




Animal Patterns and CAD Trainings and Education: A New Development in Fashion Style Industry

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ABSTRACT

The fashion industry is growing in the contemporary market and it has become challenging to retain consumers of any particular brand. The fashion industry is less advanced in the way of developing products and services for the growth of business in the market. Therefore the aim of the study is to investigate the relationship between computer-aided design (CAD) training and education, and the fashion industry with the mediating role of customer satisfaction. In order to achieve the objective of the study, data was collected from 100 students of fashion institutes with the help of a questionnaire. Data was analyzed by using smart PLS software. The study findings revealed that the impact of CAD training and education on the fashion industry is significant. Furthermore, customer satisfaction significantly mediates the relationship between CAD training and education in the fashion industry. The theoretical and practical implications of this research work are noteworthy because the study has introduced new variables in the model to extend the theory of the fashion style industry and also the practice of the employees for customer satisfaction for the development of the industry.

Keywords: Computer-aided Design (CAD), Customer Satisfaction, Fashion Industry, Education, Training.

INTRODUCTION

The fashion industry is growing over time because modern consumers are mature and they are demanding products and services according to their requirements (Bhardwaj & Fairhurst, 2010). The advancement in the products and services is necessary for the satisfaction of the consumers and the employees in the fashion industry are highly concerned about the consumers to fill the requirement for better working in the market. The market of the fashion industry is based on research and development because based on this approach the new fashion is designed in products and services and delivered to the consumers for their satisfaction (Čiarnienė & Vienažindienė, 2014). The industrial growth is working appropriately, similarly, the natural bent of the consumers is also changed about the fashion industry and their aesthetic sense is also changed. The advancement in the fashion industry provides an appropriate working approach to the employees with modern techniques and tools that are used in manufacturing and designing (Nenni, Giustiniano, & Pirolo, 2013). The importance of these tools and software is to provide better facilities to the employees for their better and more advanced working.

The training of employees is necessary to make them capable of using modern technology and tools in designing the products and services of the fashion industry (Vanacker, Lemieux, & Bonnier, 2022). The computer-based new technological programs designed by the technology departments supports the work in the manufacturing and services industries for the employees (Kapos, Ashy, Gallucci, Weber, & Wismeijer, 2009). These programs are used for efficiency and effectiveness in working which is a better opportunity for the employees to enhance their learning skills and motivate them for their productivity (Dias, Pereira, Vik, & Oliveira, 2014). Computer-aided design (CAD) is widely used in the manufacturing industry for the better development of products and services that are critically important for the development of business (Kapos et al., 2009). The role of this program is to facilitate the employee's development of products and services in a better way to meet the

standard of quality in the products and services (Chen, Mac, & Gupta, 2017). Technology and industry working together are completely changing the traditional dynamics of working that have a significant impact on growth. The use of CAD provides access to a broad variety of tools and features that facilitate the simplification of workflow and the enhancement of overall productivity. Because it is possible to develop precise 2D and 3D drawings fast and correctly using CAD, the design process can be expedited, which in turn saves time and effort. While computer-aided design (CAD) is a versatile tool that is utilized in a range of industries, such as architecture, engineering, construction, and manufacturing, an individual's CAD talents can be put to use in a number of different job settings.

The existing research in the body of knowledge widely discussed the fashion industry from the perspective of advanced development. The study (Bhardwaj & Fairhurst, 2010) pointed out that economic support to the fashion industry can develop significant changes because it is an expensive industry. Čiarnienė and Vienažindienė (2014) emphasized that the advancement of fashion is possible when the research and development department of the organization is working properly. (Nenni et al., 2013) concluded that research in the area of fashion can provide better working opportunities in the market because it is a highly customized market where the requirements of the customers are translated into the actual work. Furthermore, (Bertola & Teunissen, 2018) emphasized that the fashion industry can grow when it develops all the new products and services according to the requirements of the consumers. (Macchion et al., 2015) reported that the satisfaction of consumers is possible when the employees in the fashion industry are highly motivated to improve their work quality innovatively. (Ikram, 2022) reported that the fashion industry growth is only possible with the education and research of the employees. Moreover, (Centobelli, Abbate, Nadeem, & Garza-Reyes, 2022) concluded that the survey of the consumer's requirements can provide better working facilities to the fashion industry in any market. The study (Vanacker et al., 2022) reported the growth of the fashion industry in France and Germany is based on the utilization of advanced tools to research and manufacture products and services. Indeed, a lot of studies were found in the literature that discussed the fashion industry and its growth from different perspectives. However, no particular study is deliberated to provide the reason for the industrial growth in fashion with customer satisfaction.

Thus, the research framework of this study is grounded in investigating the relationship between computer-aided design (CAD) training and education and the fashion industry with the mediating role of customer satisfaction. The framework of this research is designed on the gaps found in the earlier literature and it is a significant contribution to the literature as it has introduced CAD in the model of fashion industry development. Furthermore, the research is also significant as it has introduced the significant mediating role of customer satisfaction between CAD and the fashion industry because this relationship was not considered in the earlier research.

