Investigation into How Artificial Intelligence Is Transforming the Graphics Design Industry

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Abstract

The study investigated how artificial intelligence is transforming the graphics design industry, and how graphic designers are embracing the technological developments. The study aimed at exploring the current and future possibilities of artificial intelligence in graphics design, investigate the challenges and opportunities of using artificial intelligence in graphics design, and explore the potential of artificial intelligence in revolutionizing the graphics design industry. The methodological research approach was quantitative questionnaire survey that randomly sampled 74 graphics design undergraduate students across 5 Saudi Arabian universities. The study results showed that artificial intelligence is applied more in content creation as compared to marketing purposes, and that artificial intelligence based tools plays a significant role revolutionizing design process with enhanced efficiency and accuracy. The study concluded that opportunities and limitations of artificial intelligence in graphics design is here to stay, hence it is pertinent for graphic designers to it is important to balance between automation and human creativity is pertinent for successful design outcomes.

Keywords: Artificial intelligence in graphic design; Transformation of graphic design industry; Current and future possibilities of AI in design; Challenges and opportunities of AI in graphic design

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1. Introduction

Artificial intelligence is increasingly becoming a valuable technology in many industries including graphics design industry. The impact of artificial intelligence and how it is transforming the graphics design industry through repetitive task automation, innovation of new design concepts, and making designs personalized (Roberts, 2022). In the fast paced digital era, where generative artificial intelligence is becoming a treasured ally to graphic design professionals. However, the significance of graphic design is not only in aesthetics, smart and instinctual designs enhances usability of artificial intelligence applications that makes graphic design professionals user experience more rewarding. The choice of visual elements, fonts, and colors enable transfer of delicate messages that impacts user emotions (Mustafa, 2023). Receptive graphics designs is becoming more important in the digital era, where users access

digital content from a variety of computing devices, such as smartphones, tablets, and laptops. However, some pundits are of the opinion that artificial intelligence in graphic design is leading to a loss of human touch and possible replacement of human graphic designers (Mustafa, 2023).

It is important to investigate how artificial intelligence is transforming the graphics design industry, as well as comprehensive insights into the current state in addition to the potential of artificial intelligence in the future of graphics design (Cho & Chen, 2020). The application of artificial intelligence has evolved over some time now with early applications concentrated on manipulating images, layout, and typography through repetitive tasks automation. These early applications had limited scope in their functionality, however they provided a firm foundation the artificial intelligence techniques and tools that have since developed in the recent times, with the development of neural networks and deep learning, artificial intelligence has the ability to analyze big data, that has led to artificial intelligence based graphics design techniques that depends on user preferences and data (Cho & Chen, 2020). Artificial intelligence assisted graphics design enables practitioners to design tasks including layout, font and color selection.

Graphics design has gone beyond aesthetics into an important strategy for effective communication and business success. For instance, well designed websites captures the audiences' interest, as well as take them through information flow in vivid and engaging way (Green & Harris, 2022). Posts in social media with eye catching images receives a number of likes and comments, which enhances visitors' engagement and interaction. Products on physical store shelves with attractive packaging graphics design makes the products stand out, as well as in virtual e-commerce platforms (Green & Harris, 2022).

Artificial intelligence saves graphics design professionals time and effort that enables them higher levels of dedication to strategy and creativity. This implies that artificial intelligence is an astonishing resource that revolutionizes graphic designers approach to their profession (Narzisi & Passerini, 2019). Artificial intelligence provides graphics designers with virtual assistance that enables them to tackle challenging and repetitive tasks that frees their time of manual effort. Artificial intelligence augments task optimization through pattern recognition capabilities that provides original and innovative designs (Narzisi & Passerini, 2019). Therefore, the artificial intelligence offers positive impacts into transforming the graphics design industry.

