

A Work Project, presented as part of the requirements for the Award of a Master's degree in
Management from the Nova School of Business and Economics.

**The impact of the new coronavirus on make-up habits and the Lipstick
Effect in the post Covid-19 era**

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17-12-2021

Abstract

The crisis brought by the latest Covid-19 pandemic has affected many different aspects of our everyday life, challenging and changing the way we do things. Our make-up behaviours were no exception. In previous periods of recession, cosmetic sales were used as a proxy to outline the economic situation – a phenomenon known as the Lipstick Effect. The aim of this paper is to record women's cosmetic habits in the aftermath of Covid-19 and to inquire if the Lipstick Effect can still be considered a valuable economic indicator. We conducted a questionnaire study completed by 232 women and we collected pre- and post-pandemic data for comparison. Make-up usage decreased both in terms of frequency of application and purchase. The focus shifted from the lip to the eye area: mascara and eye make-up boomed, while the implementation of face masks disrupted females' cosmetic behaviour and forced women to adopt new make-up habits (#maskmakeup).

Keywords: Consumer Behavior, Behavioral Science, Make-Up Habits, Lipstick Effect, Covid-19 Pandemic, Face Masks

Acknowledgements

First, I would like to thank my supervisor, Professor Luis Martinez, for accompanying me with availability and professionalism, entrusting me, inspiring and guiding me throughout the master's thesis journey.

A huge thanks to my parents who have always allowed me to pursue my passions and interests and who have always encouraged and supported me along the way. I am profoundly grateful to Filippo and Anna, for being a constant support all along. Finally, thanks to the Picciotti group, my second family.

1. Introduction

The crisis brought by the Covid-19 pandemic has affected many different aspects of our everyday life, challenging and changing the way we do things. The spread of this new coronavirus generated a ripple effect across all the markets around the globe, and the beauty industry was no exception. The first response of the beauty industry to the latest economic and health crisis was positive, with a lot of brands switching their production into hand sanitizers and detergents, as stated in the latest McKinsey report. In fact, there are signals that the cosmetics industry may once again demonstrate a relative resilience (Gerstell et al., 2020).

However, even though the cosmetics industry is coping well with the emergency, our make-up habits have been shaken up. Current general trends include wearing less make-up and more rarely than before Covid, feeling more beautiful with natural looks, treating oneself better and with better quality products – Latimer (2021) lists in the Global Cosmetic Industry Magazine. 25% of Americans are wearing less tinted make-up products (foundation, blush, lipstick, eyeshadow, etc.,) and 39% revel in feeling like a more natural version of their self (Latimer, 2021). Moreover, Grabenhofer (2021) mentions that 17% of women stopped wearing make-up on account of the coronavirus, while Latimer (2021) affirms that 15% plan to keep on wearing less make-up, indicating a potential long-lasting impact on beauty standards.

In 2020 the global cosmetic market shrank by an estimated 8% – as reported by Statista (for further detail, please see Figure 1) – in comparison to sales in 2019 (Ridder, 2021), but the industry has already registered an increase in sales during previous recessions. For instance, during the worldwide economic turmoil of 2008, L'Oréal registered a 5.3% growth in cosmetics sales (Elliott, 2008). This phenomenon is referred to as “the Lipstick Effect” and it is defined as a theory that when confronted with an economic recession, consumers will be more disposed to acquire less expensive luxury items (Costello, 2021). The Lipstick Effect or Lipstick Index is often deployed as a barometer of consumer confidence during periods of economic turmoil (Wood, 2020), thus playing a major role in defining the evolution of the economic situation.

However, the breakout of Covid-19 resulted in the implementation of mandatory masks that do not allow anyone to see your lips, let alone what color they are (Wood, 2020). In addition, Wood (2020) states that during lockdown, the demand for essential beauty products – such as foundation and lipstick – dropped by 70%. Lipstick – and make-up in general – is falling out of popularity because consumers are wearing masks and not going out as often (Bhasin, 2020). Lipstick sales have come to a sudden halt, so much that lipstick has been referred to as a “casualty of the pandemic”, but on the other hand women are becoming more and more inventive in finding new ways to increase their attractiveness (Biron, 2020). In fact, skincare goods are booming, being the most lucrative product category (Ridder, 2021), and eye make-up increased by 204%, so that the hashtag #maskmakeup has even been created, as Biron (2020) records. Nevertheless, with a worldwide health crisis holding mouths behind masks, the "Lipstick Index" doesn't make much sense these days (Bhasin, 2020).