LITERATURE REVIEW

Computer-Aided Design (CAD) Training and Education

The use of computer-based software to assist in the design process is what is known as CAD, which stands for computer-aided design. A wide variety of engineers and designers make frequent use of computer-aided design (CAD) software. Drawings in two dimensions and models in three dimensions are both possible outcomes when using computer-aided design (CAD) software. CAD allows designers to develop designs more quickly and precisely than ever before. CAD also assist in modifying a single design into a number of different forms, which enables designers to more readily produce new components. Utilizing a wide variety of fabric samples is another use for CAD that assists designers in the creation of multiple iterations of their ideas. Some of the popular fashion design software are Adobe Illustrator, Adobe Illustrator, Blue Cherry, Browzwear, C-Design Fashion CLO 3D, and Coral Draw.

Adobe Illustrator is an excellent and effective approach to introduce pupils to the world of vector graphics software. In order to create high-definition graphics, Adobe Illustrator relies heavily on geometry and mathematics. This is not like other drawing programs where you can just click and draw or drag and drop to make something, as those methods are not applicable here. Even some of the people who design video games make use of the software in the production process.

Blue Cherry markets itself as a provider of software for the garment and fashion industries. From the moment you launch the application, you are informed that it possesses a number of capabilities and characteristics that are unique to your sector. The emphasis of this piece of software is placed on the business side of the clothes design process. This provides the tools essential to guarantee that all phases of the apparel production process use 3D design services, which in turn makes the process more precise and cost-efficient.

The creation of cutting-edge clothing designs is the primary focus of Browzwear. This 3D design program provides a wealth of fascinating benefits, such as the ability to assess how well the plan will fit before manufacturing ever begins. It is a design firm with headquarters in Singapore that is currently in the front of the most cutting-edge design trends. Browzwear offers a variety of software packages to its customers, including VStitcher and Lotta.

C-Design Fashion is 3D rendering design and modeling software that streamlines the lifespan of your apparel manufacturer. As part of the product creation process, you can share and distribute the design. The application also offers a more centralized method of sharing design details, such as sizing charts.

CLO 3D provides interactive and user-friendly 3D CAD tools for fashion design. This includes various useful capabilities, such as 2D or 3D modeling for creating sewing patterns. However, CLO 3D's primary focus is in the realm of 3D, since it provides a broad range of color schemes, styles, and scaling options. It also allows you to conduct certain 3D design tricks, like as adding layers and folds to the 3D design or even making the garment appear to be in motion.

Corel Draw is a piece of software that can be used to model and render 3D objects, and it's often regarded as a superior alternative to Adobe Illustrator. If you are seeking a potent tool for graphic design, this piece of software is an excellent option to take into consideration. The software includes a comprehensive software package in addition to a variety of useful applications. The software suite provides everything you could possibly require, from photo editing to typography and vector illustration, as well as collaborative working capabilities.

Computer-aided design (CAD) is widely used for efficiency in production and design development for any work (Jezernik & Hren, 2003). The purpose of CAD is to facilitate the industry with modern techniques that are developed with the help of technology and artificial intelligence to support the industry (Chen et al., 2017). The CAD is an appropriate method for the development of design because it is a widely accepted technique that has a significant impact on the development and boost of industry (Goh, Ho, & Bose, 1990). The customization of these software and online tools is necessary for the appropriate working for employees and the satisfaction of the consumers according to the work and its nature (Brooks, 1997). The industry in France and China is supported by CAD because of the advancement of technology that innovatively facilitates work for the appropriate development of design according to the requirements of the manufacturers and customers (Joshi & Lauer, 1998). CAD is practiced widely in the world and in every industry, and its importance has become critical (Dias et al., 2014). The designing of clothes, caps, and shoes with CAD has changed traditional working because, with the help of artificial intelligence, this tool is providing better designing opportunities to people that are critically important for their business development (Jezernik & Hren, 2003). The significance of CAD in the manufacturing sector of the automobile industry has enhanced the growth and performance of the industry by developing modern techniques for providing better working facilities to employees (Beuer, Steff, Naumann, & Sorensen, 2008). The cooperation between the industry and research and development department can facilitate economic growth when technology is widely utilized in the industrial sector.

The developing countries are also working to improve the performance of industry by educating the employees about the use of modern-day technology that is necessary for the advancement of work. The use of CAD is necessary to satisfy the consumers by producing the objects according to their requirements (Kapos et al., 2009). RFM is an acronym that stands for recency, frequency, and monetary value. It is a model that is used in marketing analysis to segment a company's consumer base based on the purchasing patterns or habits of the consumers. Specifically, it analyzes the consumers' recency (the amount of time since their most recent purchase), frequency (the number of times per month that they make purchases), and monetary value (how much money they spend).

