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The Impact Of Using Augmented Reality Beauty Filters Via Snapchat On University Students Self-Esteem And Body Image Satisfaction

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Abstract

Recently, using beauty filters has been widely spread especially among university students, many studies have focused on studying the psychological, behavioral, and social effects of using filters. Most of the studies focused on females only. Therefore, this paper investigated the impact of using augmented reality beauty filters via Snapchat on university students' self-esteem and body image satisfaction conducted on both users females and males in public and private universities, through a field study using the online questionnaire applied to a sample consisting of 200 respondents, the result of the study proved that there are statistically significant differences according to gender between male and female respondents and the level of self-esteem when using Snapchat filters, the differences are in favor of females because self-esteem of the female sample is higher than males self-esteem, also there are statistically significant differences according to gender between male and female respondents and the level of body image satisfaction , these differences are in favor of females, as females in the study sample have high body image satisfaction and their body image are not affected by the use of Snapchat filters.

Keywords: Snapchat Filters, Beauty Filters, Females Self-Esteem, Females Body Image, Males Self-Esteem, Males Body Image.

Introduction

Instead of social media being a virtual world, it becomes a real world in which young people want to live and go through all its fields, not only by using react to interact with something they like, their goal is to try and integrate virtual reality and make it real, at present with the presence of influencers on social networking sites, the matter has worsened, as influencers persuade young people to buy and try everything, they know how to influence young people, and this effect is not always positive, Social media has made influencers an icon of beauty that girls and boys take as role models for them. Now, the use of beauty filters that are owned by cosmetic companies has spread with the aim of encouraging girls to buy cosmetic products to increase companies sales, or beauty filters can be owned to social media influencers, as each blogger has a beauty filter that has special facial features of him or her, for example, the Egyptian blogger Aysel Khaled has a beauty filter for herself, a filter for her daughter who does not exceed three years, and a filter for her son who is four months, social media applications also have beauty filters ,the most popular of these applications are Instagram and Snapchat, as the number of Snapchat users in Egypt 14.6 million users according to Mobilization and Statistics Center ,and there are a very large number of beauty filters in Snapchat that make all users use the application, these beauty filters are not only for females but for men as well as, they may make females dissatisfied with their external appearance and they always want to become in the best image and many of them go to beauty clinics to become like the filters they use , this is a phenomenon called “Snapchat dysmorphia “, also speed of “normalization” as plastic surgery and other medical procedures are slowly normalized to achieve the desired appearance. Any phenomenon is new when someone does it, but it becomes popular for many people to follow through. Normalizing these things makes them seem like an everyday act, so this paper will discuss the impact of using augmented reality beauty filters via Snapchat on self-esteem and body image satisfaction conducted on both users of Snapchat females and males with differences in their economic levels.

Problem Statement

Analyzing the impact of using augmented reality beauty filters via Snapchat on self-esteem and body image satisfaction was conducted on Snapchat users, both female and male, according to the difference in their economic level (Egyptian seniors’ university students in both governmental and private universities).

Objectives

- Identifying the impact of using Snapchat filters on university students’ self-esteem.
- Knowing the impact of using Snapchat filters on university students body image satisfaction.
- Determining the level of body image satisfaction and the use of Snapchat filters according to the gender variable among university students.

- Determining the level of self-esteem and the use of Snapchat filters according to the gender variable among university students.
- Knowing the impact of using Snapchat filters on university students
body image satisfaction according to the differences in the economic
- Exploring the impact of using Snapchat filters on university students
Self-esteem according to the differences in the economic level.

Literature Review

This literature review will examine 3 different academic work perspectives to analyze the impact of using augmented reality beauty filters via Snapchat filters on university students' self-esteem and body image satisfaction, this literature analyzes and discusses the following topics:

- **Augmented Reality Beauty Filters**
- **Snapchat Platform**
- **The Psychological Impact OF Augmented Reality Beauty Filters on Users.**

Augmented Reality Beauty Filters

There are some studies that talked about the different definitions of beauty filters, their development, use of beauty filters, and their impact on users in terms of self-perception, body image satisfaction, self -esteem and self-evaluation.

Isakowtdch (2022) study aims to shed light on the effects of beauty filters on self-perception, the method used was a qualitative method using online interviews that were conducted with eight individuals, 4 females, 2 as non-binary, and 2 males, most participants stated that moving with the filter affected them more than looking at the static enhanced selfie. These results agreed with Tag El. Din (2021) who aimed to find out the level of satisfaction with the body image of a sample of users and non-users of Snapchat and Instagram filters in Saudi Arabia. It was a random sample consisting of 1208 respondent, , the tool was online survey was distinguished by the same demographic features, except for the use of filters, the results showed that there was a significant difference in body image satisfaction between the users and nonusers of Snapchat and Instagram's beauty filters in favor of the nonusers, a significant difference in body image satisfaction among the sample according to gender in favor of males ,significant difference in body image satisfaction among the sample according to age in favor of (66 to less than 88) group, The results also confirmed that users enhance satisfaction with body image through adjustments to selfies found on the image applications Snapchat and Instagram and this was proved by Isakowtdch (2022) that participants normalize with filters use and make it part from their life to be satisfied with their perception.

Lindner& Singh (2020) explored face filter usage in three ways. First, how social platform users are utilizing face filters is explored. Secondly changes in users' self-perception after face

filter usage are investigated, and third whether variations in offline behavior, this study used a mixed method study involving fifteen respondents from 18 to 25 years old, participants reflected on emotional states and behavioral changes during and after using face filters for a week. Results indicated that there is some evidence of effect after continued face filter usage, participants described how certain beautifying filters made them feel unnatural as it also lightened their skin tone in some cases conforming to stereotypes. Also mentioning how beautifying face filters tend to delete facial features such as freckles or birthmarks seems to be a general issue. In contrast, when participants did feel that the face filters were natural, participants seemed to like that beautifying filters make them look healthier and add-on (funny) filters more relaxed in social situations.

Sharma & Agarwala (2015) Examining how such filter experiences affect consumer perception of the self, specifically the gap between actual and ideal attractiveness, the study conceptualizes this change as augmented self. Over Three lab experiments showed that viewing oneself in an AR mirror as opposed to the regular mirror affects the ideal-actual attractiveness gap, and that impact differs depending on a consumer's self-esteem this agreed with Lindner & Singh (2020) who proved that participants described how certain filters made them feel unnatural as it also lightened their skin-tone in some cases conforming to stereotypes. Mentioning how beautifying face filters tend to delete facial features such as freckles or birthmarks seems to be a general issue as to why some users only stick to using add-on (funny) face filters. Sharma & Agarwala (2021) Uncover that ideal self-congruence mediates this process, showed how individuals differ in their susceptibility to self-related stimuli depending on their self-esteem, showed that viewing oneself in an AR mirror reduces the actual ideal gap for those with lower self-esteem, who may be more open to new representations and thus engage in variety-seeking and this differs with Burnell (2022) who proved that taking selfies with lenses may not influence appearance satisfaction at the moment. Findings provide tentative support for how taking selfies with lenses on Snapchat may not necessarily cause body image concerns.