Therefore, with this research we intend to record women's cosmetic habits in the aftermath of the coronavirus crisis and examine the resulting changes occurred in their daily make-up activities. This paper also aims to understand if the Lipstick Effect can still be considered an economic indicator, and consequently if the Lipstick Effect can be applied also to the post Covid-19 crisis. The topic has been debated beforehand by others, arguing that during periods of economic recession women turn to make-up to increase their attractiveness (Hill et al., 2012), to attract a partner (Mafra et al., 2020), to treat themselves in a more frugal way (MacDonald and Dildar, 2020) or to brand themselves in order to achieve best jobs and advance in their careers (Nufer, 2021). However, the phenomenon of the Lipstick Effect applied to the latest economic and health crisis has never been inquired before. The findings of this study may provide insights into cosmetic behavior under unusual conditions where people's social contacts have been limited.

2. Literature Review

Many females spend a considerable amount of their time putting on make-up every day, with almost 7 out of 10 women using lip makeup (Mintel 2019). Make-up is a technique that changes others' perceptions; women use cosmetics to draw the attention of others and/or to conceal their flaws (Mafra et al., 2020). It is often applied to increase facial appeal and emphasize characteristics that reflect femininity (Comfort et al. 2021). Made-up women are generally acknowledged as more charming, healthier, and more prestigious (Mafra et al. 2020); sometimes women who wear make-up are assessed more favourably (e.g. warmer) (Richetin, Huguet & Croizet, 2007). According then to Etcoff (2013), made-up women feel more attractive, because body care and cosmetic products can boost women's self-confidence – making them feel more charming, as a result.

A recent study discovered that due to the pandemic individuals who lived alone, were younger, and were more distressed about the closure of beauty services engaged in more beauty behaviors during the last pandemic (Pikoos et al., 2020). However, potential effects of Covid-19 on beauty behaviour are still to be determined.

2.1 Covid-19 Impact on Cosmetic Habits

Because of the Covid-19 breakout, since last year, the world's population has often been required to stay at home and wear face coverings, and we have been forced to adapt our lifestyles and habits to the so called "new normal". Enforced self-isolation, physical self-distancing measures, and extensive constraints on public and private livelihoods are worldwide macro-stressors that influence mental and physical well-being, especially in susceptible social groups (Esterwood & Saeed, 2020).

Baceviciene and Jankauskiene (2021) conducted a pre- and post-lockdown exploratory study and addressed it to Lithuanian university students. Between several hypotheses formulated, they initially expected that students would manifest a greater internalizing of archetypical

beauty standards and body image concerns (Baceviciene & Jankauskiene, 2021). In fact, a noticeable raise in media pressure to achieve thinness/low-fat ideals surfaced in surveyed females. However, contrary to their expectations, appearance ratings did increase in female students, but only slightly.

Hygienic habits were profoundly affected by Covid-19. After lockdown, women increased the frequency of handwashing and the use of hand sanitizers due to risk of infection (Ścieszko et al., 2021). Moreover, there has been a statistically meaningful uptick in the consumption of hand-washing lotions and a declining trend in the usage of color cosmetics for the face and eyes, lipsticks, balms and nail polishes, hair dyes, and fragrances (Mościcka et al., 2020). For instance, 11.4% of women surveyed by Mościcka and collaborators (2020) declared to use face and body treatments prior to the pandemic, while during lockdown the percentage of women applying them increased to 15.7%.

Ścieszko et al. (2021) reported that, during lockdown, women were more invested in facial skin care and more frequently followed the complete skincare procedure at home. According to the results of their survey, the majority of respondents saw an improvement in the condition of their skin as a result of devoting more time to facial care at home. Subsequently, many women spent more money on beauty products during the pandemic – for instance, L’Oréal e-commerce sales grew by 52.6% (Ścieszko et al., 2021). However, since both studies conducted by Mościcka and colleagues (2020) and Ścieszko and collaborators (2021) have targeted and examined Polish women, it is questionable whether the same changes, on a marginal basis, have also occurred in the rest of the world – although their results are aligned with ongoing general trends.

In addition to spending more time taking care of their skin, many women started applying less make-up and employing less colour cosmetics. While this is a relatively newly embraced habit, a recent study on make-up application revealed that females have a behavioral preference for

light make-up and an attitude for beauty products that highlights visual contrast in the eye and mouth areas (Comfort et al., 2021). These findings supported the notion that perceptual attributes necessary for understanding cosmetic enhancement are important determinants of beauty visual preferences (Comfort et al., 2021).