RFM is then used to identify a company's or an organization's top customers by measuring and analyzing spending behaviors in order to improve low-scoring clients and maintain high-scoring ones. This allows the firm or organization to maximize profits. The Quality Function Deployment (QFD) methodology is a structured technique for establishing the needs or requirements of customers and then converting those needs or requirements into detailed plans for the production of goods to fulfill those needs. The word that is used to characterize these expressed as well as implicit wants or desires of customers is called the "voice of the customer." A designer can alter design drafts and make modifications with the help of computer-aided design (CAD). It's possible that a designer will employ a variety of CAD programs, all of which will be determined by the kind of textile they make. There are methods available for the general design of textiles as well as for the production of knitted and printed fabrics. There are CAD systems for illustration as well as sketch pad programs that enable a person to draw freehand directly on the computer. These systems and applications are available. There are computer-aided design (CAD) programs that may demonstrate to a designer how the drape of a certain type of cloth might look on a possible garment. Some CAD systems even design embroidered patterns. The entirety of the

design procedure may now be carried out on a computer thanks to CAD software. For instance, when designing a textile pattern including multicolored flowers, a designer has the ability to alter the geometric pattern of the flowers, make the flowers a variety of colors, alter the color of the background, resize, and rotate the flowers. All of this may be accomplished on the screen of a computer, without the need to redraw each draft. A procedure that used to take days may now be completed in just a few hours, and all of the work is saved in the system in the form of digital data.

Customer Satisfaction

The satisfaction of the consumer is the responsibility of the business (Imran, Hamid, Aziz, & Hameed, 2019). The customers are delighted with different products and services that are necessary to be developed according to their requirements (Salamat, Farahani, & Salamat, 2013). Modern-day consumers are advanced in their learning and they are highly motivated to purchase the products and services according to their requirements as they have a large market and variety of each product (Hameed, Nadeem, Azeem, Aljumah, & Adeyemi, 2018). In order for consumers to satisfy their demands, it is important for them to acquire goods and services; nevertheless, modern customers are also judgmental, and they not only care about the products and services themselves but also about the design and quality of the goods and services they purchase (Hoe & Mansori, 2018). The satisfaction of these consumers in the diverse world market is the responsibility of the businesses (Tahir, Yusoff, Azam, Khan, & Kaleem, 2012). When consumers are not satisfied with any product or service, they simply leapfrog from one product or brand to another to satisfy their needs (Islam et al., 2021). Similarly, the requirements of the consumers have also changed over time, and today consumers are more interested in purchasing products that are highly customized according to their requirements, and these products have fewer chances of risk in usability (Rita, Oliveira, & Farisa, 2019). The sustainability in consumption of the products and services is also a demand of the consumers. Since modern-day consumers are well-informed, they delight in purchasing products and services according to their requirements (Imran et al., 2019). A company's ability to provide a positive experience for its customers directly contributes to its overall performance and gives it an advantage over other businesses. Customers who are happy with the service they receive are more likely to remain loyal to the company and to give repeat business, recommendations, and word-of-mouth advertising. A greater degree of customer satisfaction leads to an increase in client loyalty, a decrease in customer turnover, and a lower cost associated with the acquisition of new customers.

Fashion Industry

The growth of industrialization has changed the traditional concepts of the fashion industry and the consumers are now advanced and demand high-quality products (Bertola & Teunissen, 2018). The employees working in the fashion industry are involved in the research and development department to make sure that the future needs of the consumers are targeted in a better way with research to develop the products and services that are needed by the fashion industry (Macchion et al., 2015). The fashion and development in modern times with computer-based technological programs have completely changed the traditional trends of marketing and it has provided a new way of working with the market (Bertola & Teunissen, 2018). Industrial growth is necessary for the better development of facilities, and modern tools should be utilized in any industry to get better results in manufacturing and designing (Macchion et al., 2015). Meanwhile, the fashion industry in France and Germany is developed based on this advancement of technology and a better working approach (Ikram, 2022).

The working fashion industry in the consumer market is a profitable business as a large segment of the market is always interested in highly customized products that meet the standards of modern fashion (Ikram, 2022). The working of the fashion industry in advanced and developed countries is appropriate because the consumers are educated and they demand the products and services that are highly related to them (Centobelli et al., 2022). Consumers in less developed countries are comparatively less interested in modern fashion because they are only concerned with their basic needs (Sysko-Romańczuk, Zaborek, Wróblewska, Dąbrowski, & Tkachuk, 2022). The development of the fashion industry to provide high-quality products and services is appropriate, but it should be done according to the requirements of the consumers to provide them with better style and design. Fabrics that were scanned were organized in a CAD program in such a way that they created a harmonious pattern, such as stripes, exotic patterns, crocodile skin, or velvet. This allowed for the creation of flexible fabric pairings and the presentation of materials in a realistic manner, especially in the form of animal skin. CAD software converts the theoretical concept of simulation design into a practicable one, thus enhancing and cultivating the creative capacity of designers (Macchion et al., 2015). Because of the rate at which technology is advancing, we can anticipate a future in which almost all of the steps involved in the production of clothing will be carried out by machines under the control of sophisticated computer programs, with very little participation from humans. CAD's ability to perform 3D visual rendering of clothing on human bodies has already had an impact on the industry, which is growing increasingly reliant on on-demand manufacturing as the primary method of

production. It will also play a major part in the development of 3D-printed fashion, which is anticipated to become the next big thing in the fashion industry. Because CAD has such a large potential for bringing about change in such a varied business and expanding the bounds of fashion, there is no going back to the era of hand-drawn design once it has been adopted. The process of gaining maximum market response from initial marketing resources by recognizing variances in the response characteristics of distinct segments of the market is referred to as market segmentation. It is the way through which market segmentation can be achieved. In this context, market segmentation refers to the tactic of "divide and conquer," which entails partitioning a market in preparation for its eventual conquest (Samala et al., 2022). It is possible for marketers, with the help of market segmentation, to pay more careful attention to the selection of customers and to provide a suitable marketing mix for each selected market segment or group of customers with similar demands. Each subdivision or sector of the market is a potential target that can be attained through the application of a certain marketing strategy.