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2. Methodology

The research study was a mixed approach of both qualitative and quantitative analysis, where the primary data as collected through structured interview questions survey. Qualitative secondary data was collected and analyzed through wide-ranging literature review. The literature review analyzed the recent past and current impact of artificial intelligence in transforming the graphics design industry. The review was done on scholarly journals, online sources, and industry report analyses on artificial intelligence applications in graphic design. The survey interview questions were administered to undergraduate graphic design students in universities across Saudi Arabia. A random sample of 62 students were selected to participate in the survey interviews, where the interviews were conducted through online survey. The Zoom interviews enabled more comprehensive discussions on the impact of artificial intelligence in making graphics work easier, exploration on how students opinions on how artificial intelligence is currently being used in graphics design, and the future trends of artificial intelligence applications in graphics digital applications. Quantitative data was analyzed through statistical analysis tools including analysis of variance, percentages, and trends analysis.

The structured interview questions included how artificial intelligence improves the workflow and creativity in graphics design, how artificial intelligence help graphic designers have better results, the current limitations and challenges of using artificial intelligence in graphics design, and the technical skills needed in effectively using artificial intelligence tools in graphics design.

3. Objectives of the study

1. To explore the current and future possibilities of artificial intelligence in graphics design.

2. To investigate challenges and opportunities of using artificial intelligence in graphics design.

3. To explore the artificial intelligence potential in revolutionizing the graphics design industry.

4. LITERATURE REVIEW

How Artificial Intelligence Improves the Workflow and Creativity in Graphics Design

Generative artificial intelligence performs predefined tasks, as well as improves creative ideation. Artificial intelligence tools gathers information from a variety of images and text that creates mood boards and inspiration of creativity. When human creativity meets with artificial intelligence provide prompts for innovation with continuous flow of concepts and ideas for graphic design practitioners. Artificial intelligence tools act as creative partners together with provision of valuable input within the ideation process in graphic design project development (Lee & Cho, 2020). The capabilities of gathering information from various sources, graphic designers get a variety of design inputs and stimuli. Therefore, artificial intelligence helps professionals to overcome creative blocks through new perspectives and ideas (Narzisi & Passerini, 2019). Artificial intelligence collects images from social media, websites, and several online sources by selecting and filtering the interesting or most relevant information. As a virtual assistant to graphic design professionals, artificial intelligence helps practitioners in getting the required inspiration that expands their creative repertoire (Gupta & Kumar, 2020).

The most pertinent aspect of using artificial intelligence in graphic design, is its ability of learning from feedback and how it interacts with users. Therefore, artificial intelligence will learn users' tastes and preferences that helps in

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augmenting relevant personalized ideas over time (Cho & Chen, 2020). The deep learning brings opportunities and possibilities that leads to unique synergies of the interaction between the human creative talent and artificial intelligence that results into more progressive and innovative unanticipated results. Integrating creative processes with artificial intelligence provides generation of ideas and inspiration, and provision of consistent flow of creative ideas (Wang & Li, 2020). Therefore, the integration of human

creativity and artificial intelligence leads to extraordinary and innovative results that give graphic designers competitive advantage in visual content creation.

The advantages of artificial intelligence in workflow enhance in creating graphics content revolutionizes how graphic designers manage their projects with clients. The capabilities of generating original content proves that artificial intelligence provides valuable tools in meaningfully minimizing the amount of time taken in designing high quality graphics. Therefore, professionals in graphics design can have more time in responding to their clients according to their specific needs, which leads to responsiveness in communication with clients (Liu, & Elgammal, 2019).

Artificial intelligence is impacting the graphics design industry in philosophical ways by creating new job opportunities to making it easier for graphic designers to be more efficient and complete their tasks easier and faster. Artificial intelligence is also changing how graphic design products are made, and new skill sets for designing required jobs. The artificial intelligence tools are becoming more advanced and ill replace several routine tasks presently performed by humans therefore, professionals will adapt new skills in order to remain relevant in the graphics design industry. Designers will have to transform by being more adept in using artificial intelligence state-of-the-art creative designs, as well as the overall quality of their work (Roberts, 2022).

