

A STUDY ON THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON FASHION STUDENTS (WITH REFERENCE TO NIFT DAMAN)**Dr. Rahul Kushwaha****Dr. Vidhu Sekhar P**

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ABSTRACT

The fashion business is being progressively impacted by artificial intelligence (AI), especially in areas like creativity, trend forecasting & innovative design. This study looks at how AI affects design originality, innovation & student views among fashion students at the National Institute of Fashion Technology (NIFT), Daman. The study's main goals are to determine how AI tools affect creativity, examine how students see the application of AI in fashion design & examine how AI functions in trend & fashion forecasting. This study explores how much AI influences design processes & creative outputs using surveys with NIFT Daman students. The study also investigates how students feel about AI & if they think it will improve creativity or undermine traditional design methods. Furthermore, the study investigates the use of AI in fashion trend prediction, providing insights into how AI helps students predict trends more accurately.

INTRODUCTION

The fashion industry is no exception to how quickly artificial intelligence (AI) has emerged as a revolutionary force in different industries. The fashion business, which has relied on human creativity & craftsmanship, is currently experiencing a transition towards a technology-driven procedures. AI is revolutionizing design innovation by automating processes, forecasting trends & providing hitherto unheard-of insights into customer preferences. The potential impact of AI on fashion design, forecasting & production is a topic of great academic & business interest as fashion & technology become more intertwined. The growing use of AI is causing a major shift in the fashion business, particularly in fields like innovation, trend forecasting & creative design. The development of AI tools presents both possibilities & difficulties for influencing fashion in the future. Today, the goal of fashion education is to prepare students for a fast-changing business. This is especially true for institutions such as National Institute of Fashion Technology (NIFT), Daman where students must negotiate this creative-tech nexus as the workforce of the future. AI tools that improve design processes & decision-making skills — like virtual assistants, generative design software & predictive analytics—are being added to fashion curricula more & more. But there are also a lot of opportunities & problems that come with this integration. Although AI has the potential to improve & expedite creativity, it also raises concerns about how it may affect conventional design abilities & the significance of human intuition in the creative process.

The objectives of the study are:

1. *To study the impact of AI on design creativity.*
2. *To study the impact of AI on design innovation.*

The study is centred on examining how AI affects design creativity & innovation among NIFT fashion students. It also aims to evaluate the attitudes & perceptions of students towards AI in the field of fashion & to analyse the application of AI in fashion forecasting & trend analysis by students. Through understanding these aspects, the research seeks to offer insights into how AI can enhance fashion education, preparing students for a future where technology & creativity converge in the fashion industry.

In the end, this study will advance knowledge of how AI may influence fashion design in the future & assist industry experts, educators & AI developers in navigating the nexus of fashion creativity & technology.

REVIEW OF LITERATURE

Brown, T., & Green, K. (2024). In *Balancing Tradition and Innovation: Students' Perspectives on AI in Fashion*, Brown and Green examine how fashion students perceive the integration of AI within their educational experience. The study reveals a split in student opinions: while AI is appreciated for its innovative capabilities & efficiency, there are concerns about its potential to overshadow traditional design skills & techniques. The authors argue for a balanced approach in curriculum development that incorporates AI while preserving essential craft skills, aiming to prepare students effectively for a tech-enhanced fashion industry.

Smith, A., & Lee, C. (2023). In *Generative Design Tools: Enhancing Creativity in Fashion Education*, Smith & Lee investigate how generative design tools powered by AI are used in fashion education. The paper highlights how these tools facilitate innovative design processes by generating diverse design options & aiding creative exploration. Smith & Lee argue that integrating such tools into the curriculum helps students develop technical skills & adapt to industry changes. The study emphasizes the potential of AI to enhance creativity & technical proficiency, though it also notes the need for balancing AI use with traditional design methods.

Wang, H., & Zheng, Y. (2023). *AI-Driven Design Tools: Opportunities and Challenges in Fashion* by Wang and Zheng reviews the impact of AI-driven design tools on the fashion industry. The paper outlines the benefits, such as increased efficiency & the ability to explore new design possibilities, while also addressing challenges like the learning curve & potential job displacement. Wang & Zheng argue that while AI tools offer significant opportunities for innovation, they also necessitate careful consideration of their implementation in educational settings to ensure they complement rather than replace traditional skills.