Hypotheses Development

CAD is used to customize the design of the product on the computer according to the requirements of the customers (Chen et al., 2017). Modern-day customers are highly motivated to purchase products and services that are designed to meet their standard of work. The satisfaction of the consumers is possible when any industry utilizes appropriate tools for the customization of products and services (Imran et al., 2019). The appropriate development of business is possible when the employees in the manufacturing department are trained with modern techniques to use CAD for the customization or designing of the products and services according to the requirements of the consumers (Brooks, 1997). The consumers in industrial development are advanced and they are demanding products and services to their understanding and style (Salamat et al., 2013). Similarly, in industrial competition, the design of the consumers is taken by the order and the teams working on CAD provide products and services accordingly to develop the products (Joshi & Lauer, 1998). The advancement of employees in CAD can provide better design and style to the consumers according to their requirements to make sure that their working pattern is developed accordingly (Dias et al., 2014). The satisfaction of the consumers is important and similarly, the training of employees in CAD can provide better satisfaction to the consumers when the products are developed according to their customized requirements (Kapos et al., 2009).

Hypothesis 1. Computer-aided design training and education have an impact on customer satisfaction.

The fashion industry is developing the modern countries like France and Belgium. The research and development department of the fashion industry is working to develop a design for the satisfaction of consumers for the growth of the industry (Goh et al., 1990). The introduction of CAD in these manufacturing units and the research and development department is necessary to develop better facilities to support the growth of the fashion industry (Joshi & Lauer, 1998). The education and training of the employees for using CAD according to the requirements of the consumers have become critical and it is the only possible way to survive the fashion industry development in modern times (Dias et al., 2014). The employees in these departments must be trained productively to ensure that they have all the related information about the products and services design and they should come across the modern technique of working on CAD (Kapos et al., 2009). The advancement in CAD by the employees of the fashion industry can provide a sense of satisfaction to the employees that is critically important for the growth of the industry in a productive way (Chen et al., 2017). The CAD is supporting the fashion industry in designing products and services, similarly, the employees must be trained accordingly to provide quality work for the customers to satisfy their needs and capture a large share of the market (Joshi & Lauer, 1998).

Hypothesis 2. Computer-aided design training and education have an impact on the fashion industry.

Customer satisfaction is necessary for any industry growth in the market. When the customers of any industry are not satisfied, it would be useless for them to work productively and develop appropriate strategies for effective working (Imran et al., 2019). Customers in the top world countries are more advanced and educated and they demand the products and services according to their requirements because they are not blindly purchasing the products and services (Salamat et al., 2013). The growth of the fashion industry is also possible with the appropriate satisfaction of the consumers because if the consumers are not satisfied, they'll leapfrog from one business to another and it is not in the favor of the business world (Hameed et al., 2018). The modern requirements to satisfy the consumers are based on the customization of the products and services according to the requirements of the consumers (Hoe & Mansori, 2018). The satisfaction of the consumers is necessary for the development of products and services in the market, similarly, in the fashion industry, the brands are required to satisfy the consumers productively (Tahir et al., 2012). The products should be designed according to the requirements of the consumers because it is the only possible way to satisfy them (Islam et al., 2021). Many fashion brands in France and the United Kingdom are working on the requirement of the consumers to develop customized products because by targeting this niche in the market (Al Nadi, M. A. 2022), they can easily grow

business in the competitive market by satisfying their prospective consumers for a long time (Jezernik & Hren, 2003). Moreover, consumers in the fashion industry also demand customized products to satisfy their needs (Yaqub, Azhar, Hameed, & Murad, 2022).

Hypothesis 3. Customer satisfaction has an impact on the fashion industry.

In the advancement and development of the fashion industry, the customers are key stakeholders and their satisfaction with the products and services is necessary (Bhardwaj & Fairhurst, 2010) for business development (Hameed et al., 2018). Modern consumers are requiring businesses to develop products and services according to customized requirements, and the satisfaction of the consumers is possible in this way (Tahir et al., 2012). The development of products and services for the advancement of customer satisfaction provides a better opportunity for fashion businesses in the market (Rita et al., 2019). A focus on the development of consumers in the diverse market scenario can provide better opportunities for employees to do their work in a productive way (Tahir et al., 2012). The advancement of products and services is necessary for business development because customers are only satisfied with the products and services that are according to their standards (Hameed et al., 2018). The research and development for the designing of the products and services is a continuous process and based on this process the businesses are growing and targeting a large portion of the market share (Brooks, 1997). Business world development is possible with better opportunities in the market that have a significant impact on customer satisfaction, but the advancement of business should be according to the modern set standards (Imran et al., 2019). The customers of any business are always interested in purchasing products and services with better quality and design (Sysko-Romańczuk et al., 2022), and businesses are required to train their employees to the develop better opportunities for the consumers (Hoe & Mansori, 2018; Islam et al., 2021). Figure 1 explains the theorized framework of this research.