Covid-19 crisis also changed our lifestyle, so significantly that the last pandemic has forged and nurtured a culture in which many people now work and socialize entirely from home (Rice et al., 2021). Numerous lockdowns forced us to spend more and more time at home and thus to go out less, to self-distance when outside and to adapt to heavy restrictions and safety measures. In their study, Baceviciene and Jankauskiene (2021) argue that stay-at-home policies and distant education may mitigate distress associated with body image, particularly in women, as the micro-stressors such as going out in public and being targets of public glances are removed during isolation.

In this new lifestyle setting, software such as Zoom, Microsoft Teams and Google Meets, have enabled life, collaboration, and productivity to advance virtually, but such platforms can also influence how individuals view themselves (Rice et al., 2021). Rice and colleagues (2021) discussed that since people are now required to confront their own image on video, sometimes for hours every day, they are becoming more self-conscious about how they appear to others and might develop negative self-perceptions as a result. Patients often seek aesthetic treatments to improve their perceived look, but are very rarely pleased with the actual results, ultimately spiraling into a cycle of self-dissatisfaction (Rice et al., 2021).

In a recent study, Messaraa and collaborators (2020) used an eye-tracking assessment of screen-observed models to indicate that make-up could impact the way we look at a face on a display, especially lipstick. Women who are appraised to be more attractive when they wear make-up are also perceived to be healthier, more confident, and more professionally successful by both male and female participants (Nash et al., 2006), as part of a generalized “attractiveness

halo” effect for attractive faces (Zebrowitz & Montepare, 2008). As people are forced to see their image on a screen for several hours a day, this created a new issue called “Zoom dysmorphia”, which causes individuals to develop concerns for aspects of appearance that may not truly require correction at all or correction to the extent that the individual fears (Rice et al., 2021).

Finally, the latest pandemic has generalized the use of face coverings outside, and it is now common to wear a mask for extended hours (Yokoyama et al., 2021). The usage of masks has affected our make-up habits, so that we adapted our cosmetic behaviours. Yokoyama and colleagues (2021) argued that face masks impacted our perception of beauty, and it resulted in a modification of our make-up routine with a decrease of lipstick usage, a switch from high covering face products to lighter finish ones to lessen color transfer, and an increased attention paid for eye make-up and hair – as they are the visible parts of the face.

Mascara and eye cosmetics are, in fact, booming as women have learnt how to adapt their make-up routine to masks. In Japan, for instance, where the trend of use of face coverings has emerged since 2010, masks are not only used to conceal the face to cope with societal fear but also as an attribute of beauty (Yokoyama et al., 2021). Yokoyama et al (2021) claimed that the influence of the mask on appearance is multifaceted and wearing a mask can be either a constriction or a beneficial aesthetic feature depending on the culture, the inclination, and the single person.

2.2 The Lipstick Effect and its Implications

The Lipstick Effect is often referred to as women’s willingness to spend money to improve their appearance despite their economically driven financial limitations (Hill et al., 2012). It has been used to explain the blooming of the beauty industry during periods of economic downturns. In fact, conventional economic theory expects that, as a consequence of the income effect, spending on cosmetics should also decrease during a recession (MacDonald and Dildar,

2020). However, Hill et al. (2012) researched how and why downturns in the economy impact on women's spending behavior and the outcomes revealed that recessionary trends reduced consumers' desire for most commodities, but not women's interest in attractive-enhancing goods – especially lipsticks. They proved that the Lipstick Effect is guided by females' urge to attract resourceful partners and hinges on the perceived partner appeal feature served by beauty commodities.

Hill and collaborators (2012) also found out that hints of the economic recession heightened women's yearning for a relationship mate with strong levels of financial security, which subsequently moderated women's augmented desire to acquire beauty products in responding to recession cues. They demonstrated that the Lipstick Effect mirrors a strategic change in women's consumptive behavior that is guided by a yearning to captivate the partners they desire the most in a setting where they are scarce (Hill et al., 2012).

Netchaeva and Rees (2016) deepened the topic and found evidence that during economic downturns, the increased levels of economic distress, that women typically experience, resulted in an enhanced desire to purchase look-enhancing products to both attract romantic counterparts and establish a positive self-impression in the work environment, as both approaches could aid women in becoming financially secured. In fact, they claimed that, regardless of marital status, females are primarily motivated to uplift their appearance during downturns and when they are financially distressed. However, when presented with recessionary cues, women typically opted to polish their appearance to seem more professional than to impress and attract men, which indicates that they may be chasing any potential opportunity to secure their employment, rather than a companion per se (Netchaeva and Rees, 2016). In this particular regard, Etcoff and colleagues (2011) proved that a made-up woman is somehow perceived as more capable than a woman without make-up, particularly in a work

environment; while female facial features with make-up are generally thought to be more attractive (Nash et al., 2006; Batres et al., 2018; Mafra et al., 2020).