Artificial intelligence based tools will become more efficient in data driven creations, hover they might not appear as creative as human made designs. In such a scenario, the graphics design industry might be impacted negatively, however they will be increased and agility in the design processes through iteration on designs. Designers will be able to gain faster feedbacks on their designs by placing their products faster into the market. Risk of having homogeneous designs is imminent by making designs more predictable and similar. Therefore, diversity might be affected and decrease in creativity concerning graphics design work, which is necessary for the industry's maintenance of relevance and innovation (Wilson, 2022).

Artificial intelligence based tools

There are several artificial intelligence based tools in the market that graphic designers use in their design processes. Some of the most common ones include Adobe Express that allows graphic designers to create spectacular marketing images, social posts, flyers, and other graphic design digital products. Adobe Express artificial intelligence based tool is a generative machine learning App that is powered by Adobe Firefly specifically for graphics design. The integrated artificial intelligence photo editing tool allow users to alter image backgrounds and delete unwanted parts from images (Roberts, 2022).

Canva is another artificial intelligence graphics design tools that allows users to create a wide range of designs including social posts, presentations, and logos. The Canva artificial intelligence platform is integrated with text to image generator from Magic Design, as well as Magic Studio that integrates text to video generation and photo editing features

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(Wilson, 2022). Designs.ai is an artificial intelligence powered platform from graphics design in logo design, image generation, YouTube Thumbnails, business cards, and product listings. Autodraw is an

artificial intelligence based tool that integrates drawing from artists and machine learning. The artificial intelligence tool allows user to create custom graphics (Wilson, 2022).

Khroma is another artificial intelligence based tool that assist users in matching their favorite color in series of palettes, as well as block colors that users do not intend to apply. The tool saves time in color pairing using the color generator algorithm. Khroma allows users to visualize color pairings in different ways, and is suitable for creating colors that appear as images, posters, and wider color palettes. Looka artificial intelligence platform is specifically made for designing logos and creating product brand designs (Green & Harris, 2022). Users create their designs based on their inputs through the application of machine learning and artificial intelligence. These artificial intelligence based tools are developed specifically for removing creative blocks from graphic designers, creative experimentation, creative workflow, and saving time in manual tasks (Green & Harris, 2022).

Artificial intelligence based tools enable users to edit images through the application of generative artificial intelligence. In the present digital environment, it is crucial to manipulate images with flexibility, more intuitive, and make designing experience a lot easier and deeper (Mustafa, 2023). The machine language algorithms suggest improvements such as contrast, white balance, and changing image subject clothing's, removing and adding design elements such as animals, trees, buildings, as well as change lighting and creating entirely innovative atmospheres (Mustafa, 2023). The advanced capabilities of artificial intelligence based tools are democratizing graphics design in unprecedented ways. Users do not need to be experts in graphics design in order to create unconceivable images by manipulating visual realities (Mustafa, 2023).

Ethical Considerations

Ethical considerations in artificial intelligence relates to strategies for harmonious coexistent with human creativity. Complex ethical aspects need to be considered due to loss of job implications and matters related to data privacy issues, as well as concerns related to interactions between human mental processes and artificial intelligence (Mustafa, 2023). Artificial intelligence is not necessarily causing obstacles to human mental processes. Artificial intelligence provides stimulating opportunities for improvement and amplification. Graphic designers need to benefit for using artificial intelligence based tools, hence competencies and skills need to determine genuine design professional from fictional graphic designers (Mustafa, 2023).

Given that artificial intelligence based tools only work with the creative human mind, however artificial intelligence lacks goals, intent, and deeper meaning (Green & Harris, 2022). Hence professional graphic designers still must bring their vision, intuition, and discernment while using artificial intelligence. The human inspiration artificial intelligence logic makes progress and innovation possible (Green & Harris, 2022). Ethical considerations in artificial intelligence is about dilemmas and challenges, as well as creative solutions and openness to novel perspectives. Ethical challenges need to be approached through constructive dialogue in addition to adopting compact regulatory principles (Green & Harris, 2022).