Hypothesis 4. Customer satisfaction mediates the relationship between computer-aided design training and education and the fashion industry.



Figure 1. Theoretical Framework

METHODOLOGY

This section of the research provides all the details about the research methodology used to conduct this research. The studies of "social sciences" are mostly based on the data collection from the respondents. This way the study collected data from the respondents who were the students of different fashion institutes that are linked with the industrial sector of the fashion industry. Particularly, the students of the research and development and manufacturing department are a target for this study because these students are directly learning and working CAD to design the products. Similarly, the method of data collection used in this research is the "survey method" as it is the reasonable method to collect the data for the convenience of the researchers and the respondents. Moreover, the "survey method" is useful to save the time and cost of the research for developing the findings of the study. Furthermore, this research has used the "cross-sectional" data collection method as it is a reasonable method to collect data in "social sciences" studies. In the same way, the respondents of the study were targeted and they were asked about their consent to data collection. The respondents were ensured that their personal information wouldn't be shared with any third party. They agreed to the terms and conditions of data collection, and later the questionnaires were provided to them. The researchers surveyed the 100 questionnaires 83 questionnaires were taken back and only 80 were considered for the study. As per Morgan's Table of sample size with population, 80 is the appropriate "sample size" for data collection. Furthermore, the researchers surveyed the 100 questionnaires 83 questionnaires were taken back and only 80 were considered for the study.

The measurement scale of the study was adapted from earlier research after confirming the "validity and reliability" (Table 1). The "reliability and validity" were tested with "Cronbach's Alpha > 0.70 and Factor Loadings > 0.60" endorsed by Hair Jr, Matthews, Matthews, and Sarstedt (2017). The measurement scale and items that are valid according to this threshold are taken in this study. The measurement scale for CAD training and education was adapted from (Hardaker & Fozzard, 1995) after confirming the threshold of "validity and reliability". Furthermore, the measurement scale for customer satisfaction was adapted from (Choong & Islam, 2020) after confirming the threshold of "validity and reliability". Finally, the measurement scale for the fashion industry was adapted from (Van Eck, Grobler, & Herbst, 2004) after confirming the threshold of "validity and reliability". The "face validity" of these items was also confirmed by the other researchers and later these items were finalized in this research.

Table 1. Measurement Scale

Variables	Description	Source
CAD Training and Education	"CAD is easy to use.	(Bappah, Sa'ad, & Yidi, 2019)
	CAD is more versatile than traditional methods.	
	CAD is quicker than traditional methods.	
	CAD stimulates ideas.	
	CAD is satisfying to use.	
	It would take a long time to become a competent CAD user."	
Customer Satisfaction	"The customers are satisfied with our products.	(Helm, Eggert, & Garnefeld, 2010)
	The customers recommend our products to others.	
	Customers little negotiate while purchasing a product.	
	The customers are well informed about products.	
	The customers like the design of our products	
Fashion Industry	Customers value our products with customization."	(Esteban-Santos et al., 2018)
	"The fashion industry is boosting with innovation.	
	The brand industry work needs labor and skills.	
	The brand industry facilitates for manufacturing of new products.	
	The products are purchased by consumers to their demands.	
	The customers of our products are satisfied."	

Statistical Analysis

For "data analysis and findings", the study has used "Smart PLS 3.0" software that is appropriate for data analysis in the "social sciences" studies. The researchers used the 'PLS measurement model and structural model' to determine the significance of developed "hypotheses" and the relationship of variables. The study findings are taken by this software and statistical analysis and recommended thresholds are used for the final findings and results.

RESULTS

In this research, "Skewness and kurtosis values" are checked for the "normality test" with Smart PLS. According to Hair Jr et al. (2017), "when the value is not below + 1.0, the distribution is right-skewed, and when the value is not greater than -1.0, the distribution is left-skewed". According to (Wong, 2013), "for kurtosis, when the value is not less than + 1.0, the distribution is leptokurtic, and when the value is not greater than -1.0, the distribution is "platykurtik". This research has normal "kurtosis and skewness" and values are available in (Table 2).

Table 2. Normality Test

Items	Mean	Standard Deviation	Excess Kurtosis	Skewness
CAD1	3.263	1.547	-0.867	0.044
CAD2	3.237	1.945	-0.721	0.562
CAD3	3.55	1.903	-0.862	0.348
CAD4	3.462	1.89	-0.859	0.427
CAD5	3.587	1.794	-0.759	0.325
CAD6	3.55	1.962	-1.033	0.298

Items	Mean	Standard Deviation	Excess Kurtosis	Skewness
CS1	3.525	1.91	-1.216	0.125
CS2	3.6	1.947	-1.03	0.23
CS3	3.638	1.912	-0.836	0.315
CS4	3.638	1.925	-0.853	0.349
CS5	3.5	1.897	-0.821	0.347
CS6	3.587	1.842	-0.564	0.421
FI1	3.55	2.043	-1.043	0.308
FI2	3.513	1.923	-0.795	0.432
FI3	3.5	2.025	-1.172	0.23
FI4	3.538	1.844	-0.783	0.33
FI5	3.788	1.787	-0.9	0.113

Furthermore, the "Measurement model" is tested with "Cronbach alpha (α), factor loadings, composite reliability (CR) and average variance extracted (AVE) values." The "factor loadings" were determined for the validity of the items in the study. The threshold "factor loadings > 0.60 " is achieved and the study has valid items. Also, the threshold " $\alpha > 0.70$ ", " $CR > 0.70$ " and "AVE 0.50" recommended by (Ringle, Da Silva, & Bido, 2015) is also achieved in this study which has also significant "reliability and validity." The findings are available in (Table 3) and (Figure 2).