Snapchat Platform

There are some studies that talked about Snapchat according to its different uses, history, developments, and its impact on users in terms of psychological terms like body image satisfaction.

Burnell (2022) explored associations between the general use of Snapchat lenses and body image concerns, and experimentally examined how taking selfies with Snapchat lenses influences appearance satisfaction, Snapchat allows users to apply lenses for photos, these lenses enhance physical appearance, also Snapchat is considered the most favorite platform to users according to those reasons, as it is self-produced content may be more common on Snapchat compared with other platforms, such as Facebook and Instagram, Snapchat is a more visual alternative to text messaging, an experimental test of this content may be more applicable in understanding the effects of daily life experiences. Also, selfies are frequently transmitted via Snapchat, Baker (2020) examined how and why individuals use Snapchat. The method used was an online survey of 210 undergraduate students. The survey examined background information, Snapchat activities, and

motives for use, as well as psychological factors like body image, self-compassion, self-esteem, and narcissism, Snapchat has made photo-based messaging important for communication. Snapchat provides a variety of filters to edit and distort content. For example, there are some filters that “apply” makeup and others that make facial features appear slimmer or more contoured and make eyes bigger or brighter. Some filters clear or lighten the skin, change eye color, and whiten teeth. These filters are known as “beauty filters,” meaning they make the individual appear flawless according to societal standards. Moreover, there are “cute filters” which go as far as morphing faces into animals. Most of the “cute filters” include airbrushing effects, increasing the length of lashes, applying eyeliner, and even lipstick, similar to “beauty” filters. Snapchat provides features like doodling, adding text, and the ability to add stickers to photos or videos, results of the study showed that college students use Snapchat for relationship maintenance, self-promotion and companionship motives. Additionally, individual differences seem to play a role in Snapchat use, several surprising relationships were found and demonstrate that psychological factors relate to different motives, and this was proved by Lindner & Singh (2020) that participants seem to like that beautifying filters make them look healthier and add-on (funny) filters more relaxed in social situations, which can be comforting. Beautifying, deformation face filters are also useful as they can save time when attending important meetings virtually. Many participants generally explain how face filters lighten the mood and keep them entertained while exploring their augmented selves. Kerr & Faulkner (2020) discussed the use of Snapchat as a learning tool, and experiences of using this platform to engage students in two very different academic disciplines Festival Management and Prosthetics, the study mentioned that Snapchat is an app that people use to share photos, exchange messages and play with, it is so popular that it has over 180 million users across the world. When Snapchat app is opened on a phone or mobile device, it opens directly to a camera, allowing the user to take a photo or video (snaps), that can then be sent, the results showed that that Snapchat can be used in very different ways to facilitate student learning and enhance engagement with learning materials, opening up the notion that Snapchat can be adapted in various ways to suit the academic who is using Snapchat as a tool within their classes. Snapchat has actively engaged students who normally are positive silent engagers. inspired by very notable changes from such students who have shifted to become actively engaged in class discussions, there are some disadvantages of using Snapchat as a pedagogical tool to enhance student learning but both case studies report that the advantages have outweighed the disadvantages.

Dhiman (2022) investigated why and how people use social networks and found Snapchat makes people happier and more personal, determined how Snapchat improves the personal relationships of people, Snapchat is a multimedia image and video messaging application on mobile platforms. Snapchat makes it easy to talk with family and friends, and it has a feature called Live Stories in which people can explore and discover the world. Life is full of fun while using Snapchat. The application also includes the “story” feature which allows people to post images in a few seconds. Stories can be viewed by your followers on Snapchat and disappear in 24 hours. That is the most useful feature of Snapchat. The qualitative research method was used to conduct inter-

views of active Snapchat research scholars studying in colleges using snapchat., results proved that the app maintains a good relationship with friends, family, and research guides, Snapchat is useful for their career development, research studies, and for their happy and healthy lifestyle. This result agrees with Kerr & Faulkner (2020) which proved that Snapchat is used as a learning tool.

Yockey (2019) examined the depiction of sexuality on a Snapchat account aimed at university students. The method was a content analysis of a total of 394 screenshots (snaps) over 3 months, involving sexuality were collected and analyzed. Of these snaps, 86.6% were female, and 13.4% were male, Concerns exist regarding the potential objectification of females through social media as well as erroneous messaging that is not congruent with social norms among the majority of university students, by social norms theory, may predispose some individuals to erroneously accept such displays and practices as the norms among the majority of university students and this study differs from the above studies because it talk about new perspective in Snapchat (Examining the depiction of sexuality on a Snapchat account aimed at university students).

The Psychological Effect OF Augmented Reality Beauty Filters on Users

There are some studies that talked about the psychological impact of beauty filters on users in terms of self-esteem, body image satisfaction, self-perception, and the consequences of using these beauty filters like cosmetic surgery.

Eshiet (2020) examining how beauty filters and images that young women view and use on social media affect their perceptions of self and beauty, the methodology used was narrative interviews, and the sample consisted of 18 college female students between the ages of 18 and 30 from a California university. Participants were individually interviewed for approximately 25-30 minutes, the results proved that social media beauty filters and beauty images have a role in affecting many young women's self-esteem and body image. Women expressed that they are seeking plastic surgeons to alter their appearance to look like their filtered photos this trend is called Snapchat dysmorphia.

Eshiet (2020) results agreed with Astsatryan (2021) as the study analyzing the frequent use of Snapchat and investigated the potential effects it has on the self-body esteem, and physical insecurities of young adult women, but it used an experimental group and a control group, so the methodology differs because Eshiet (2020) used interviews.

Alsaggaf (2021) explored the problematic nature of Snapchat's beautifying filters by presenting Saudi women's perceptions of self-beauty and reactions to these face-perfecting filters, from satisfaction to self-discrepancy, this study demonstrated the tension between the temporary satisfaction and confidence boost provided by filters and the simultaneous self-discrepancy that affects some women negatively, this study depended on the self-discrepancy theory to show the impact of perceived discrepancies between the actual and ideal self in facial images that use Snapchat filters, showing its impact on beauty standards and emotions, and according to the methodology

it differed with Astaturyan (2021) and agreed with Eshiet (2020) they used the same method as Alsaggaf (2021) conducted an online interviews on ten Saudi women, results showed that using filters can affect satisfaction and a boost of confidence while inducing discrepancies that affect them negatively, supporting the self-discrepancy theory. It demonstrated the harm caused when comparing the actual self-image to another's ideal image. This study extended the harm to the self to comparisons between the actual self and ideal self-images Alsaggaf (2021) results agreed with Tag El Din (2021).