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Artificial intelligence should not be perceived as a hindrance but rather as a tool to be directed in enhancing graphic designers' abilities in expanding their creative latency by applying appropriate ethical principles by ensuring proper application of responsibility according to human values (Green & Harris, 2022). Therefore, transparency, privacy, human wellbeing, and fairness should be the foundation in graphics design while implementing artificial intelligence systems. Artificial intelligence is a valuable resource helping graphics designers solve complex problems that needs creative approaches and strategies (Wang & Li, 2020). Therefore, graphic designers need to collaborate with machine learning algorithms in generating original and innovative ideas. Therefore, ethical dilemmas should be confronted through human intuition and creative aspects in bringing unique graphic designs to life. Given that ethical considerations are complex and multifarious, graphic designers should not view them as overwhelming obstacles (Mustafa, 2023). Artificial intelligence should be viewed as stimulus for the development of ethical approaches of artificial intelligence application beneficially and responsibly in graphics design profession (Gupta & Kumar, 2020).

Challenges and Opportunities

Significant challenges including ethical implications concerning artificial intelligence generated graphics design, artificial intelligence algorithms learn from existing data and information. This poses the uninterrupted risk of stereotype and biases present in existing designs. Deep learning data can be predominantly biased towards certain cultural norms and demographics, which might be reinforced by artificial intelligence generated graphics designs (Gupta & Kumar, 2020). Therefore, graphic design professionals need to be vigilant towards ensuring inclusivity and representation of diverse perspectives. There is lack of subjective understanding and context in artificial intelligence generated designs founded on preferences and patterns (Gupta & Kumar, 2020). Therefore, lack of understanding ability of cultural and emotional contexts based on design alternatives. Graphics design is a visual communication tool with design elements that different meanings that evokes particular emotions related to the target audience and cultural backgrounds. Therefore, human graphics designers come with some subjective understanding together with empathy for artificial algorithm struggle to reproduce (Davies & Williams, 2023).

Artificial intelligence based tools lack the same innovation and originality as compared to those created by human designers. It is important to note that artificial intelligence have the ability of analyzing existing designs and information in generating new design options, but they depend on established trends and patterns (Cho & Chen, 2020). This poses homogenization of graphics design sine artificial intelligence algorithms tends to be biased towards popular aesthetics and styles. Human creative designers depend on challenging norms and boundaries into coming up with ideas which does not adapt to existing trends. Therefore, creating a balance between human creativity and artificial intelligence generated designs is important for maintenance of innovation and fresh ideas (Cho & Chen, 2020).

The Future of Artificial Intelligence

The application of artificial intelligence in graphics design is anticipated to evolve and expand with immense possibilities for professional and businesses. Artificial intelligence algorithms continue to learn from user experiences, enabling more adaptation and improvements in design suggestions related to user objectives and specific preferences (Davies & Williams, 2023). Personalization approaches will revolutionize how graphic professionals work that will results into creation of impactful designs that

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are tailored to the users' needs. Virtual reality, spatial data and augmentation reality will continue to open more possibilities that will transform how designers and businesses communicate to their audiences (Davies & Williams, 2023). Human intuition, creativity, and subjective understanding will not be replaced by the development of artificial intelligence based tools in graphics design.

Algorithms lack the emotional intelligence required for artistic visions, hover the future of artificial intelligence in graphics design will lie in the synergy and collaboration between intelligence algorithms and human designers (Narzisi & Passerini, 2019). However, artificial intelligence is likely to transform cultural norms and perceptions that may eventually fuzziness the line between computers generated content and originals. The use of artificial intelligence is likely to become more impactful and prevalent that will enable more sophistication in creative graphics design generation (Narzisi & Passerini, 2019).

