A REVIEW OF THE IMPACT ON BRAND DEVELOPMENT IN THE MAKEUP INDUSTRY USING BIG DATA

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ABSTRACT

It was estimated that the makeup industry had grossed over $500 billion in 2020. The growth of the industry is ever escalating and the fact that the make up sells both online and offline is remarkable. The trends are decided by consumers who take delight in trying out new brands in the quest of finding a product that would match their needs. It's safe to say that Big Data had swooped in to save the makeup industry by shedding light on product and service personalization. Personalization is given in certain aspects such like ingredient and ethical preferences, digital tutorials and options to virtually try on makeup. The magic of big data begins with the developing a formula, packaging, sampling, marketing strategies and goes to the extent of finding consumer behavior. 77% of the consumers had paid more when it came to a customized service and product, thus increasing the industry's revenue. Consumers love the affluence that they are provided with and the plethora of options to reach their beauty goals, customized products and personalized services. Big data has a huge impact on making the consumers lives a plain sail in the aspect of reducing crisis during the purchasing process. The trick here lies with customer knowing their needs well. Consumers might be mindful of their needs in order to provide the necessary data to assist algorithms to provide the best options when it comes to particular factors such as sensitivity or allergic reactions to certain ingredients.

INTRODUCTION

Computational images, as studies discipline is the technological know-how that makes use of a gadget to acquire and examine photos and films to extract statistics from processed visual data. Due to coding attempts, the volume of images that a search with a large sample can create

can be costly. The expense and effort of analysing and processing massive visual data sets employing human intelligence is enormous. Computational vision APIs appear to be a viable alternative for lowering costs, increasing business intelligence, and advancing technology, particularly in the cosmetics and telecommunications industries. However, possibilities to use computational images have put in force the new dimension techniques and strategies to explore the satisfaction of the e-shoppers in the cosmetics segment. Buyers are unable to try on cosmetic products due to the variations between online and offline buying. Customers' contentment may be influenced by product quality, delivery, and price consciousness, although it is uncertain. One of the beauty industry's largest difficulties is anticipating customer forecasts, inventing novel technologies, predicting trends through computer vision matched with business intelligence, and redefining the beauty market as a result of changing buying habits. Targeted product suggestions, particularly for skincare and haircare items, must give exact skin tone matches to delight customers. By gathering data to discover underlying problems and build solutions, beauty brands can leverage data and analytics to optimize this process. Algorithms can be created in a variety of ways to enhance product customizing for consumers utilizing big data. Beauty brands can ascertain the present condition of a person's skin or hair by examining their physical attributes. Consumer data is utilized to create high-quality, custom-tailored skincare, beauty products, perfume, and haircare formulae for each customer.

RESEARCH OBJECTIVE

This study will look into the use of computational vision technologies in the beauty industry, as well as the most recent breakthroughs in image processing and analysis in social media. This research is extremely useful to businesses, professionals, and academic researchers since it highlights new methods for detecting objects and extracting quantitative data from digital photos in order to deliver objective, trustworthy results. With important, comprehensive, and easily accessible information on business intelligence, state-of-the-art, and science of computational vision technology, ethical and strategic quality assessment is possible. This research shows how computational vision, in combination with other factors like pricing, quality, and delivery, can contribute to greater consumer satisfaction.

i. Computational image

Digital image capture and processing techniques that use digital computer rather than optical processes are referred to as computational photography. Computational photography has come to encompass a wide range of topics in computer graphics, computer vision, and applied optics. It has progressed to the point where it can currently be used to study beauty trends. The database used to validate a technique for a specific problem is also important. As a result, the same database should be used for comparing findings from different procedures. Because there is no other database or outcome for comparison in digital makeup detection, this is the initial step in this research. Face analysis can be hampered by a variety of issues. One of the most serious issues is lighting. Excessive brightness or darkness on the face causes undesirable patterns, according to face analysis. Accessories such as glasses or a hat partially obscure the face structure, making it difficult to recognise. Other issues in facial analysis include facial gesture and facial orientation. Front faces with indoor lighting circumstances are employed in this study, however the main issue is bad orientation and incorrect colour, which must be remedied. The need for an algorithm to analyse aesthetic patterns has the driving force.

ii. Price

Price awareness is the most critical element influencing customer happiness. The pricing of cosmetic products is particularly important to Chinese female e-shoppers. According to the conclusions of this study, e-shoppers may find it more enticing to shop online if online vendors can cut prices even further or offer regular discounts.

iii. Product quality and dispatch

Consumers appear to be able to accept the quality of internet products when compared to product pricing. In any event, quality is a metric for gauging customer happiness. There were also significant discrepancies between what customers expected from the goods and how they felt when they received it. This may have an influence on the consumer satisfaction. As a result, it is suggested that online vendors label the grade of substandard goods for processing, hence increasing commodity representation recognition. Furthermore, the cosmetics assessment system's e-commerce standards must be in visual formats to ensure that the uploaded information of products is reliable and trustworthy.

The most significant issue of delivery is the delivery time, which refers to the time it takes from ordering online to receiving the product. The higher the customer happiness, the shorter the delivery time. One notion is that vendors increase the efficiency of goods delivery and decrease

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the overall for goods to arrive. As a result, vendors should diminish or cover freight during the delivery process, thereby improving delivery services and increasing customer happiness. There are numerous contributions to this work. For starters, it offered online store owners with information about female customers' pleasure. The findings of this study were also useful in assisting female consumers in making purchasing selections for online cosmetic products. Shop owners can also build an online promotion plan based on female shopping habits.