Alsharif (2022) study examined the relationship between Snapchat filter use and the increase in cosmetics procedures in the United Arab Emirates, the methodology used was two surveys. A total of 130 responses were from Emiratis. The results showed that with the interval question, "Do you find yourself comfortable enough to take a selfie without Snapchat filters?", there was a diverse range of opinions, 23.08% answered 'extremely comfortable', 26.92% 'somewhat comfortable', 18.27% 'somewhat uncomfortable', 8.65% 'extremely uncomfortable' while 23.08% were neutral. On the contrary, when asking "What effect do you think Snapchat filters have on people's self-esteem?", 79 (75.96%) believed it has a negative consequence, which can build on existing evidence that states that excessive online interaction with "perfected" face images progressively leads to declining self-esteem, consequently, inspiring them that alter their face is evidence that there is a strong positive relation between the increase in demand for cosmetic procedures and the widespread use of Snapchat filters because it plays on women body image satisfaction. It agreed with the Eshiet (2020) study where the results proved that many participants expressed that filters affect their beauty standards and how they view themselves, so they sought plastic surgeons to alter their appearance to look exactly like their filtered photos. Moreover, Alsharif (2022) and Eshiet (2020) agreed with Maqsood & Sangra (2021) results.

Maqsood & Sangra (2021) investigated the relationship between body image satisfaction and cosmetic procedures and exploring the term "Snapchat Dysmorphia" to understand the rise of plastic surgery among young women over the past few years. It differs with Alsharif (2022) and Eshiet (2020) because the two studies used surveys and interviews, but it critically examines Netflix's documentary "The Social Dilemma" using content analysis. The film sheds light on the relationship between self-esteem, body image, and social media, the documentary explores these aspects with individual interviews conducted with former employees of social media and the results show that social media is leading toward a new direction of "normalization". Plastic surgery and other medical procedures are slowly normalized to achieve the desired appearance, also normalization leads to "Snapchat Dysmorphia" which is agreed with Eshiet (2020).

Isakowtdch (2022) aimed to shed light on the filters effects on self-perception using online interviews that were conducted with eight individuals. They were asked to look at themselves and move with the filter, in the second part most participants stated that moving with the filter affected them more than looking at the static-enhanced selfie. The results proved that this is not clear however this effect of the interview could be observed because people spend more time moving with the filter than looking at

the enhanced selfie, and that means that participants normalize with filter use and make it part of their life. Wang (2020) investigated the effects of social media comments on ideal body perception and how it influences one's body satisfaction, using an experimental design to test the effects of social media comments on body posting user ideal body perception and own body satisfaction, the focus group measured self-discrepancy, body satisfaction, and life satisfaction. Results showed that comments guided the user's perceptions of what is considered an ideal body.

Hussein (2020) investigated how Instagram usage affects women's body image and makes them dissatisfied with their bodies, it also tests how the comments women receive on their Instagram accounts affect them positively or negatively, depending on Cultivation theory. A convenience sample was used and a total of 440 young Egyptian women completed an online survey that measured Instagram use and body image concerns as well as self-objectification, results in this study show that the highest age group in the sample was between 18 to 25 years old. The results showed the relation between those who receive appearance-related commentary and self-objectification that tends to be higher than those who never receive any appearance-related commentary, who also disagreed on self-objectification items, the results reflected that there were negative relations between recipients of appearance-related commentary and self-objectification.

Theoretical Framework

Augmented Reality Beauty Filters

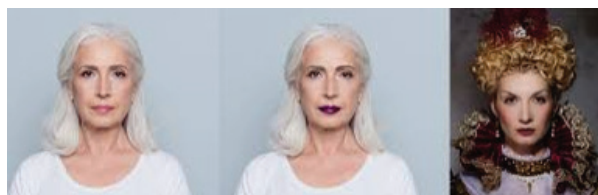
Augmented reality is a technology that works as a connection between reality and digital information technology, by applying digital content to objects, people, or places in the real world . Isakowitsch (2022)

Filters are used on social media platforms such as Snapchat and Instagram applied to the user's face. These filters recognize and transform facial features by overlaying digital masks on users' faces. Isakowitsch (2022) , Tag Eldin (2021)

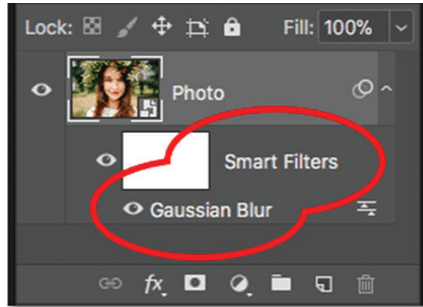
Before the innovation of filters, photos could only be enhanced by photo editing tools. Filters are automated photo editing tools using artificial intelligence and computer to detect facial features and adjust them to look perfect, beauty filters are developed by individual creators, cosmetic brands, and retailers. Some beauty filters are created for applying make-up; most beauty filters alter the contours and shapes of the face. Isakowitsch (2022)

Some types of AI filters are commonly used.

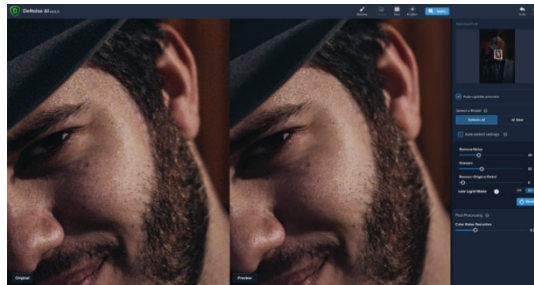
1. Style Transfer Filters: These filters use AI features to transform the style of an image to make different backgrounds with differences in general look. Yim (2020)



2. Colorization Filters: These filters use AI algorithms to add color to black-and-white images. Lavvafi(2010)

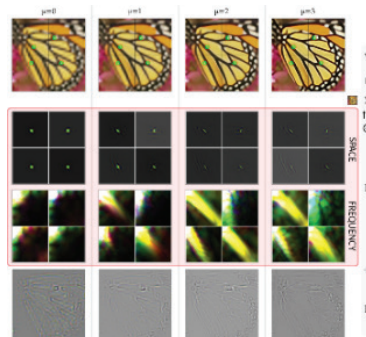


3. Object Filters: These filters use AI to detect and track objects in an image and apply various effects, such as adding borders or changing the background contractions. Saidou (2017)

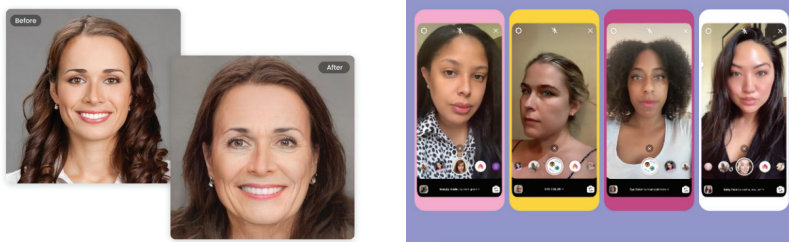


4. Noise Reduction Filters: These filters use AI to reduce noise and improve the overall quality of an image. Isakowitsch (2022)