Graphics Design Artificial Intelligence Conceptual Framework

Activity theory of graphics design addresses practical and theoretical growing limitations raised by the development of digital technologies. Activity theory examines crucial digital technologies such as artificial intelligence and algorithmic decision making (Brown, 2021). The activity theory accommodates artificial intelligence in graphic design by criticizing novel insights in to the limitations on the development and impacts of digital technologies by developing modern conditions and perspectives. Embracing of the concepts of activity theory by graphic designers help in generating novel ideas that need to transform human activity in relation to digital technologies (Brown, 2021).

Activity theory was developed by Vygosty, a soviet psychologist in 1920, and later by Leontiev by postulating that human actions are influenced by cultural and historical products. Activity theory proposed that for minimal meaningful analysis of human actions within cognitive psychology settings. Where subjects for human activity use symbolic systems and artifacts in mediating between goals and the subjects, as well as the considered tools (Lee & Cho, 2020). In modern times, the artificial intelligence based tools enables specific techniques for accessing the world through activities and structures. Activity theory uses in graphics design reconstructs context for which design artifacts are utilized in relation to how the activities are meditated as artificial intelligence based tools (Lee & Cho, 2020). Therefore, the activity theory reflects on the graphics design processes, facilitates the application of artificial intelligence based tools within the design processes, as well as how artificial intelligence tools facilitates the graphics design processes (Lee & Cho, 2020).

5. RESULTS ANALYSIS

Data from the questionnaire survey was coded for processing in GraphPad statistical data analysis and visualization software. The following bar charts illustrates the questionnaire survey summary, and 100% response rate from a sample size of 74 was reported with all questionnaire items responded to. The sample was drawn across a sample of 5 Saudi Arabia universities offering graphics design courses. Majority of the respondents positively embraced the benefits of integrating artificial intelligence in their graphics design work. The respondents were also responsive on underlying issues such as how artificial intelligence is transforming the graphics design industry, and how they are professionally applying the artificial intelligence based tools.

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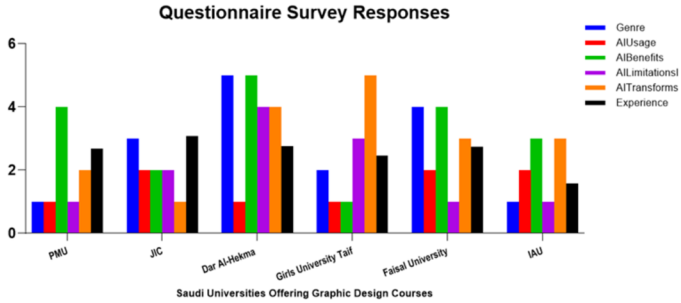
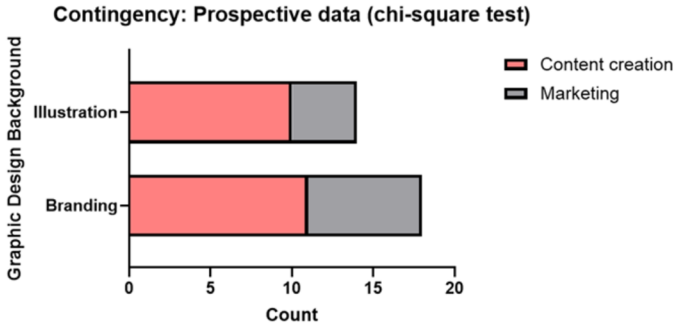


The Current and Future Possibilities of Artificial Intelligence in Graphics Design

By exploring the current and future possibilities of artificial intelligence in graphics design, it was pertinent to analyze the graphics designers' background against how they used artificial intelligence in their work. 5 graphics design backgrounds were considered as illustration, branding, publishing, motion graphics, and UI/UX together with the two usage areas in content creation and marketing.