Liu, Y., Zhang, L., & Zhao, H. (2022). *Trend Forecasting Using AI: A New Era in Fashion Design* by Liu, Zhang & Zhao explores the application of AI technologies in predicting fashion trends. The authors analyse how AI algorithms process historical fashion data to identify patterns & forecast future trends, significantly impacting design strategies. This study demonstrates the role of AI in enhancing accuracy & efficiency in trend prediction, offering designers a powerful tool for making informed decisions. The paper underscores the transformative potential of AI in modernizing the fashion design process and staying ahead of market demands.

Johnson, M. (2021). Johnson's article, *The Role of AI in Modern Education*, provides an overview of how artificial intelligence is reshaping educational environments. The paper discusses the potential of AI to personalize learning, automate administrative tasks & provide adaptive learning experiences. Johnson highlights the transformative benefits of AI such as enhanced engagement & efficiency, but also notes challenges, including ethical concerns & the need for proper implementation strategies. This foundational work helps contextualize AI's broader impact on education, setting the stage for understanding its specific effects on fashion education.

Amado, A. (2021). "Fashion education & AI: The future of design skills." *Fashion Theory*, this study looks at the integration of AI technologies into fashion education, namely at NIFT & similar institutions. It looks at how AI can be used to teach consumer analytics, trend predictions & design principles. AI tools that support design creation & assessment are presented to students. The study emphasizes the difficulty of striking a balance between AI technology & conventional fashion abilities as well as the need to teach students how to use AI creatively.

Cheng, Z., & Li, J. (2021). In *AI & data mining: Reshaping fashion industry forecasting*, the main topic of this essay is how AI is transforming trend predictions. Fashion businesses may more precisely forecast trends & customer preferences by utilizing AI techniques like machine learning & data mining. The report talks about how fashion students are learning AI applications to gain a better grasp of market trends & consumer behaviour. AI integration is thought to be essential for maintaining competitiveness in the quickly changing fashion sector.

Lee, M., & Park, Y. (2021). This study *Artificial intelligence in fashion design: Enhancing or limiting creativity?* states that AI supports design processes without taking the place of the designer's creative intuition, the study investigates how AI affects fashion creativity. It makes the case that AI may foster creativity by automating monotonous jobs and generating patterns & analysing data to inspire designers. It highlights the need for students to use AI as a tool, not as a replacement for their creativity & cautions that an over-reliance on the technology may impede genuine innovation & creativity.

O'Neill, L., & Vaziri, R. (2020). This study *Generative design in fashion: Opportunities and limitations* explores how designers may produce inventive patterns and apparel designs using AI-powered generative design tools. The study addresses ethical issues about authorship & originality as well as the creative possibilities & constraints of AI-generated designs. It implies that while highlighting the importance of human creativity,

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fashion education should concentrate on teaching students how to use generative design software to improve their creative processes.

Zhou, X., & Li, Y. (2020). In this study *Artificial intelligence in fashion: A new era of design & innovation* examines how artificial intelligence (AI) is developing in the fashion sector, with a focus on how technologies like predictive analytics & generative design software are changing the way that fashion is designed. According to the review, AI can speed up design & production while also fostering creativity by generating fresh concepts & ideas. The loss of traditional workmanship is one of the difficulties, though. The study highlights that although AI technologies are helpful, they should be used in conjunction with human ingenuity in design.

RESEARCH METHODOLOGY

Research methodology basically is a method which mostly is used to specifically solve research problems systematically, which is quite significant. It involves gathering the data, use of statistical techniques & tools, interpretations & drawings of conclusions about research data, which specifically is significant. Keeping in sight the objectives of the study, the data particularly is collected from different sources, or so they for the most part thought.

3.1 RESEARCH DESIGN

This study uses a *descriptive research design* to evaluate the impact of artificial intelligence (AI) on fashion students' creativity, innovation & their perceptions of AI at the National Institute of Fashion Technology (NIFT), Daman. The methodology involves collecting both quantitative & qualitative data through a survey questionnaire distributed via Google Forms.

Descriptive Research: The study is descriptive, using primary data source. The goal is to understand how frequently certain behaviours or phenomena occur. A structured questionnaire was used to gather responses & factors beyond the researcher's control influenced the findings.

3.2 METHOD COLLECTION OF DATA

For this study, Primary data was utilized, which is collected directly from original sources through methods such as survey & questionnaires. Primary data is considered the most reliable & relevant type of information, as it is gathered firsthand from the source. The selection of data collection methods was carefully aligned with the research objectives & the characteristics of the target audience. In this study, the primary method used for data collection was a survey/questionnaire, designed to address the specific aims of the research.