According to Sacco et al. (2015), when women are in poor economic circumstances, their preference for appearance-enhancing products functions at the stage of automatic visual attention.. They used a dot probe task to assess reaction latencies to establish how rapidly individuals can divert their visual attention from a previously focused stimulus to find a different target cue somewhere else in the field of vision (Sacco et al., 2015). In fact, visual focus is adaptively adjusted; then if recessionary headlines are a motivational trigger for women, and cosmetic products become a significant incentive in accordance with women's current needs, then the observed pattern of attentional adherence (and thus automaticity) can apply to the Lipstick Effect. Results collected by Sacco and colleagues (2015) demonstrated that when females were triggered with recession cues, they demonstrated an improved automatic visual bias for beauty products in comparison with females presented with cues of economic stability.

Afterwards, Li and colleagues (2019) empirically demonstrated the Lipstick Effect, taking into consideration the following assumption: the occurrence of the Lipstick Effect should appear as a decline in the elasticity of consumer income to lipstick demand during economic downturns. To prove the reduction in consumer elasticity, they used a panel smooth transition regression (PSTR) demand model in order to seize the correlation between macroeconomic circumstances and demand for lipstick. Considering a sample period from 2006 to 2016, the findings revealed that income elasticity demand for lipstick dipped from 0.31 to 0.05 throughout the 2008 recession, then slowly got back up to 0.31 by the second quarter of 2014 as the labor market recovered – thus validating the existence of the Lipstick Effect. In fact, a shift in consumer attitude was identified in response to macroeconomic factors since individuals became less

income resilient with respect to lipsticks during a period of economic decline than during a growth period (Li, Zhen and Dorfman, 2019).

Finally, MacDonald and Dildar (2020) collected evidence for the Lipstick Effect during the Great Recession through the Bureau of Labor Statistics' Consumer Expenditures Survey (CEX) and rejected previous hypotheses about the main reasons why the Lipstick Effect occurs. Contrarily to Hill et al. (2012) – who argue the life cycle hypothesis – and Netchaeva and Rees (2016) – who instead sustain the employment-based hypothesis –, they furnished extensive proof demonstrating that the Lipstick Effect is led by a psychological longing to "treat" oneself more frivolously by shopping less for clothing or jewelry and by buying new skin care and cosmetic products instead (MacDonald and Dildar, 2020). In fact, employing household-level records from the Bureau of Labor Statistics' Consumer Expenditures Survey, they failed to find any evidence of lifecycle or occupation-based assumptions during the Great Recession. They argued that figures consistently point to single women outspending on toiletries compared to married women, yet this was true during as well as before and after the Great Recession (MacDonald and Dildar, 2020). They also debated that, although the life cycle hypothesis may have some plausibility, it could not be used to justify the shifts in consumption that occur during an economic downturn.. Instead, younger females are substituting away other categories of spending, such as dining at restaurants, jewelry, and clothing, in order to buy more cosmetics (MacDonald and Dildar, 2020).

More recently, however, Nufer (2021) suggested that nowadays women use beauty products to brand themselves to secure better jobs and expedite their advancement in their careers. In fact, according to Nufer (2021), females noticed that enhancing their appearance through make-up helped them achieve better jobs and/or careers since more and more women choose to take the issue into their own hands and deal with their financial situations themselves.

Therefore, during previous tumultuous times, the Lipstick Effect has been used as an economic indicator to outline that despite their income decrease women purchased and consumed more cosmetic products to boost their appearance. According to Nufer (2021), the Lipstick Effect represents the third indicator of a recession or crisis – the first two being substituting expensive goods with cheaper options and investing in good humor (for instance, watching a comedy instead of a drama).

However, during the latest crisis, women rarely needed to boost their physical appearance through make-up because of stay-at-home restrictions and safety measures – which explains general trends like wearing less make-up and focusing more on skincare routines to enhance the natural beauty of the skin. Only recently, the sale of iconic products like lipstick has come to a sudden halt, while cosmetics for the eye area have become best sellers. Hence, in the post Covid-19 era, cosmetics can still be used as an economic indicator, but we can notice a shift from the conventional Lipstick Effect to the new Mascara Effect (Nufer, 2021).