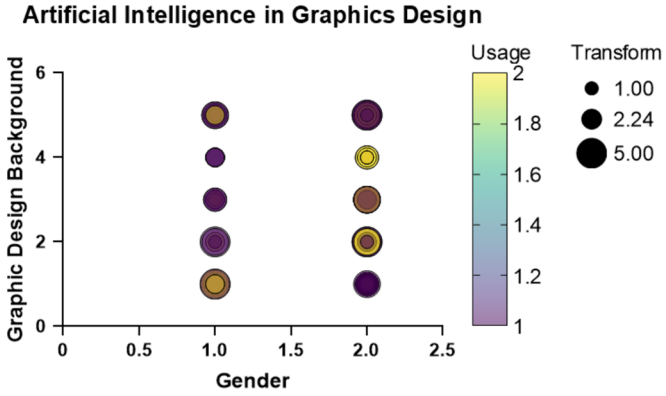


Artificial intelligence based tools are mainly used for content creation as opposed to marketing purposes across all graphics design backgrounds among the university graphics design students sampled, a part from publication design genre. The interrelationship between graphics design background for content creation occurs within the branding genre.

A further contingency analysis gave the Pearson Chi-square of 2.908, which is greater the assumed significance. Therefore, there was no statistical significance of association between graphics design background and how graphic designers use artificial intelligence in their work. Both usages of artificial intelligence in either content creation or marketing purposes is preferred by graphics designers across the genre of graphics designing.

Challenges and Opportunities of Using Artificial Intelligence in Graphics Design

The responses concerning the benefits and limitations of using artificial intelligence in graphics design elicited wide ranging information. The Likert scale measures elicited responses ranging from strongly agree to strongly disagree. The following figure illustrates the inter-relationship between gender, graphics design background, how practitioners are using artificial intelligence based tools, and their opinions on how artificial intelligence is revolutionizing the field of graphic design.



Gender was not a significant predictor in its contribution to the utilization of artificial intelligence in graphics design in any of the graphics design background. However, the usage in

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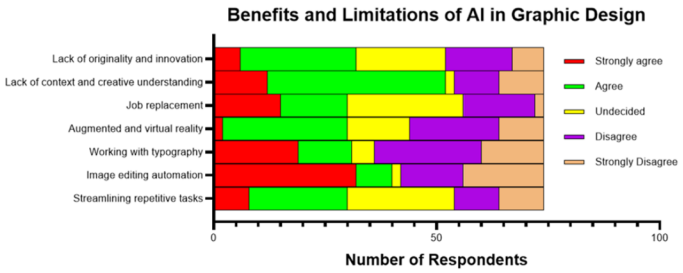
either content creation or marketing purposes, the graphics design background played a significant role in the development of artificial intelligence across all the usage areas. Likewise, how artificial intelligence usage is affecting the transformations occurring presently, it was evident that most graphic designers applies artificial intelligence in content creation.

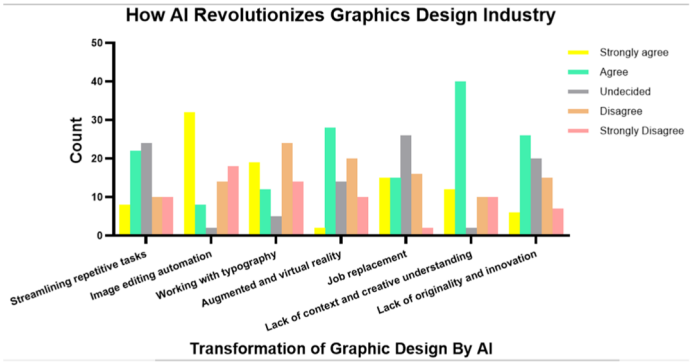
Analysis of the benefits and limitations of application of artificial intelligence based tools in graphics design was exposed in the figure below.



In the independence analysis between the challenges and opportunities of application of artificial intelligence in graphics design. The variables analyzed for the challenges of using artificial intelligence e based tools were Job replacement of human graphic designers by algorithms, Lack of context and creative understanding, and Lack of originality and innovation. These limitations were analyzed against the benefits of artificial intelligence to graphic designers, and the following results were obtained. The association between the benefits of artificial intelligence and limitations of using artificial intelligence in graphics design was not statistically significant. Therefore the limitations does not have an effect on the benefits of using artificial intelligence in graphics design.