3.3 SAMPLE DESIGN

For this research paper, convenience sampling, a type of non-probability sampling, was employed to collect responses from participants through an online medium. In convenience sampling, respondents are selected based on their accessibility & availability, rather than through a random selection process. This method allows for efficient data collection but does not provide every individual in the population an equal chance of being included in the sample, which can limit the generalizability of the findings. Despite this limitation, convenience sampling was chosen for its practicality & ability to quickly gather relevant data from a readily available pool of respondents.

3.4 LOCATION OF STUDY

This research is conducted in NATIONAL INSTITUTE OF FASHION TECHNOLOGY, DAMAN. This location is relevant to the study as the demographics of the respondents varies as they are originally from different parts of the country with varied educational & economic backgrounds. Additionally, they have different a different outlook on life which contributes to forming diversified opinions that shape the findings of our study.

3.5 SAMPLE SIZE

The total population for this study is 140 fashion students from NIFT Daman. A *sample size of 103 students* (YAMANE's formula is used to calculate the sample size) *has been selected of the total population*. The sample is chosen using a random sampling technique to ensure all students have an equal opportunity to participate, improving the representativeness of the results.

3.6 SAMPLING METHOD

Survey Questionnaire (Google Forms)

The primary method of data collection will be through a structured questionnaire distributed via Google Forms. This method ensures easy accessibility & convenience for students to participate in the survey. The questionnaire will include a mix of the following types of questions:

Closed-ended questions to collect demographic information such as age, gender, etc. & to gauge the impact of AI on creativity, design innovation & trend forecasting & to assess student attitudes toward AI in fashion.

Google Forms provides an efficient way to gather data & automatically organizes responses, simplifying the analysis process.

3.7 ETHICAL CONSIDERATIONS

All participants will be fully informed about the purpose of the study through a participant information sheet attached to the Google Form.

Informed consent will be obtained & participants will have the option to opt out of the study at any point.

Confidentiality will be maintained & no personal identifying information will be shared.

3.8 LIMITATIONS

The study is limited to NIFT Daman students, which may affect the generalizability of the results.

The reliance on self-reported data through Google Forms might introduce biases such as social desirability bias.

DATA ANALYSIS

The responses collected through Google Forms will be automatically collated & analysed using the statistical tool– *Statistical Package for the Social Sciences (SPSS)*. Descriptive statistics such as frequencies & percentages will be used to summarize the data. Inferential statistics, such as correlation analysis & factor analysis, will help determine any relationships between variables like AI usage & perceived creativity levels.

1) DEMOGRAPHICS

		Frequency	%
	16 – 20	48	46.6
Valid	21 – 25	52	50.5
	26 & above	3	2.9
	Total	103	100

Table 1.1: Age of respondents

		Frequency	%
	Male	20	19.4
Valid	Female	83	80.6
	Total	103	100

Table 1.2: Gender

		Frequency	%
	Foundation Program	39	37.9
Valid	Textile Design	21	20.4
	Masters of Fashion Management	43	41.7
	Total	103	100

Table 1.3: Department

INTREPRETATION: The demographic data indicates that most participants fall within the 21–25 age group (46.6%), followed by the 16–20 age group (44%), while participants aged 26 & above make up smaller proportions at 2.9%, respectively. In terms of gender distribution, the sample is predominantly female (80%), with males representing 20%. Regarding departmental affiliation, 41.7% of participants are from the Master of Management

department, followed by foundation programs (37.9%) & design studies (20.4%). This highlights a younger, female-dominated sample primarily associated with management & foundational studies.

2) FACTOR ANALYSIS – Impact of AI on the creative thinking, mixing of creative elements & generation of out-of-the-box ideas on fashion students.

	Component 1
How does AI affect your creative thinking?	.760
How does AI let you mix creative elements?	.719
How does AI help with out-of-the-box ideas?	.821

Extraction Method: Principal Component Analysis.

Table 2: Component Matrix

INTERPRETATION: Table 2 consists of factor analysis which highlights that AI significantly impacts creativity, with a single extracted component explaining 58.93% of the total variance. Among the variables, "AI helps with out-of-the-box ideas" shows the strongest correlation (loading = 0.821), followed by "AI affects creative thinking" (loading = 0.760) & "AI lets you mix creative elements" (loading = 0.719). Communalities reveal that 67.4% of the variance in "out-of-the-box ideas" is explained, indicating AI's strongest influence is on fostering unconventional thinking, alongside improving overall creativity & the ability to integrate diverse creative elements.