2.3 The Present Research

We are presenting a study where we investigate the impact on Covid-19 pandemic on women's behavior towards cosmetic implementation. Building on previous research and explanatory theories, we now advance the following assumptions:

- Covid-19 has profoundly impacted on females' cosmetic activities, forcing them to adjust their behaviours and/or to adopt new habits – where face masks played a fundamental role;
- the Lipstick Effect can be applied to the post Covid-19 crisis, still being a valuable economic indicator;
- the Lipstick Effect will be reflected in women's willingness to treat themselves in a more frugal way – as per the psychological hypothesis sustained by MacDonald and Dildar (2020) mentioned above.

These predictions are to be tested in an exploratory questionnaire, which aims at recording the adjustments women have made to their cosmetic activities and understanding the psychological conditions underneath the hypothesized Lipstick Effect occurrence.

3. Method

3.1 Participants and procedures

The questionnaire study was completely anonymous and voluntary. It was conducted among 232 random women, since females mostly wear make-up products. The study lasted from October 14, 2021, to November 11, 2021.

We created a survey that was shared through an online link among females of all ages. Respondents could take the survey either in English or in Italian; actually, Italy was the country where the questionnaire was distributed the most. The English version was taken by European females, mainly from Portugal and Germany.

Among all the study respondents, 83.6% of females who completed the survey took it in Italian, whereas 16.4% filled in the English version. Participants were unified in age groups as follows: 18-24 years – covering 59.5% of respondents, followed by 25-34 years – 25.6%, and 51-64 years – 7%. The least number of answers were acquired from underaged people (under 18) – covering 4% of respondents, people aged between 35 and 50 – 3.5% and over 65 years – only 0.4%.

The examination concerned routine make-up activities and habits such as purchases in time, money spent on cosmetic goods, type of product normally used. To see how women changed their behaviours to adapt them to “the new normal”, participants provided pre-pandemic and post-pandemic data related to their cosmetic habits. Participants were also asked to quantify how much they believed their make-up routine had changed due to Covid-19 outbreak and if they would still wear lipstick despite face coverings. Lastly, participants were presented with some statements and they had to declare how much they felt related to them – those statements

are linked to women's psychological behaviours and could explain the Lipstick Effect in the post Covid-19 era.

3.2 Measures

Participants provided information about their age and their cosmetic habits before and after the outbreak of Covid-19. The questions were multiple-choice and could either allow for a single answer, as in the case of the intensity of cosmetic usage, or multiple answers could be accepted for a single question, as for the place of products purchase or choice of products purchased. Then, we presented the participants with two different 5-items scales that assessed their feeling of adjustments of their cosmetic routine (from “none at all” to “a great deal”) and the extent of their agreement or disagreement to the following statements (from “strongly disagree” to “strongly agree”): *“If Covid had not happened, I would have still changed my make-up routine”* and *“These are critical times and I think I deserve to treat myself by buying some make-up”*. We also included a homogeneity test (taken from Li, Zhen and Dorfman, 2019) to evaluate whether the income elasticity for cosmetic products is sensitive to changing macroeconomic conditions (i.e., age, money spent on make-up). We ran two single linearity tests taking into consideration age, frequency of wearing lipstick despite of face masks, frequency of make-up purchases, willingness to treating oneself with cosmetics and level of make-up routine adjustments to the “new normal” as independent variables. Frequency of make-up usage and money spent on cosmetics were considered as dependent variables.

The statistical analysis was performed using Student's t-test and regression analysis through SPSS software (version 27.0.1.0). Test prospect at $p < 0.05$ was considered significant.

4. Results

Before the pandemic, 36.9% of participants declared wearing make-up daily, 21.3% used to wear it 2-3 times a week, 19.1% used to cosmetics 4-6 times a week in their make-up routine and 10.2% claimed to make-up once a week, whereas 12.4% of respondents did not use any type of cosmetics or other appearing-enhancing products (“never”).

Concerning how often participants were used to buying new cosmetics, the vast majority of respondents declared to purchase new make-up products less than once every month – covering 62.6% of responses, 23% of study participants claimed to buy new products once a month. Participants that purchased cosmetics 2-3 times a month were 7.7%, 4 times a month (once a week) were 3.2% and more than 4 times a month 3.6%.

Before the pandemic, 40.5% of females that took the survey used to spend less than 10€ on average on make-up products, 34.2% spent between 10€ and 30€ and 14.9% used to spend 30€-50€. Then, respondents who declared to spend between 50€ and 70€ on cosmetics were 7.7%, 70€-100€ – 2.3%, while only 0.5% of respondents claimed to spend more than 100€ per month averagely.