LITERATURE SURVEY

Computational vision is concerned with retrieving, processing, and comprehending relevant information from a single image or a sequence of images programmatically. It entails creating a theoretical and algorithmic basis for computerized visual comprehension. Consumer visual media, like as photos and videos published on social media sites like Facebook, Instagram, YouTube, and Flickr, provide exciting opportunities to research interactive multimedia culture (Burrell, 2016). In recent years, consumer and social media usage research on the Internet have been undergoing a period of unfolding and tensioning. Contemporary social and technological innovations have produced both opportunities and problems in the study of media and culture articulation (Recuero, 2018). These notions are essential for everyone who wants to understand how modern culture "thinks with data." In recent years, computer scientists have employed them in tens of thousands of quantitative analyses of social media cultural patterns. These concepts underpin data mining, predictive analytics, and machine learning, as well as their numerous industry applications (Manovich, 2015). Clients who are more acquainted about social networking sites, such as Instagram, can figure out what works and compare it to other options (Ackland, 2013). Online shopping is more flexible and convenient, allowing women to shop whenever and wherever they want (Sambargi & Gopal, 2016). Satisfaction is a state of mind that reveals how pleased customers are with the goods after they have paid for it. Female e-shoppers have different levels of happiness when it comes to purchasing things and anticipating product quality. For example, according to Hackstetter (2013), if a company ignores female shoppers' reactions and then consumers complain about it, it would result in high levels of negative emotions and lower female e-shopper satisfaction. This will have a significant impact on the company's reputation and sales growth. However, despite such research on female experience with purchasing cosmetic products online, there are maybe just few quantitative studies on the level of female e-shopper satisfaction. Customer satisfaction is an essential topic in academic literature for commercial industries, and it is worthy of ongoing

research. In the context of educational marketing, customer satisfaction can impact the formulation of a long-term marketing plan for a company (Yang & Akhtaruzzaman, 2017; Yang & Akhtaruzzaman, 2017). Influencers have played a critical part in the growth of brands on social media. The popularity of cosmetics images and videos has resulted in a wide range of content in the beauty and allied industries (Denton, 2019). Whether it's to learn new methods or keep up with developing brands, these types of immersive events attract a massive number of beauty aficionados (Wang et al., 2015). Every year, big promotional events such as the Alibaba Shopping Festival in China draw hundreds of millions of customers (Kim, Zhang, & Zhang, 2016), demonstrating the allure of pricing. Computational vision is a scientific area that studies the theory behind artificial systems that extract information from images. Video sequences, multi-camera perspectives, and multidimensional data from a scanner are all examples of image data. Computer vision, as a technological subject, aims to apply its ideas and models to the development of computer vision systems (Chatzilari et al., 2011). The Google Vision API is being used to figure out which solutions are suitable for existing and future social media initiatives. Google Vision is one of the most comprehensive computational vision technologies when compared to other APIs. To strengthen their machine learning processes, Google takes these algorithms and applies them to them (Mancosu and Bobba, 2019). As per Katawetawaraks and Wang (2011), delivery is not only a core competency online business, but it is also a factor influencing female e-shopper satisfaction because women are often apprehensive and looking forward to receiving their purchases. Computational vision analysis has been hailed as a game-changing technology that will transform business intelligence, a field that relies on data analysis to gather corporate insights and make better decisions. Google Cloud Vision, Microsoft Azure, Amazon Rekognition, Clarifai, IBM Watson Visual Insights, CloudSight, Sighthound, Face Plus Plus, and Kairos are some of the most popular cloud APIs for computational vision (Hosseini, Xiao & Poovendran, 2017). Many people prefer to buy cosmetics online for a variety of reasons, the most important of which being cost (Jeong, 2016). Kuo, Huand, and Yang hypothesized that cosmetics pricing with online discounts are cheaper than usual, considerably increasing the satisfaction of female e-shoppers (2013). According to Makadon et al. (2010), cost and quality determine the value of a product's quality, which are also key elements in the success of e-commerce. In an era of online shopping, Chinese customers prefer Hong Kong cosmetics since they are not only tax-free but also have a solid reputation for quality (Naughton, 2012). (Lin & Chen, 2013). The original aim is to provide delivery service for online buying, which is the brightest spot.

According to Ha and Stoel (2012), establishing a cordial business relationship with clients is a shared goal of e-commerce and express delivery.

CONCLUSION

As social media grows in popularity, it becomes a hive around cultural and societal issues, and it plays an incalculable role in propelling change. Users have one of the largest platforms for discussing things they care about on social media, and corporations are under a lot of pressure to join in. Social media has a tremendous impact on the beauty industry. Furthermore, today's modern world demands beauty in the digital world, emphasising the need of defining beauty. Consumers use social media for everything these days, from beauty advice and product suggestions to cosmetic tutorials and online purchasing. Flashy promotions and samples no longer have the same impact when it comes to deciding which things to buy. Further research could focus on other characteristics, allowing us to learn more about how satisfied e-shoppers are with cosmetic products. Business is transitioning from a transactional to a social relationship these days. According to the survey, social media marketing allows cosmetics items to reach customers of various ages, lifestyles, and skin types based on their affordability and skin type. A few goods that are not accessible in cosmetics stores are advertised on social media with varying degrees of diversity and bargains. All through the purchase process, brands may be more creative with their platform narratives and consumer customer interactions.

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