5. Upscaling Filters: These filters use AI to increase the resolution of an image without losing quality. Wang (2017)



6. Face Filters: These filters use AI in an image to apply various effects, such as adding make-up or changing facial features to look like ideal conditions. Isakowitsch (2022)



The Social Comparison Theory

The theoretical framework of this research was based on Social Comparison Theory, which was developed by Leon Festinger in 1954, Social Comparison Theory indicates how individuals compare themselves to others to evaluate their own opinions and abilities, reduce uncertainty in these areas, and learn how to define the self. The theory consists of two main hypotheses: the first hypothesis states that there exists an inherent drive within individuals to evaluate their opinions and capabilities to gain precise self-evaluations. The second hypothesis states that the degree that objective and non-social means are unavailable, people will self-evaluate by comparing themselves with the opinions and abilities of others. The theory affirms that people achieve validity and cognitive clarity by comparing themselves in important domains against an objective standard provided by the people they are comparing themselves with. The theory proposes two main types of comparisons that may occur: upward comparisons and downward comparisons, depending on the individual's level of motivation social comparison can result in self-enhancement using downward comparisons, in which one compares oneself with others who are considered inferior to feel better about oneself. It can also hurt an individual's self-report and self-esteem using upward comparisons, in which one compares oneself with others who are considered superior; these negative social comparisons are damaging to perceptions of the self and oneself-esteem, which forms the focus of this study, tests the hypothesis that a negative correlation exists between the use of Snapchat filters and self-esteem and body image satisfaction. This theory is relevant because Snapchat application provides abundant opportunities for individuals to engage in social comparison, as it contains an extensive number of heavily edited images. Verduyn (2020)

The Operational Model

In particular, through social comparison theory which gives the researcher a theoretical approach to study, the researcher decided to propose an operational model that clears the relation between the variables, and the literature review of the study had an impact on that as well, as the studies Eshiet (2020) , Astatsuryan (2021),Alsaggaf (2021), Tag El Din (2021) Sandra (2021), Isakotdch (2022) , Wang (2020), Hussein (2020) showed that the use of filters affects both body

image satisfaction and self-esteem among users. This operational model, which the researcher made, shows that the use of Snapchat filters affects both self-esteem and image satisfaction for Students of Egyptian public and private universities in the last year, according to the difference in the gender factor (male and female) and the difference in the economic level factor.

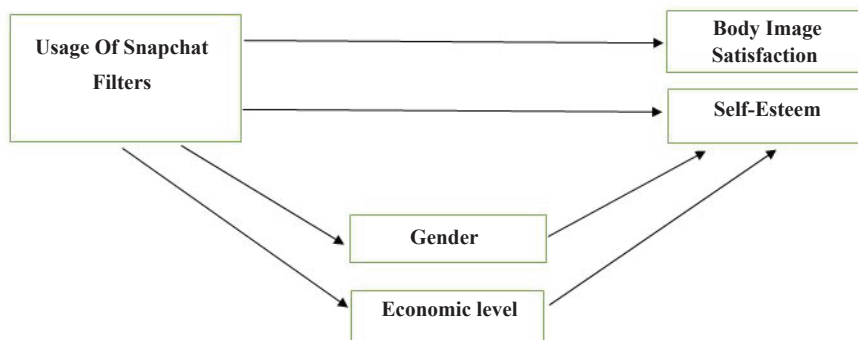


FIGURE 1: Operational model showing mediators of gender and economic level in body satisfaction and self-esteem among senior university students using Snapchat filters.

Methodological Framework

Research Questions

Q1: What types of Snapchat filters does the study sample use?

Q2: What are the reasons that the study sample used Snapchat filters?

Q3: To what extent do Snapchat filters have an impact on university students' self-esteem levels?

Q4: To what extent do Snapchat filters have an impact on university students' body image satisfaction levels?

Research Hypotheses

H1: There are statistically significant differences according to gender between male and female respondents and the level of self-esteem when using Snapchat filters.

H2: There are statistically significant differences according to gender between male and female respondents and the level of body image satisfaction when using Snapchat filters.

H3: Snapchat filters affect female's self-esteem more than males.

H4: Snapchat filters affect the body image satisfaction of females more than males.

H5: University students' females use Snapchat filters more than males.

H6: The use of Snapchat filters has a negative impact on the body image satisfaction of university students with low economic level

H7: There are no Snapchat filters that impact the level of self-esteem of university students with high economic levels.

H8: There are no Snapchat filters that impact the body image satisfaction of university students with high economic levels.

Study type

It is a descriptive-analytical study that relies on a quantitative survey that aims to describe and analyze the phenomenon, identify the reasons for its existence, determine the correlation between its variables, and reach results that provide solutions to the problem of this study. In which the researcher focused on the impact of using Snapchat filters on Self-satisfaction and body image satisfaction among university students,

Method and Data Collection Tool

The study depends on the online questionnaire tool to collect data for answering the study's questions, The tool includes closed and scale questions, scales that measure study variables (the use of Snapchat filters, body image satisfaction, and self-esteem), and questions to measure the intensity of Snapchat use.

Sample of the study

The researcher depends on a focus sample of Egyptian senior' university students in both Egyptian universities private and public, where university students represent the largest category that uses Snapchat filters according to the pilot study the researcher made before the beginning of the study, the results showed this category use Snapchat filters more than other filters applications. The online survey was distributed from 29 July to 16 August, distributed to students of various practical and theoretical faculties, and it included a sample from private and governmental universities Cairo University a governmental university, and Ahram Canadian a private university, the total respondents was 200 respondents, 125 females and 75.

The characteristics of the study sample

Variables		Q	%	N	%
Gender	Female	125	62.5	200	100.0
	Male	75	37.5		
University	Governmental	75	37.5	200	100.0
	Private	125	62.5		
Economic Level	Low	70	35	200	100.0
	Moderate	88	44		
	High	42	21		

Test of validity and reliability

1) The questionnaire was presented to Professor Dr. Hayat Al-Badr, the research supervisor, then the proposed modifications were made. The virtual validity test was achieved by applying the questionnaire to a small sample of university students, before publishing to ensure that the questions were easy to understand and validated.

2) The researcher relied on a number of statistical transactions, so after completing the field study data collection, the data was coded and entered into the computer, then it was processed and analyzed and extracted the statistical results and the relationships between the variables that are difficult to reach with the results of the Google form questionnaire, and these process conducted through using SPSS program(statistical package for social science) The statistical variables (nominal), (ordinal)variables, and other variables were varied by (scales). The researcher applied the statistical coefficients between the statistical variables that fit each variable in the study, using the following statistical coefficients and treatments.