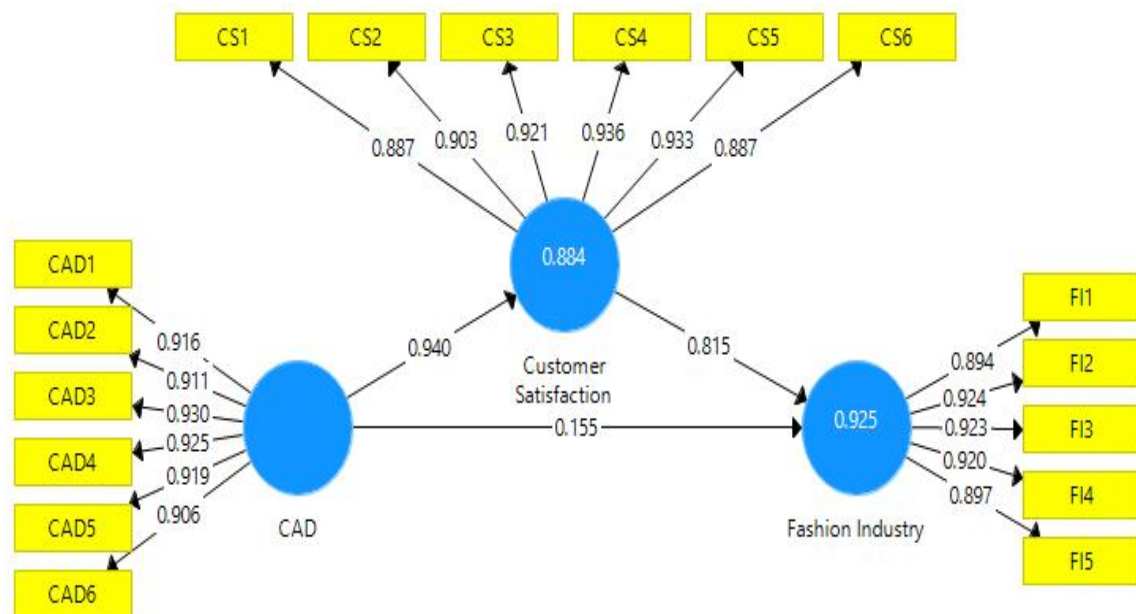


Figure 2. Measurement Model

Table 3. Validity and Reliability

Variables	Items	Factor Loadings	Alpha	CR	AVE
CAD Training and Education	CAD1	0.916	0.963	0.97	0.842
	CAD2	0.911			
	CAD3	0.93			
	CAD4	0.925			
	CAD5	0.919			
	CAD6	0.906			
Customer Satisfaction	CS1	0.887	0.959	0.967	0.831
	CS2	0.903			
	CS3	0.921			
	CS4	0.936			
	CS5	0.933			
	CS6	0.887			
Fashion Industry	FI1	0.894	0.949	0.961	0.832
	FI2	0.924			

Variables	Items	Factor Loadings	Alpha	CR	AVE
	FI3	0.923			
	FI4	0.92			
	FI5	0.897			

Moreover, "discriminant validity" is also checked in current research with the "Heteritrait-Monotrait (HTMT)" method. The threshold for "HTMT < 0.90" for apparent discriminant validity is endorsed by Gold, Malhotra, and Segars (2001). The findings have "discriminant validity" available in (Table 4).

Table 4. Discriminant Validity

	CAD	Customer Satisfaction	Fashion Industry
CAD Training and Education			
Customer Satisfaction	0.778		
Fashion Industry	0.763	0.709	

The paths of the study are identified by the "PLS Bootstrapping calculations." According to (Ringle et al., 2015), the threshold for significant results of the hypothesis is "t > 1.96 and p < 0.05". The first hypothesis is accepted as " $\beta = 0.940$, t = 86.615 and p = 0" and the impact of CAD is remarkable on customer satisfaction. The results disclose the second hypothesis is accepted " $\beta = 0.155$, t = 6.739 and p = 0" and the impact of CAD is influencing the fashion industry. The results disclose the third hypothesis is accepted " $\beta = 0.815$, t = 8.399 and p = 0" and the impact of customer satisfaction is remarkable on the fashion industry. Finally, the fourth and mediating hypothesis is significant " $\beta = 0.776$, t = 8.448 and p = 0" and the mediation of customer satisfaction between CAD and the fashion industry is significant. The findings are available in (Figure 3) and (Table 5).