The Potential of Artificial Intelligence in Revolutionizing the Graphics Design Industry

The potential of artificial intelligence in revolutionizing the graphics design industry was concerned by exploring the respondents considered the variables of innovative ideation, effectiveness, personalization, and savings on time and efforts.



The modal years of experience of the respondents was 3 years in the graphics design field, and the following frequencies provided information regarding ways in which artificial intelligence is transforming the graphics industry. Most of the students were of the opinion that artificial intelligence transforms the graphics design industry by promoting innovative creative ideas. The next manner was considered that artificial intelligence is transforming the graphics design industry was increased personalization of graphics design professionals designing processes, followed by increased effectiveness. The respondents who considered that artificial intelligence transform how they work were only 7%, while those never saw the worth of artificial intelligence were 14%, which was a similar proportion to those who had the opinion that artificial intelligence increased the effectiveness of graphics designers.

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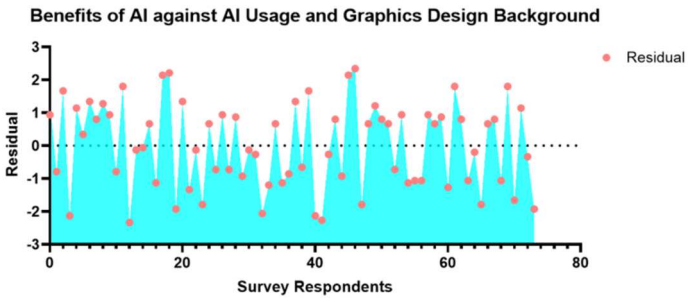
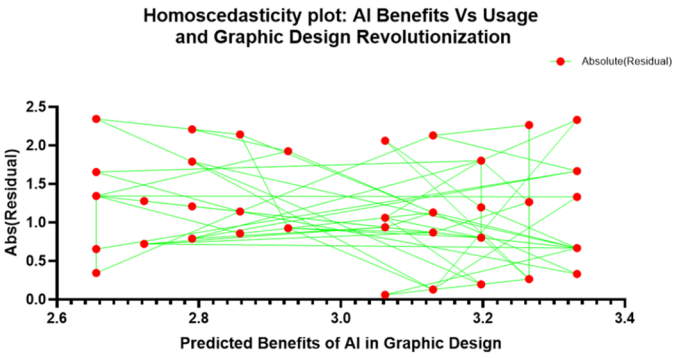
The residual verses order plot below displays the multiple regression analysis results of benefits of artificial intelligence in graphics design as dependent variable. The regression analysis independent variables were usage of artificial intelligence based tools in content creation and marketing, as well as the graphics design backgrounds in illustration, branding, publishing, motion graphics, and UI/UX.

The multiple regression results showed that the data did not fit the regression model, hence usages of artificial intelligence and graphics design backgrounds were not good fit for the prediction of the benefits of artificial intelligence in graphics design. Therefore, it is pertinent to look out for other extraneous variables that may affect the use of artificial inelegance based tools both in the present and future.





In analyzing the association between ways in which graphics design is transforming the graphics design industry and the ways in which Artificial Intelligence can help graphic designers. The analyzed ways in which artificial intelligence helps graphics designers considered the variables Streamlining of repetitive tasks, Image editing automation, Working with typography, and Augmented and virtual reality.

Innovative creative ideas was considered as the most popular way that artificial intelligence transforms the graphics industry. However, the ways in which artificial intelligence helped graphics designers in generation of suggestions of innovative ideas by artificial intelligence based tools. Streamlining of repetitive tasks was valued highly by the respondents, followed by image editing automation, augmented and virtual reality, and lastly working with typography.

6. DISCUSSION

Artificial intelligence is playing an important role in the graphics design industry by helping practitioners enhance their design elements including imagery, typography, layouts, and color palettes. Currently users are able to select from a wide gamut of templates, as well as access libraries of high resolution images. Artificial intelligence in graphics design supports both designers and non-designers in the creation of stunning designs by expediting through the design process. Artificial intelligence is transforming the way designers create, manage, as well as consume visual content by opening new opportunities and challenges. Artificial intelligence

phenomena has been steadily evolving with advances in deep learning algorithms, which have grown in increasing sophistication making the creative processes more accessible and efficient.