(1) Frequencies

(2) (Mean) and standard deviation (Std. Deviation).

(3) (Independent sample T-test to compare the averages of two independent samples).

(4) The (crosstabs) the sum of analyzed data in Spss which identifies the variables and the choices of every individual alone.

The level of significance approved in this study as the researcher relied on the level of significance of (0.05) to consider the differences as statistically significant or not.

The theoretical and operational definitions

The concept	The operational definitions
<p>Using Snapchat filters Filters recognize and transform facial features by overlaying digital masks on users' faces. Augmented reality beauty filters change the appearance of the face by confirming its amazing beauty ideals. Isakowitsch (2022)</p>	<p>The variable of using Snapchat filters for the study sample is measured through the survey tool via a Likert scale by answering a number of statements, and the respondent chooses the degree of his or her agreement with it from 1:4</p> <ol style="list-style-type: none"> 1) How often do you receive negative comments about your physical features e.g., bad hair day, you have a big nose, etc. on Snapchat? 2) How often do you receive positive comments about your physical features with filters e.g., nice hair, beautiful smile, etc. on Snapchat? 3) I use filters to avoid negative comments about my face. 4) During the day, I think about how I look many times. 5) I often worry about how I look to other people without a filter. 6) I use filters to improve my look. 7) I use filters for fun 8) For a potential romantic partner to want me, I must be facially attractive so I use filters
<p>Body Image satisfaction Body image Satisfaction is defined as "the positive mental image that people keep about their bodies, and it includes both perception and conscience, that is, how does everyone see himself? How does he feel about his body. Grogan (2016)</p>	<p>This concept is measured through the survey tool via a Likert scale by answering a number of statements, and the respondent chooses the degree of his or her agreement with it from 1:3</p> <ol style="list-style-type: none"> 1) It is important for me to look Perfect in the filter I use. 2) I adjust the shape of my face with a filter. 3) Filters allow me to look in my perfect appearance I want 4) Filters improve my facial face features 5) I like specific types of snapchat filters adapt to my face 6) I use all types of Snapchat filters with my face 7) I want my facial features in real life be like Snapchat filters 8) I want to make cosmetic surgery to look like my favorite filter
<p>Self-Esteem Self-esteem refers to an individual's perception or objective aspect of one's own self-worth, one's feelings of self-respect and self-confidence and the extent to which the individual holds positive or negative views about his own self. Abdel-Khalek (2017)</p>	<p>This concept is measured through the survey tool via a Likert scale by answering a number of statements, and the respondent chooses the degree of his or her agreement with it from 1:3</p> <ol style="list-style-type: none"> 1) I feel pressure from Snapchat filters to look good. 2) I feel pressure from Snapchat filters to improve my life. 3) When I use Snapchat filters I feel I am satisfied with myself 4) When I use Snapchat filters I feel I am a rich person 5) I don't feel respect for myself when using a filter 6) I don't feel any feeling when I use the filter 7) I feel useless when I doesn't use Snapchat filters 8) I feel ashamed of myself when I haven't tried to look at me best to look like the filter in my real life.

The Results

Conducting this paper on a sample consisting of 200 university students by conducting an online questionnaire on students from different faculties of two universities Cairo University and Ahram Canadian University, the results of the study can be explained as follows:

- **Analyzing the survey questions and scales:**

Reasons for using Snapchat

Table 1. Knowing why university students use snapchat

Statements	Quantity	Percent	Mean	Std. Deviation
contact with others	59	24.5%	1.6550	.94362
share content	33	16.5%		
snapchat has more privacy	25	12.5%		
snapchat filters	115	57.5%		
for fun	109	54.5%		
Total	200	100%		

The researcher found it is important to know why university students use Snapchat, and she found that the majority of the respondents use Snapchat for filters with a percentage of 57.5%, 54.5% use it for fun, 24.5% use it to contact others, 12.5% for Snapchat privacy and these results agree with Isakotdch (2022), Tag El Din (2021), Singh (2020), Sharma& Agarwala (2015), Kim (2021), Kahn& Martinez (2020), Barbell (2022), Baker (2020), and Hawker (2022) they agreed that the people for its filters and the sake of fun and a sense of comfort, also Snapchat is the most private application from the rest of the applications and that it makes them close to their friends and family and make them comfortable when using it.

Analyzing the intensity of using snapchat

Table 2. Intensity of using snapchat per day

Statements	Quantity	Percent	Mean	Std. Deviation
Less than 1 hour	130	65%	1.50	.808
hours 3 - 1	48	24%		
hours 6 - 4	16	8%		
hours 9 - 7	4	2%		
+ hours 10	2	1%		
Total	200	100%		

64,7% of the sample spend less than 1 hour on Snapchat every day, and 24% spend from 1 to 3 hours every day, This result does not agree with what is known among people, as the prevailing idea is that young people spend all their time these days on social media applications especially Snapchat as the researcher mentioned at the first according to the pilot study students use Snapchat the most.

Table 3. Using editing photos applications

Statements	Quantity	Percent	Mean	Std. Deviation
Always	20	10%	3.56	1.377
Often	27	13.5%		
Sometimes	50	25%		
Rarely	26	13%		
Never	77	38.5		
Total	200	100%		

38,5% of the sample said (Never) which means they never use photo editing, 25% said (Sometimes), and 10% said (Always) which means they were satisfied with the filter only and they didn't find the need to edit photos.

Table 4. How many times the sample use the original camera

Statements	Quantity	Percent	Mean	Std. Deviation
Always	46	23%	1.87	.567
Sometimes	133	66.5%		
Never	21	10.5%		
Total	200	100%		

66.5% of the sample said (Sometimes) they use it while they take photos, 23% said (Always) and 10.5% said (Never) they use the original camera.

Table 5. Relation between the amount of likes and self-satisfaction

Statements	Quantity	Percent	Mean	Std. Deviation
Yes	54	27%	23	.422
Sometimes	46	23%		
No	100	50%		
Total	200	100%		

50% of the sample said (No) 27% said (Yes) and 23% said (Sometimes) that means that there is respondent can remove their photo if it does not reach the wanted amount of likes and they agree with the social comparison theory, At the same time 50% of the sample doesn't affect anything of the likes.

Answering the study questions

- **Question 1: What types of Snapchat filters do the study sample use?**

Table 6. The snapchat filter types used by the sample

Statements	Quantity	Percent	Mean	Std. Deviation
Classic Flower Crown	86	43%	1.8650	1.27077
Cute Melani	70	35%		
Lemme	57	28.5%		
Enemy Ai	44	22%		
Super Queen	45	22.5%		
Cats	34	17%		
Dogs	37	18.5%		
Total	200	100%		

43% of the sample used (Classic Flower Crown), 35% used (Cute Melani), 28.5% used (Lemme) and 18.5% Of the sample used (Dogs) and this is similar to Eshiet (2020) who used a focus group as a tool to collect data and they make participant try Classic Flower Crown filter to know The level of self-esteem when they use filters, which means that this filter is famous among Snapchat users.