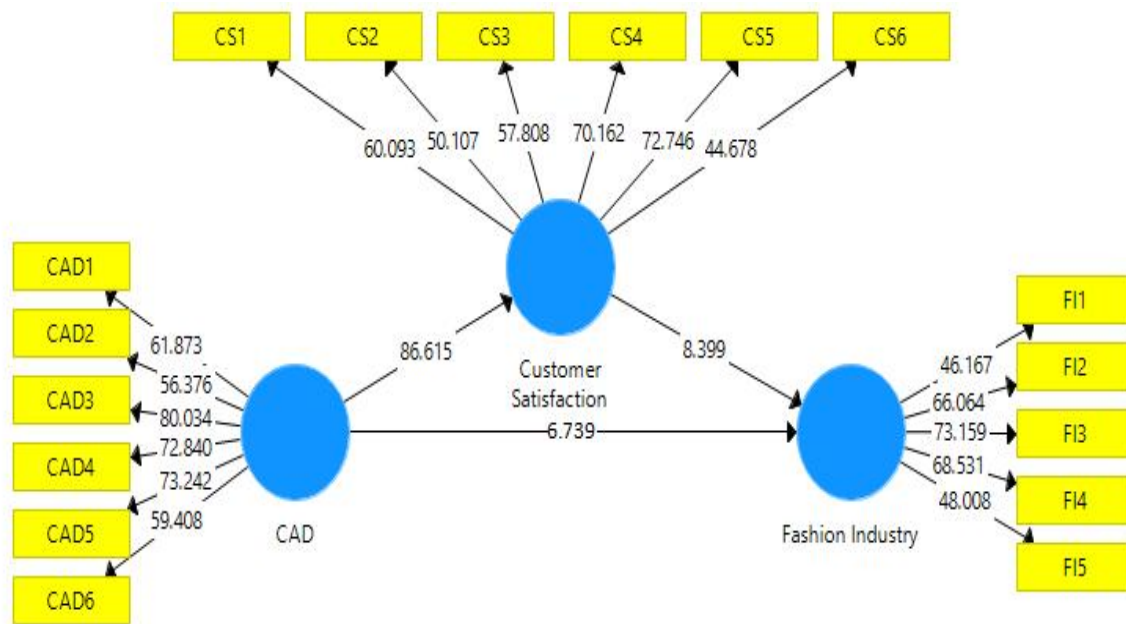


Figure 3. Structural Model

Table 5. Research Hypotheses Results

Path	Beta	STDEV	t	p
CAD Training and Education -> Customer Satisfaction	0.940	0.011	86.615	0
CAD Training and Education -> Fashion Industry	0.155	0.023	6.739	0
Customer Satisfaction -> Fashion Industry	0.815	0.097	8.399	0
CAD Training and Education -> Customer Satisfaction -> Fashion Industry	0.766	0.091	8.448	0

Finally, "PLS Blindfolding" results are taken for predictive relevance. (Ringle et al., 2015) described, "the value of Q² must not be below 0 for predictive relevance". Thus, according to the results available in (Table 6), this research obtained "strong predictive relevance".

Table 6. Predictive Relevance

	SSO	SSE	Q ² (=1-SSE/SSO)
Customer Satisfaction	480	130.713	0.728
Fashion Industry	400	95.415	0.761

DISCUSSION

The results of this study have facilitated the researchers to signify the developed hypotheses of the study. The initial hypothesis of the research explained CAD training and education have an acceptable impact on customer satisfaction. This finding is new in the literature but supported by earlier studies. CAD is used to alter the computerized product design following the demands of the clients (Deng et al., 2022). Customers in the present era are extremely motivated to buy goods and services that are created to match their standards of productivity (Chen et al., 2017). Any industry that makes use of the proper tools for product and service customization can ensure customer satisfaction. When the workers in the production department are trained in cutting-edge CAD techniques for the modification or designing of goods and services following customer needs, the firm can flourish properly (Kleinsorgen et al., 2022). Modern consumers in an industrialized society seek goods and services that fit their knowledge and preferences (Sysko-Romańczuk et al., 2022). Likewise, in industrialization, the teams using CAD produce products and services following the design of the customers' orders to develop the items (Chernchujit et al., 2019). The improvement of employees' CAD skills can offer customers better designs and styles based on their needs, ensuring that their working patterns are formed appropriately (Song et al., 2018). Consumer satisfaction is crucial, and similarly, employee CAD training can improve consumer satisfaction when items are designed following customers' specific needs.

The second hypothesis of the research explained CAD training and education have an acceptable impact on the fashion industry. This finding is new in the literature but supported by earlier studies. Modern nations like the Netherlands and Belgium are experiencing growth in their fashion industries (Sahai & Gogoi, 2020). The fashion industry's research and advancement division are aiming to create designs that will satisfy consumers and promote market growth (Sysko-Romańczuk et al., 2022). The construction of great infrastructure to support the expansion of the fashion business requires the introduction of CAD in these manufacturing facilities and the research and development department (Teslyuk et al., 2018). The only way to survive the expansion of the fashion business in the present day is to provide personnel with the education and training they need to use CAD following market demands (Nasyrov & Tiunov, 2020). The staff in these divisions needs to receive effective training to ensure that they are familiar with the most up-to-date methods for using CAD and that they have access to all relevant information on developing products and services (Hoyos Rodriguez et al., 2019). The development of CAD by the fashion company's personnel can give the workers a sense of pleasure that is crucial for the industry's growth in a constructive way (Yan-qu et al., 2018). Similar to how CAD helps the fashion sector create its goods and services, staff must receive the appropriate training to deliver high-quality work to clients, satisfy their expectations, and win a sizable portion of the marketplace (El-Ashmawi et al., 2022).