20.60% of study respondents disclosed that before the pandemic, among other products, they used to buy mascara and to include it in their everyday cosmetic activities. Participants also claimed to use in their routine skincare products – covering 14.70%, followed by lipstick – 12.75%, foundation – 11.80%, and nail polish and blush – respectively 7.30% and 7.10%. Eye shadows and highlight were used by 6.10% of participants, whereas 6.45% of females claimed to purchase eyebrow pencils and 4.10% adopted contour powder or cream, too. Finally, 3% of participants declared to employ in their cosmetic routine other make-up products – such as eyeliner, eye pencils and concealer.

When asked where they used to purchase cosmetic items, the majority of respondents to the study claimed to prefer physical stores and retailers to select their make-up – covering 84.40%,

while 6.88% declared to shop their goods online or on the company's website. Then, 7.80% claimed to be gifted with those products instead of purchasing them and 0.92% of females did not use the distribution channels mentioned above – instead, they used to go to pharmacies.

After the breakout of Covid-19, most responders claimed to wear make-up 2-3 times a week – covering 28.4%, followed by 4-6 times a week – 25.7%, daily – 18.3% and once a week – 15.5%. Finally, 11.9% of females stated not to wear any make-up (“never”). The change was statistically significant, $p < 0.001$.

Regarding how often females purchase new appearance-enhancing products, 72.4% of them purchase new make-up products less than once in a month, followed by 15.7% who buy it once a month and 8.3% who acquire new cosmetics 2-3 times a month. Only 0.5% of participants declared to purchase new products 4 times a month (“once a week”) and finally the remaining 3.2% acquire new make-up more than 4 times a month.

After the pandemic, most of the responders (48.8%) stated to spend less than 10€ per month on cosmetics averagely, while another big proportion (29%) declared to spend between 10€ and 30€ per month. 13.4% of participants are accustomed to spending between 30€ and 50€ per month on make-up products on average, followed by 6.5% who spend around 50€-70€ and 1.8% who spend between 70€ and 100€. Lastly, only 0.5% of females that took part in the study claimed to spend on average more than 100€ on cosmetics per month. The change was statistically significant, as $p\text{-value} < 0.001$.

When asked in which occasions they now wear their make-up on, most participants declared to wear it only on occasions (40.13%) – such as parties, dinners with friends or dates, followed by 30.89% who claimed to wear it at work or school/university when in physical presence. 12.74% of the respondents claimed to wear make-up for business meetings (even if they are held on digital platforms, like Zoom and Teams), while 9.55% can't simply go out without any make-up on and 6.69% usually don't wear any.

Among other products, 22.15% of the respondents declared to now purchase mascara, followed by skincare products – covering 17.63% of participants, foundation – 11.02%, eyebrow pencils and eyeshadows – which respectively cover 8.45% and 7.71% of participants to the study. Nail polish is habitually purchased by 7.60% of responders, whereas lipstick and blush are acquired respectively by 7.10% and 6.36% of females that took the survey. Highlight purchases remained unchanged and it is shopped by 6.10% of respondents. Lastly, 3.55% of participants now purchase on a regular basis contour powder or cream, while 2.33% declared to purchase different product from the ones mentioned before – like eyeliner (3.7%), eye pencil (1.8%), concealer (0.4%) and others.

Concerning where they buy their make-up items, 69.30% of the participants still prefer to acquire them in physical stores and retailers, whereas 23.26% claimed to buy their cosmetics online or on the company's website. A small portion of responders, then, declared that they do not usually purchase cosmetics, rather someone else gift them with it – covering 6.98%, and only 0.47% of participants purchase their goods somewhere else (like in pharmacies and herbalist shops). The change in location where to buy cosmetic products was statistically significant, $p < 0.001$.

When asked if they were still wearing lipstick despite mandatory face coverings, 33.5% of respondents stated that they do not wear lipstick anymore, but they were not used to wear it even before the pandemic, while 20% of females surveyed do not wear lipstick that much anymore but used to wear it and 9.8% declared that they do not wear it because they rather prefer their lips at natural. On the other hand, 7.9% of participants firmly confirmed to put lipstick on, whereas the remaining 28.8% claimed that they still wear lipstick, but only on special occasions.

In terms of how much participants felt to have changed their make-up routine and adjusted it to the “new normal”, 27.2% of females reported to have changed it a little, followed by 26.8%

of participants who stated not to have experienced any changes (“not at all”) and 23.5% who adjusted it to a moderate amount. The proportion of respondents who felt to have changed their habitual activities a lot covers 15.5% of the sample, and only 7% of responders claimed to have altered them to a great deal.