Question 2: What are the reasons that the study sample used Snapchat filters?

Table 7. Reasons for using snapchat filters

Statements	Quantity	Percent	Mean	Std. Deviation
For fun	84	43%	1.0000	.00000
Makes me looks beautiful	52	26%		
I love it	35	17.5%		
I don't have reason	29	14.5%		
Total	200	100%		

43% of the sample use filters for fun and 26% use filters because it make them beautiful and 17.5% said they love it and 14.5 said they don't know why they use filters, and these results agree with the some studies from literature review studies; Isakotdch (2022), Tag El Din(2021),

Singh(2020), Sharma& Agarwala (2015), Kim (2021), Kahn& Martinez (2020), Barbell(2022) Baker (2020), and Hawker (2021) they argued the use of beauty filters, the purpose of their use, and why young people use Snapchat, and it has proven that the use of filters is generally for the sake of fun and a sense of comfort, or that they do not need to make makeup to look great, as the filters save them time and effort.

And when asking the sample about (would you like to do plastic surgery to look like the filter) 50,5% of the sample said that it is impossible to do plastic surgery to become like a filter and 24% said (Yes) they can do it.

Table 8. The impression about filter use according to gender

Count		Filter use impression			Total
		Low	Moderate	High	
Gender	Female	38	61	26	125
	Male	31	35	9	75
Total		69	96	35	200

The previous table clears that there are 61 females of the sample had a moderate impression and 35 males from the sample had a moderate impression of filter use, which means both have the same impression about filter use impression.

The researcher was able, through the guidance of previous studies, to develop a scale for self-esteem and body image satisfaction to identify the impact of the psychological impact of both variables, when using Snapchat filters for the study sample.

• **Question 3: To what extent do Snapchat filters have an impact on university students' self-esteem levels?**

Table 9. Self-esteem level and filter use scale

Statements	Agreement degree						Total		Mean	Std. Deviation
	Always		Sometimes		Never		Q	%		
	Q	%	Q	%	Q	%				
I feel pressure from Snapchat filters to look good	42	21	87	43.5	71	35.5	200	100	2.145	.7394
I feel pressure from Snapchat filters to improve my life.	30	15	79	39.5	91	45.5	200	100	2.305	.7173
When I use Snapchat filters I feel I am satisfied with myself	54	27	96	48	50	25	200	100	1.980	.7226
When I use Snapchat filters I feel I am a rich person	32	16	69	34.5	99	49.5	200	100	2.335	.7386
I don't feel respect for myself when using a filter	37	18.5	72	36	91	45.5	200	100	2.270	.7550
I don't feel anything when I use the filter	71	35.5	88	44	41	20.5	200	100	1.850	.7350
I feel useless when I don't use Snapchat filters	30	15	68	34	102	51	200	100	2.360	.7301
I feel ashamed when I have not made an effort to look like my filter	38	19	73	36.5	89	44.5	200	100	2.255	.7569

Through the previous table, it is clear that 35% of the sample do not feel pressure about Snapchat when using the filters and it makes them look good as they answered (never), and 43% of the sample said (sometimes) they feel pressure from Snapchat when using the filters and they look good, 45% answered (never) they said that filter does not improve their lives, and when asked if they are satisfied with themselves when using filters, 48% answered (sometimes) and 25% answered (Never), while when asked do they feel that they are rich people when using filters, 49% of the sample said (never), and when asked when they are using filters, they feel respect for themselves 45.5% answered (never). From the above, most of the sample when they use Snapchat filters their self-esteem is not affected, this may be due to their high self-esteem.

Question 4: To what extent do Snapchat filters have an impact on university students' body image satisfaction levels?

Table 10. Body Image Level and filter use

Statements	Agreement degree						Total		Mean	Std. Deviation
	Always		Sometimes		Never		Q	%		
	Q	%	Q	%	Q	%				
I receive negative comments about my physical features e.g., bad hair, a big nose, etc. on Snapchat	37	18.5	57	28.5	106	53	200	100	2.345	.7739
I receive positive comments about my physical features with filters like nice hair, beautiful smile	63	31.5	97	48.5	40	20	200	100	1.885	.7101
I use a Snapchat filter to avoid negative comments about my face.	45	22.5	56	28	99	49.5	200	100	2.270	.8064
During the day, I think about how I look many times.	53	26.5	108	54	39	19.5	200	100	1.930	.6763
I often worry about how I look to other people without a filter.	48	24	79	39	73	36.5	200	100	2.125	.7696
I use filters to improve my look.	49	24.5	97	48.5	54	27	200	100	2.025	.7190
I use Snapchat filters for fun.	106	53	76	38	18	9	200	100	1.560	.6546
For a potential romantic partner to want me, I must be facially attractive so I use filters.	36	18	84	42	80	40	200	100	2.220	.7309

53% of the sample said (Never) they never receive negative comments about their physical features on Snapchat, while 48,5 % of the sample said (Sometimes) they receive positive comments about their physical features with filters like nice hair, and beautiful smile, and 49.5% of the sample answered (Never) they use filter to avoid negative comments about their face, 45% answered (Sometimes) they think about how they look many times during the day, 48.5% said sometimes they think how to look to some people, 48.5% said,(sometimes) they use filter to improve my look. 53% answered (Always) that they use Snapchat filters for fun,42% of the sample answered for a potential romantic partner to want them, they must be facially attractive, so they use filters while 40% said (Never).

The results of the research hypotheses

H1: There are statistically significant differences according to gender between male and female respondents and the level of self-esteem when using Snapchat filters.

Table 11. The relation between the level of self-esteem when using snapchat filters and gender.

The variable	Gender	F	Sig	T	N	Mean	Std. Deviation	Std. Error Mean
Level of self-esteem	Female	2.041	.155	2.624	125	2.38	.737	.066
	Male				75	2.09	.738	.085

The data of the previous table indicates that there are statistically significant differences between the gender variable (male and female) and the use of the Snapchat filters, where the T value was (2.624), It is a function at the level of significance f (2.041), These differences are in favor of females because the arithmetic mean of self-esteem of the female sample is higher than that of males And sig is statistically significant (155). That is, the females in the study sample have high self-esteem and their self-esteem is not affected using Snapchat filters. Therefore, the hypothesis is proven.

H2 : There are statistically significant differences according to gender between male and female respondents and the level of body image satisfaction when using Snapchat filters.

Table 12. the relation level of body image satisfaction when using snapchat filters and gender

The variable	Gender	F	Sig	T	N	Mean	Std. Deviation	Std. Error Mean
Level of Self-esteem	Female	4.079	.045	2.140	125	2.1840	.73379	.06563
	male				75	1.9600	.68655	.07928

The previous table indicates that there are statistically significant differences between the gender variable (male and female) and the use of the Snapchat filters, where the T value was (2.140), It is a function at the level of significance f (4.079), These differences are in favor of females because the arithmetic mean of body image of the female sample is higher than that of males And sig is statistically significant (.045). That is, the females in the study sample have high body image satisfaction and their body image is not affected using Snapchat filters. Therefore, the hypothesis is proven.