The third hypothesis of the research explains customer satisfaction has an acceptable impact on the fashion industry. Also, this finding is new in the literature but supported by earlier studies. Customer happiness is a must for any company's market expansion (Pan et al., 2022). It would be pointless for them to function productively and build suitable operating methods if the customer of any industry is not satisfied. Customers in the top industrialized nations are more sophisticated and educated, and they demand goods and services that meet their needs since they don't just buy things at random (Imran et al., 2019). Proper consumer happiness is also necessary for the expansion of the fashion sector because dissatisfied customers would jump from one business to another, which is not good for the business world (Hoe & Mansori, 2018). Parallel to how brands in the fashion sector must profitably delight customers, consumer satisfaction is essential for the growth of goods and services on the market (Rita et al., 2019). As it's the only way to please customers, items should be created with their needs in mind. Many fashion firms in Italy and the United States are focusing on consumer demand to create personalized goods because by focusing on this market segment, they can easily build their business in the cutthroat industry by long-term gratifying their prospective customers (Hoe & Mansori, 2018). Additionally, customers in the fashion sector expect personalized products to satisfy their preferences (M. Shivegowda & Boonyasopon, 2022).

Finally, the last hypothesis of the research explained CAD training and education's impact on the fashion industry is mediated by customer satisfaction. No doubt, this finding is new in the literature but supported by earlier studies (Ikram, 2022). Customers play an important participant in the progression and growth of the fashion market, and their satisfaction with the goods and services is essential for corporate growth. Modern

consumers want businesses to create goods and services in response to their specific needs, and this is a better method for firms to satisfy customers (Dagman & Wärmefjord, 2022). The market offers better opportunities to fashion enterprises as a result of the development of goods and services geared toward increasing client pleasure (Centobelli et al., 2022). In a dynamic market environment, putting greater emphasis on customer development can give employees a better opportunity to work efficiently. Although clients will only be happy with goods and services that meet their criteria, product and service innovation is essential for corporate growth (Kim, 2021). Ongoing development and research are required for the creation of products and services, and based on this process, firms are expanding and aiming for sizable market dominance (Yang & Liu, 2022). Greater market possibilities that have a big impact on customer satisfaction make it feasible for a business to thrive, but businesses must follow currently established criteria (K, El-Ashmawi et al., 2022).

CONCLUSION

The review of 14 articles found an inconsistent relationship between social media use and psychological adaptation. The reasons behind this mainly lie in the following aspects. First, the measurement of the two variables was inconsistent. In particular, there were large differences in the measurement of social media use. Secondly, the study sites were also different. Studies conducted in Western and Asian countries have different conclusions. At present, most studies are conducted in Western countries, which calls for scholars to carry out more studies in Asian countries. Besides, with an increasingly rich social media environment, more types of social media should be taken into account.

FUTURE IMPLICATIONS

Practically, this research has remarkable implications that are critically important for the advancement of practice in the fashion industry by emphasizing that customer satisfaction-oriented fashion industry businesses are more developed. The satisfaction of the customers is necessary for business development and the businesses that are working for the benefit of consumers by targeting their demand in a customized way with the help of artificial intelligence and machine-based learning software, these business practices are advancing appropriately. The role of fashion schools' management is to provide all the necessary equipment to the students to make sure that they are working deliberately in the best possible way to design the products for the customer's demands. Moreover, the role of customers can't be neglected because they are demanding the products and they are required to share the real-time appropriate information with the companies for the development of products and services because based on the appropriate information, the customers can work in the best possible way for their better business stability. The software used by the fashion industry should be developed according to the requirements of the industry, and the employees should be motivated to use this software in the appropriate way for the development of new designs in fashion for the customers. The education and knowledge of the students to use this modern developed software are necessary because based on this software, they can work with efficiency and effectiveness to get the appropriate results that are expected in a better way. Moreover, the technical learning classes for the employees and their training by the executive training centers are necessary to make sure that they are properly learning to use the software for the development of new designs. In this way, the relationship between the industry and customers would be strong.

The research findings discovered that the impact of CAD training and education on the fashion industry with the mediating role of customer satisfaction is significant. Furthermore, the research is also significant as it has introduced the significant mediating role of customer satisfaction between CAD training and education and the fashion industry. In this way, the theoretical and practical implications of this research work are significant because the study has introduced new variables in the model to extend the theory of the fashion style industry and also the practice of the employees for customer satisfaction for the development of the industry. However, there are some limitations to this research. Firstly, the study has introduced CAD training and education for the fashion industry, but it has not revealed other significant factors for it. In this regard, the research by scholars in the future may focus on the role of digital marketing in the fashion industry's growth. Secondly, the study has introduced CAD training and education for customer satisfaction, but it has not revealed other significant factors for it. Therefore, the research by scholars in the future may focus on the impact of brand management on customer satisfaction. Finally, the research has introduced the mediating role of customer satisfaction between CAD training and education and the fashion industry. Thus, future research may test the mediating impact of consumer behavior between CAD training and education and the fashion industry to avoid the leapfrogging behavior of the consumer in any business development.

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