et al. (2020) explored the utility of AI, *inter alia*, in media. Research participants expressed common concerns about the risks associated with AI and questioned its fairness and usefulness for society. According to scientists, to ensure the appropriate adoption of AI, it is crucial to acknowledge end-user perceptions and risk assessments at both individual and societal levels. Considering the results shown in this article, end-users' perspectives and possible implications have not been sufficiently analysed and assessed by the originators. At the current early stage of the AI contest, there is a clear reluctance on both grades, personal and social. However, it is important to note that this study was conducted based on a relatively small group of people and comments, as the AI beauty pageant is a new circumstance and will evolve with time. In connection with implications, the Collingridge dilemma should be quoted. The dilemma states that if the technology is sufficiently advanced and accessible, it can be thoroughly evaluated, however, usually, it is too late to regulate its development. On the contrary, if the technology is new and not yet widespread, assessing its future perception and likely impact is challenging, but managing its development and usage is easier (Collingridge, 1982). Responsible research and innovation somehow obligate researchers to continuous updates of the understanding of societal evaluations and implications of technology development (Burget et al., 2017; Owen & Pansera, 2019). The dilemma documented many years ago is versatile and finds its use even in AI beauty pageants. It is hard to predict how the AI contests will impact society in the future, not only social media but people in general. Based on the conducted study, the first directions have been identified, however, the forthcoming is quite uncertain and may bring unexpected consequences. Nevertheless, having disclosed initial insights, the development and use could be improved in order to prevent the increasingly unfavorable implications. This leads to another significant finding, which is ethical implications. According to the publication by OECD (2019), AI could cause ethical issues and social concerns. The main statements revealed in this article present that the boundary between the virtual and the real world is permeating. Starting with the creation of idealized female forms designed to cater to specific aesthetic preferences, through the creation of hyper-realistic and idealized images, which could dehumanize relationships and interactions, leading to the superiority of

artificial companions over real human connections. Next is the alteration of expectations of beauty and relationships, making it harder for real individuals to meet new, unrealistic canons. From a psychological perspective, AI beauty standards may contribute to mental health issues, including anxiety and depression. Finally, the exclusion of normal people from being appreciated for their natural appearance, marginalizing those who do not meet the AI norms. Totalling the quoted implications, one cannot disagree that normative and regulatory frameworks of AI, especially ethics are crucial (Cannarsa, 2021; Brauner et al., 2023). This study has revealed the tip of the iceberg, which is still growing.

5. Conclusions

Unquestionably, the growing presence of AI solutions in nearly every aspect of human life is transforming and will transform many areas. AI influence extends beyond jobs and daily life tasks, now permeating the beauty contests domain. As indicated in this article, there are new circumstances which so far impact social media society. AI beauty pageants, being little explored yet at the beginning of their existence, do not meet with a positive reception by the public. Conversely, people express their concerns and the negative implications brought by this new phenomenon. In explicit opinions, a few main themes have been identified and described in this paper. As stated by Johannessen (2020), embracing new technologies implies the acquisition of new skill sets, particularly those enabling ethical reflection on the complex issues arising from such advancements. In the instance of AI beauty pageants and their early but already observed negative social and ethical implications, people will be forced to learn how to handle it. Certainly, by observing and documenting initial observations on the topic in this writing, society can proactively address issues and mitigate potential negative long-term consequences. However, looking at the amount of negative feelings towards the subject matter can be challenging. As further steps of research on the AI beauty pageant topic, the author suggests studying a wider range of data (comments), which will gradually appear. Additionally, based on the experience gained in this research, gathered comments could be investigated in a more complex tool, which can read the graphics (emojis, GIFs). Next, results could be compared with results from this paper and subjected to human assessment. Will AI settle human canons of beauty? Hopefully not, as that could mark a slow demise of humankind.

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