H3: Snapchat filters affect female’s self-esteem more than males.

Table 13. The impact of using snapchat filters on females and males’ self-esteem.

Count		Self-esteem level			Total
		Low	moderate	High	
Gender	female	19	40	66	125
	male	17	34	24	75
Total		36	74	90	200

According to SPSS sum (crosstabs) which identifies the variables and the choices of every individual the researcher accounted for the level of self-esteem when using Snapchat filters, and comparing the moderation gender variable (male, female) Thus, it becomes clear that the sub-hypothesis, which states that Snapchat filters affect the self-esteem of females more than males is not proven because there are 66 females of the study sample have high self-esteem and their self-esteem don’t affect when they use the Snapchat filter.

40 females of the study sample have moderate self-esteem when using filters means that sometimes when they use filters their self-esteem can be affected and sometimes also they are not affected, On the other side 24 males of the sample have high self-esteem levels, and using filters has no impact on their self-esteem, but 34 males have moderate self-esteem and that means at sometimes using filters affect their self-esteem.

H4: Snapchat filters affect the body image satisfaction of females more than males.

Table 14. The impact of using snapchat filters on females and males body image.

Count		Body image level			Total
		Low	Moderate	High	
Gender	Female	24	54	47	125
	Male	19	40	16	75
Total		43	94	63	200

According to the SPSS sum (crosstabs), it becomes clear that the sub-hypothesis, which states that Snapchat filters affect the body image of females more than males, is not proven because 54 % of females of the sample have moderate body image satisfaction levels when using filters and 53 % males of the study has moderate body image level when using filters, 24 females have low body image when using filters, and 37.6 from females have high body image satisfaction and using filters don’t affect their body image so males body image affect more than female body image when using Snapchat filters compared to the sample.

H5: University students’ females use Snapchat filters more than males.

Table 15. The using of snapchat filters according to females and males.

Count		How many filters photos you upload on snapchat per week			Total
		Low (0:5)	Moderate (6:10)	High (10+)	
Gender	Female	37	49	39	125
	Male	16	44	15	75
Total		53	93	54	200

According to the sum of Spss (crosstabs) of the previous table, it becomes clear that the sub-hypothesis, which states that females use Snapchat filters more than males is proven, as the rate of the images that

males upload on the Snapchat application as follows 44 males from the sample upload from 6 to 10 photos per week, and when compared to the number of photos uploaded by females, 49 of the females in the sample upload from 6 to 10 photos per week on the Snapchat app. Compared to the fact that the number of females in the sample is greater than the number of males of the sample, This means that males and females are to some extent, equal in the use of beauty filters, also, because the moderate range is close, despite the difference in the size of the female sample from that of males as shown in the previous table, 39 females of the sample upload more than 10 pictures per week, and 15 males from the sample upload more than 10 per week.

H6: The use of Snapchat filters has a negative impact on the body image satisfaction of university students with low economic level.

Table 16. Using Snapchat filters has a negative impact on the body image satisfaction of university students with low economic level.

COUNT		Body image level			Total
		Low	moderate	High	
Economic level	Low	14	36	20	70
	moderate	26	40	22	88
	High	3	18	21	42
Total		43	94	63	200

According to the sum of Spss (crosstabs) of the previous table, it becomes clear that the sub-hypothesis, which states that the use of Snapchat filters has a negative impact on the body image satisfaction of university students with low economic level is proven because 36 respondents from the sample have moderate self-esteem level while having low income and 20 respondents of the sample has high self-esteem level while having low income and 14 respondents only has low income while having low income, and 40 respondents have moderate self-esteem while having a moderate income, and that means Snapchat filters has no negative impact on the body image satisfaction of university student with low economic level.

H7: There are no Snapchat filters that impact the level of self-esteem of university students with high economic levels.

Table 17. The relation between the level of self-esteem and the economic levels

Count		Level of self-esteem			Total
		Low	Moderate	High	
Salary	Low	14	29	27	70
	Moderate	17	33	38	88
	High	5	12	25	42
Total		36	74	90	200

It becomes clear that the sub-hypothesis, which states there is no Snapchat filter impact on the university students' level of self-esteem with high economic level is proven because 5 respondents only of the sample have low self-esteem and have low income and that means that self-esteem when using filters is not affected by a higher income level.

H8: There are no Snapchat filters that impact the body image satisfaction of university students with high economic levels.

Table 18. The relation between the level of body image and the economic levels

Count		Body image level			Total
		Low	Moderate	high	
Economic level	Low	14	36	20	70
	Moderate	26	40	22	88
	High	3	18	21	42
Total		43	94	63	200

Thus, it becomes clear that the sub-hypothesis, which states that there is no Snapchat filter impact on the body image satisfaction of university students with high economic levels is proven because 20 respondents of the sample have high body image satisfaction levels while having low income and that means that Snapchat filters has no impact on the body image satisfaction of university student with high economic level.

Discussion

At first the results related to the use of snapchat filters:

The majority of the study sample use Snapchat for Snapchat filters with a percentage of 57.5%, and 54.5% of the sample use Snapchat for fun, these results agree with Isakotdch (2022), Tag El Din(2021), Singh(2020), Sharma& Agarwala (2015), Kim (2021), Kahn& Martinez(2020), Barbell(2022) Baker (2020), and Hawker (2021) studies focused on the use of beauty filters, and why young people use Snapchat, people use snapchat for its filters, for fun and a sense of comfort, the result cleared that 64,7% from the sample spend less than 1 hour on snapchat every day.

Second the results related Self-esteem level and using snapchat filter

52.8% of the females have high self-esteem and using filters has no impact on their self-esteem, 32.8% of females of the sample have moderate self-esteem, and using filters can affect their self-esteem sometimes, 32% of males sample have high self-esteem and using filters have no impact on them, 45% of males sample have moderate self-esteem and filters could so the females of the sample self-esteem are not affected more than males self-esteem when using filters. Rather, using filters has a moderate effect on the males’ self-esteem, which means that sometimes the males’ self-esteem is affected when using Snapchat filters. And this result differed from studies Eshiet (2020), AlSharif (2022), Sandra (2021) which proved that there is a trend called (Snapchat dysmorphia) women go to plastic surgery to look like their filtered photos because the use of filters affects negatively on their self-esteem and body image satisfaction. But those studies were from other countries such as the Emirates and Saudi Arabia, not Egypt, so this may be due to the Egyptian girl’s nature, self-esteem, and body image.