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The impact of artificial intelligence on graphic designers include automation of repetitive tasks, assistance and inspiration, speed and efficiency, customization, and quality enhancement. The future of graphics design will be characterized by greater accessibility, dynamic data driven designs, cross disciplinary collaboration, and enhanced creativity.

Artificial intelligence in graphics design comes with both opportunities and challenges, with the notable challenges including creativity constraints, job displacements, ethical considerations, skills gap, and quality control. It is important to balance between automation and human creativity is pertinent for successful design outcomes. The ethical concerns surrounding bias, ownership, exploitation, and originality issues potential undermines representation and inclusivity. However, artificial intelligence is promising opportunities in faster production, rapid generation, time saving, enhanced creativity, democratization, and complex design including animation and 3D modelling. Over dependence on artificial intelligence has the potential of sporadic generic outputs that reduces human creativity and sustenance of unique styles. Opportunities and challenges are here to stay for artificial intelligence in graphics design, however when strategically applied, it is an irreplaceable asset for committed innovation. Therefore, graphics designers need to address the challenges in the acceptance of artificial intelligence has an innovative creative partner, as well as harnessing its full potential in pushing excellence in innovative and creative graphics design.

The revolutionization accuracy and efficiency in graphics design processes is greatly influenced by artificial intelligence. With factors including cultural changes, shifts in consumer preferences, and advancements in technology, artificial intelligence in revolutionizing the future of graphics design in terms of tasks automation. Artificial intelligence enabled tools are leading to emerging aesthetic trends, which relies on the unique capabilities of artificial intelligence. The societal changes including diversity, inclusivity, and sustainability concerns, artificial intelligence is set to revolutionize the graphic design industry by highlighting needs for producing visually pleasing designs. Artificial intelligence is modernizing the prototype phases that makes conceptualization of designs easier before implementation through intuitive pattern recognition for infinite design variations. The innovative scope is expanding the aesthetic levels when designers concentrate on high level thinking in producing unique design outcomes.

7. CONCLUSION

Investigation into how artificial intelligence is transforming the graphics design industry was conducted through a questionnaire survey. The study explored the exploring the current and future possibilities of artificial intelligence in graphics design, the challenges and opportunities of using artificial intelligence in graphics design, and the potential of artificial intelligence in revolutionizing the graphics design industry. There was no statistical significance of association between graphics design background and how graphic designers use artificial intelligence in their work. Both usages of artificial intelligence in either content creation or marketing purposes is preferred by graphics designers across the genre of graphics designing. However, the usage in either content creation or marketing purposes, the graphics design background played a

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significant role in the development of artificial intelligence across all the usage areas. Likewise, how artificial intelligence usage is affecting the transformations occurring presently, it was evident that most graphic designers applies artificial intelligence in content creation. The association between the benefits of artificial intelligence and limitations of using artificial intelligence in graphics design was not statistically significant. Therefore the limitations does not have an effect on the benefits of using artificial intelligence in graphics design. Innovative creative ideas was considered as the most popular way that artificial intelligence transforms the graphics industry. However, the ways in which artificial intelligence helped graphics designers in generation of suggestions of innovative ideas by artificial intelligence based tools. Streamlining of repetitive tasks was valued highly by the respondents, followed by image editing automation, augmented and virtual reality, and lastly working with typography.

The future of graphics design will be characterized by greater accessibility, dynamic data driven designs, cross disciplinary collaboration, and enhanced creativity. Therefore, graphics designers need to address the challenges in the acceptance of artificial intelligence has an innovative creative partner, as well as harnessing its full potential in pushing excellence in innovative and creative graphics design. The innovative scope is expanding the aesthetic levels when designers concentrate on high level thinking in producing unique design outcomes.

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