3) CROSS - TABULATION

		Do you think AI will replace traditional design skills in fashion education			Total
		Yes	No	Can't Say	
Age of Respondents	16 - 20 years	19	16	13	48
	21 - 25 years	16	25	11	52
	26 & above	0	2	1	3
Total		35	43	25	103

Table 3.1- Age wise study on AI replaces the traditional design skills

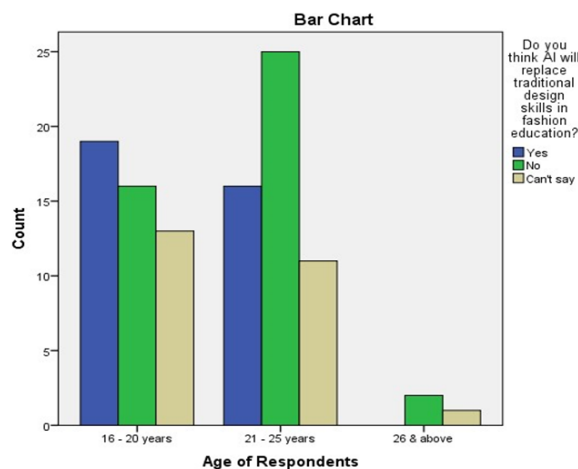


Figure 3.1: Age wise study on whether AI will replace the traditional design skills

INTERPRETATION: The data shows that respondents between the ages of 16 – 20 years are more likely to believe AI will replace traditional design roles, with 23 agreeing compared to only 11 in the 21 – 25 age group. Respondents aged 26 & above show the least agreement, with a majority either uncertain or disagreeing. The

graph highlights that 16 –20 years age groups display a higher inclination toward viewing AI as a disruptive force in traditional roles, indicating a generational perspective on AI's impact in the fashion industry.

		How do you think AI will change the role of fashion designers in the future?				Total
		Designers will become more tech focused	AI will fully replace designers	AI will only be used as a supportive tool	AI will have no impact on designers	
Age of respondents	16 - 20 years	21	5	22	0	48
	21 - 25 years	15	5	30	2	52
	26 & above	2	0	1	0	3
Total		38	10	53	2	103

Table 3.2- Age wise study on whether AI will change the role of fashion designers in the future

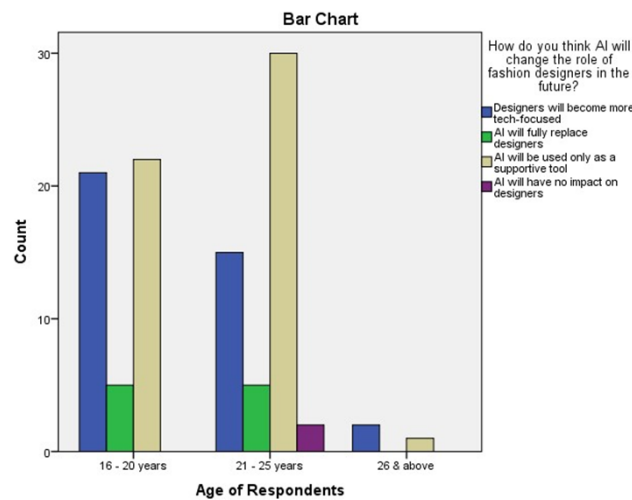


Figure 3.2: Age wise study on whether AI will change the role of fashion designers in the future

INTERPRETATION: Most respondents across all age groups believe AI will "aid the work of designers" rather than fully replace them. This sentiment is strongest among the 21 – 25 age group, with 31 choosing this option, followed by 22 in the 16 – 20 categories. The age group (26 & above) shows a more balanced distribution between agreement and uncertainty. The graph reflects this trend, indicating an overall preference for viewing AI as a collaborative tool rather than a replacement, demonstrating nuanced opinions on AI integration.

		Do you believe that AI will lead to more job opportunities in the fashion industry?				Total
		Yes, AI will create new job roles	No, AI will reduce job opportunities	AI will have a neutral impact	Unsure	
Age of respondents	16 - 20 years	17	14	12	5	48
	21 - 25 years	15	20	12	5	52
	26 & above	2	1	0	0	3
Total		34	35	24	10	103

Table 3.3- Age wise study on whether AI will lead to more job opportunities in the fashion industry