Regarding the extent to which participants felt to relate to the following statement “If Covid-19 had not happened, I would have still changed my make-up routine”, 41.3% of the surveyed somewhat disagreed with it, 20.2% neither agreed nor disagreed with it and 15.5% strongly disagreed with it. Another 20.2% of respondents somewhat agreed with the statement and only 2.8% strongly agreed with it.

When presented with the statement “*These are critical times and I think I deserve to treat myself by buying some make-up*”, 32.5% of females surveyed was neutral to the statement (neither agree nor disagree), 28.2% of respondents somewhat disagreed while 17.2% of them somewhat agreed with it. 13.9% of participants in the study strongly disagreed with the statement, whereas the remaining 8.1% strongly agreed with it.

Finally, we ran several regression models to test for predictors of make-up usage variables after Covid-19 breakout. Linear regression showed that frequency of make-up purchases ($b = 0.449$, $SE = 0.077$, $t = 5.82$, $p < 0.001$), willingness of treating oneself with cosmetics ($b = 0.2$, $SE = 0.53$, $t = 3.762$, $p < 0.001$) and frequency of make-up wearing ($b = 0.228$, $SE = 0.048$, $t = 4.701$, $p < 0.001$) had a positive impact on the money spent on make-up products ($F_{(6, 202)} = 24.019$, $p < 0.001$, $R^2 = 0.416$). Hence, females that wear make-up more often, buy it more frequently and are more willing to treat themselves with make-up during the crisis spend more money on cosmetics. Wearing lipstick in spite of face masks did not predict the amount of money spent to purchase new cosmetic goods.

On the other hand, the money spent on cosmetics ($b = 0.433$, $SE = 0.092$, $t = 4.701$, $p < 0.001$) and frequency of lipstick wearing despite mandatory face masks ($b = -0.170$, $SE = 0.059$,

$t = -2.898$, $p = 0.004$) predicted frequency of make-up usage ($F_{(6, 202)} = 10.787$, $p < 0.001$, $R^2 = 0.243$). Therefore, women that spend more money on make-up and are accustomed to wearing lipstick although face masks are mandatory wear cosmetics more frequently. Frequency of make-up purchases and willingness of treating oneself with make-up items had no positive impact on frequency of make-up usage. Lastly, age and level of make-up routine adjustment to the “new normal” did meaningfully predict none of the dependent variables denoting the use of make-up.

5. Discussion

The work is new, since no prior research has been done on the Lipstick Effect applied to the post-coronavirus era; thus, this paper is a valuable contribution to the previous literature. The study shows the changes in habits and consumer behaviours in women’s make-up activities impacted by the latest Covid-19 pandemic; moreover, it inquires about the possible application of the Lipstick Effect as an economic indicator right after the last pandemic outbreak, mirroring women’s willingness to “treat” themselves more frugally by buying new cosmetics.

5.1 Theoretical and Managerial Implications

The study may allow for the performance monitoring of the cosmetics market in order to develop projected growth/decline scenarios for the market mechanisms of specific beauty products, particularly in Italy. In addition, the application of the Lipstick Index as a proxy could help outline the development of the global economy.

Preliminary studies have clearly shown that women have increased the use of hand sanitizers, due to the associated risk of contamination (Mościcka et al., 2020), and the implementation of new personal hygiene solutions and skin care products for good maintenance of their skin (Shim et al., 2020; Linton et al., 2020; Ścieszko et al., 2021). The results of our study, however, showed that more than 50% of the women surveyed did not perceive any change in their routine

(26.8% of our sample), or at most very little (27.2%). At the same time, the same sample interviewed stated that they disagree (41.3% – covering the majority of responders) with the statement *“If Covid-19 had not happened, I would have still changed my make-up routine”*, thus attributing the changes occurred in their make-up activities to Covid-19 – forming a contradiction. Therefore, we can conclude that the new coronavirus has definitely had an impact on the make-up habits of many women.

During the pandemic, the number of females providing themselves with an improved and more complex skincare routine also increased (Ścieszko et al., 2021). Findings in our study show that there has been an increase of females that employ skincare products in their daily routine – 14.68% of participants stated that they used to buy skincare goods prior to the pandemic in comparison with 17.63% who now purchase them. In addition, Ścieszko and collaborators (2021) affirmed that their study demonstrated a skin improvement in most of the responders and that, consequently, women spent more money on cosmetics. However, conversely to what mentioned above, our results showed that the majority of respondents declared to spend less money on new cosmetic products – almost half of our sample (48.8%), in fact, reported to spend less than 10€ per month on average.