Third the results related body image satisfaction level and using snapchat filter

54 % of the females of the sample have moderate body image satisfaction and aren’t affected by Snapchat filters,53 % of males have moderate body image levels when using filters, 24 females have low body image when using filters, and 37,6% of females have high body image satisfaction and aren’t affected by Snapchat filters, so males’ body image is affected more than female body image when using Snapchat filters compared to the sample.

Table 19: A statement from the body image scale

Count		I use snapchat filter to avoid negative comments about my face			Total
		Always	Sometimes	Never	
Gender	Female	19	35	71	125
	Male	26	21	28	75
Total		45	56	99	200

When comparing this result with the social comparison theory, which states that individuals compare themselves with others to be satisfied when using Snapchat filters, here the opposite of

this hypothesis is proven as 49.5% of the sample when they asked if they use Snapchat to avoid negative comments, they said (Never), that's means they never use filters to any social comparisons.

Conclusion

To sum up, there are statistically significant differences according to gender between male and female respondents and the level of self-esteem when using Snapchat filters, these differences are in favor of females whereas Snapchat filters do not affect the female's self-esteem of the sample because they have high self-esteem. Rather, the use of filters has a moderate effect on the males 'self-esteem, and this means that sometimes their self-esteem is affected when using Snapchat filters.

Also, there are statistically significant differences according to gender between male and female respondents and the level of body image satisfaction when using Snapchat filters and these differences are in favor of females, where 54 % of females have moderate body image satisfaction level when using filters and 53 % males of the study has moderate body image level when using filters, 24 females have low body image when using filters, and 37.6 from females have high body image satisfaction and using filters don't affect their body image so males body image affected more than female body image when using Snapchat filters compared to the study sample size, and the majority of the study sample use Snapchat for Snapchat filters and also the most reason for use filter was for fun.

The Study Recommendations

This study must be applied to a larger sample size than the sample on which the study was conducted.

So that the results become clearer and more broadly. Because precisely the study sample was specific. Therefore, the study must be completed to include more samples than this sample to know the impact of beauty filters on the psychological side of both females and males.

References:

- Alsharif, A. A., Alsaleh, F. S., & Alshamsi, M. N. (2022). Examining the effect between Snapchat filters on the increase of cosmetics procedures in the United Arab Emirates. *International Journal of Science Academic Research*, (pp.3917-3925).
- Abdel-Khalek, A. M. (2017). Introduction to the Psychology of self-esteem, Department of Psychology, Faculty of Arts, University of Alexandria, Egypt.
- Astsaturyan, I. (2021). The perfect shot: Effects of Snapchat filters on the physical insecurities and self-esteem of female young adults. *ResearchGate*. https://www.researchgate.net/institution/Harvard_University
- Alsaggaf, R. M. (2021). The impact of snapchat beautifying filters on beauty standards and self-image: a self-discrepancy approach. In *The European Conference on Arts and Humanities*.
- Burnell, K., Kurup, A. R., & Underwood, M. K. (2022). Snapchat lenses and body image concerns. *New Media & Society*, 24(9), (pp.2088-2106).
- Baker, N. (2020). Individual Differences among Snapchat Users: Uses and Motivations. *Doctoral dissertation*, University of Rhode Island. https://digitalcommons.uri.edu/oa_diss/1198
- Dhiman, D. B. (2022). Snapchat, happiest and personal Social Media Platform for Research Scholars, A Critical study. A Critical study. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4215268
- Eshiet, J. (2020). Real me versus social media me: Filters, Snapchat dysmorphia, and beauty perceptions among young women. Retrieved from <https://scholarworks.lib.csusb.edu/etd/1101>
- Grogan, S. (2021). *Body image: Understanding body dissatisfaction in men, women, and children*. Routledge. ISBN 9781317400431.
- Hussein, S. (2020). Instagram use and young women's body image and self-objectification in Egypt. *Master's thesis*, The American University in Cairo.
- Hawker, K., & Carah, N. (2021). Snapchat's augmented reality brand culture: sponsored filters and lenses as digital piece-work. *Continuum*, 35(1), (pp.12-29). <https://doi.org/10.1080/10304312.2020.182737>
- Isakowitsch, C. (2022). How augmented reality beauty filters can affect self-perception. In *Irish Conference on Artificial Intelligence and Cognitive Science* (pp. 239250-). Cham: Springer Nature Switzerland.
- Kerr, G., & Faulkner, S. (2020). Dog filters & flower crowns: Using Snapchat as a pedagogical tool in higher education. *Journal of Social Media for Learning*, 1(1).
- Kim, H. M. (2021). What do others' reactions to body posting on Instagram tell us? The effects of social media comments on viewers' body image perception. *New Media & Society*, 23(12), (pp.3448-3465).
- Kahn, A. S., & Martinez, T. M. (2020). Text and you might miss it? Snap and you might remember? Exploring "Google effects on memory" and cognitive self-esteem in the context of Snapchat and text messaging. *Computers in Human Behavior*, 104, 106166.
- Lindner, A., & Singh, A. (2021). *The use of augmented reality (AR) face filters on social platforms*. University College London.
- Lavvafi, M. R., Monadjemi, S. A., & Moallem, P. (2010). Film Colorization, Using Artificial Neural Networks and Laws Filters. *J. Comput.*, 5(7), (pp.1094-1099).
- Maqsood, A., & Sangra, S. (2021). The effect of snapchat filters on self-image: a study of Netflix's 'The Social Dilemma'. *Global Media J*, 3(3).
- Saidou, D. M. (2017). Tracking Moving Objects Using Foreground Detector and Improved Morphological Filter. *Open Access Library Journal*, 4(12), (pp.1-7).
- Sharma, S., & Agarwala, S. (2015). Self-esteem and collective self-esteem among adolescents: An interventional approach. *Psychological Thought*, 8(1).
- Tag El. Din, A. (2021). Body Image Satisfaction in A Sample of Users and Nonusers of Snapchat and Instagram's Beauty Filters in Saudi Arabia (Comparative research). *Journal of King Abdulaziz University Jeddah*, 29(4), (pp.581-611). doi:10.4197/Art.29-4.21
- Verduyn, P., Gugushvili, N., Massar, K., Täht, K., & Kross, E. (2020). Social comparison on social networking sites. *Current opinion in psychology*, 36, (pp.32-37).
- Wang, Y., Wang, X., Liu, H., Xie, X., Wang, P., & Lei, L. (2020). Selfie posting and self-esteem among young adult

- women: A mediation model of positive feedback and body satisfaction. **Journal of health psychology**, **25**(2), (pp.161-172).
- Yim, J., Yoo, J., Do, W. J., Kim, B., & Choe, J. (2020). Filter style transfer between photos. In *Computer Vision–ECCV 2020* Springer International Publishing. Part VI 16 (pp. 103-119)
- Yockey, R. A., King, K. A., Vidourek, R., Burbage, M., & Merianos, A. (2019). The Depiction of Sexuality Among University Students on Snapchat. **Sexuality & Culture**, **23**, (pp.132-141).