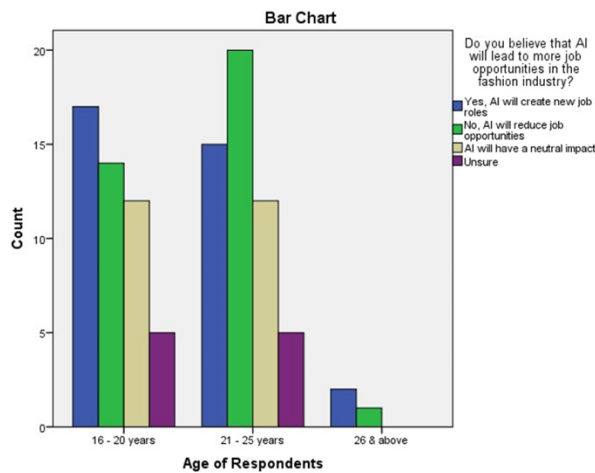


Figure 3.3: Age wise study on whether AI will lead to more job opportunities in the fashion industry

INTERPRETATION: A majority of respondents aged 21 – 25 express optimism about AI creating new opportunities, with 29 agreeing. Among participants of age 16 – 20 years a substantial proportion (24) also share this optimism. Respondents aged 26 & above are more divided, with fewer agreeing (11) & a notable number remaining uncertain or disagreeing. The graph emphasizes a generational difference, with younger participants viewing AI as a potential enabler of growth & innovation in the job market.

		Do you think fashion students need AI knowledge to be successful in the industry?					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Age of respondents	16 - 20 years	12	21	9	6	0	48
	21 - 25 years	18	26	7	0	1	52
	26 & above	0	3	0	0	0	3
Total		30	50	16	6	1	103

Table 3.4 - Age wise study on whether fashion students need AI knowledge to be successful in the industry

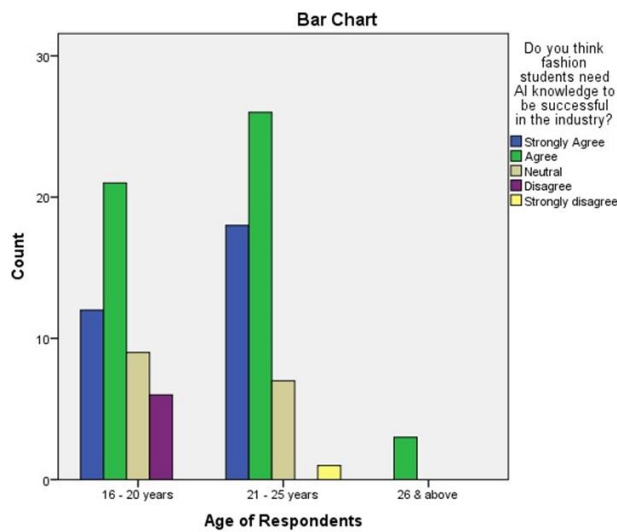


Figure 3.4: Age wise study on whether fashion students need AI knowledge to be successful in the industry

INTERPRETATION: Most participants agree that AI knowledge is essential for success, with strong agreement predominantly from the 21 – 25 age group (19 strongly agree) & 16 - 20 (18 strongly agree) age groups. Respondents aged 26 & above display a more varied opinion, with a higher proportion neutral or disagreeing. The graph illustrates a consensus among younger participants about the importance of integrating AI knowledge into education for future fashion professionals, reflecting a progressive stance on AI's role in skill-building.

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FINDINGS & CONCLUSION OF THE STUDY

FINDINGS OF THE STUDY

- The study explores the impact of AI on creativity, innovation, and skills among fashion students at NIFT Daman. Factor analysis reveals that AI fosters creativity, with a single component explaining 58.93% of the variance. Key factors include promoting "out-of-the-box ideas" (loading = 0.821) & "creative thinking" (loading = 0.760), highlighting its potential to enhance innovation.
- Respondents aged 16–25 (59.27%) are more likely to believe AI will replace traditional design roles, while 41% of those aged 26+ lean toward uncertainty or disagreement. Most participants view AI as augmenting, not replacing, designers' work.
- Regarding job opportunities, 33% believe AI will create new roles, 34% anticipate a reduction & 23.3% foresee a neutral impact. A majority (78%) of respondents aged 16–24 agree that AI knowledge is crucial for success in fashion.
- Over half (51%) believe AI will support designers, while 37% predict designers will become more tech focused. Only 10.3% of respondents aged 16–25 believe AI will fully replace designers in the future.

CONCLUSION

The study highlights AI's transformative impact on creativity, innovation & skill requirements in fashion. While opinions vary on AI's effect on job roles, most agree it enhances designers' work rather than replacing it. AI knowledge is seen as essential, underscoring the need to integrate AI training into fashion education to prepare students for a tech-driven future.

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