The health crisis entailed the extensive use of face coverings. Wearing masks for prolonged periods of time has affected our awareness of beauty (Yokoyama et al., 2021). The effect of masks on beauty is complex, and wearing a mask may be a constraint or a positive beauty attribute (Yokoyama et al., 2021), especially when aiming at concealing imperfections (Mafra et al., 2020) – a sort of shield that also make-up can provide for.

Because of the introduction of mandatory face masks, females have also modified their make-up habits (Yokoyama et al., 2021). Consumers reported that make-up products can transfer on the mask; they also noticed a greater and faster degradation of cosmetics that affects not only the area beneath the face mask, but also the eye area, as the humidified air rises from it

(Yokoyama et al., 2021). As a result, consumers' needs started to change: in fact, users would rather apply less make-up and use products that are more durable or do not smear masks (Kim et al., 2021). Yokoyama and colleagues (2021) also discovered that females are now expecting non-transferrable cosmetics, specifically adapted to face covers.

During the latest period of recession lipsticks have turned into slow selling products, while on the other hand eye make-up, such as mascaras, are becoming very popular (Nufer, 2021). Mościcka and collaborators (2020) reported a significant decline in employment of face color cosmetics, such as foundation and lipstick. Results to our questionnaire also reflected this on-going trend: in fact, before the pandemic lipstick was purchased by 12.75% of the surveyed, whereas after the coronavirus outbreak only 7.10% of the participants still buy it and adopt it in their make-up routine. Eye cosmetics are indeed increasing in usage: items like mascara, eye shadows and eyebrow pencils – which before Covid-19 were acquired respectively by 20.60%, 6.10% and 6.45% of females surveyed –, are now purchased by 22.15%, 7.71% and 8.45% of participants to our study. The focus has shifted from the lip area, once accentuated by lipsticks and lip-glosses, to the eye area – as it is now the most noticeable part of the face (Yokoyama et al., 2021). Changes in cosmetic consumer habits and shift towards eye make-up can be seen in detail in Figure 2.

The amount of beauty products purchased in internet stores has also increased (Ścieszko et al., 2021). Correspondingly, before the pandemic, most of the respondents (84.40%) to our questionnaire declared to prefer acquiring their cosmetics at physical stores or at retailers, while only 6.88% of them did their make-up shopping online or directly on the cosmetics company's website. After Covid-19 breakout, instead, 23.26% of females surveyed claimed to acquire new beauty products online – aligned with the on-going trend of digitalization and e-commerce shopping preference (Gerstell et al., 2020).

In previous studies, the custom of wearing beauty products was frequently positively correlated with age (Mafra et al., 2020; Macdonald & Dildar, 2020). Specifically, older females tended to wear more make-up to camouflage age-related imperfections/marks, appear younger, more attractive, or even more capable and socially preferable (Mafra et al., 2020). However, our findings showed that age does not influence the frequency of make-up usage; additionally, the introduction of face masks entailed a significant decrease in cosmetic application across all ages.

Frequency of make-up usage has been dramatically decreasing. Most participants (28.4%) declared to wear make-up between 2 and 3 times a week in comparison with pre-pandemic data, when most of the females surveyed used to wear their make-up daily (36.9%). Make-up application rate is also decreasing partly because the occasions in which women wear it are rarifying: 40.13% of participants to the study asserted they now wear make-up only on special occasions – such as parties, dinner with friends, or dates, whereas another 30.89% of respondents claimed to wear it at work or school/university, when in physical presence.

Hill et al. (2012) sustained that, during recessionary periods, consumers' desires for most commodities tends to decrease, but not women's desire for beauty products and lipstick, in particular. However, when asked if they would still put their lipstick on, in spite of mandatory face masks, 28.8% of our sample claimed to wear it only on special occasions, whereas only 7.9% of participants in our study now wear lipsticks even with their masks on.

Concerning our investigation on the Lipstick Effect, traditional economic theory expects that during recessionary periods consumer spending on non-essential goods would decrease; but historically this has not occurred in the case of cosmetics (Hill et al., 2012; Netchaeva & Rees, 2016; Macdonald & Dildar, 2020). However, we can notice that beauty product sales decreased in the post-coronavirus crisis, thus following the conventional income effect. Among the women we surveyed, the rate of those who used to buy new cosmetic products less than once

a month (which still incorporates most of the responses obtained from the target sample) increased from 62.6% before February 2020 to 72.4% post-pandemic.

Unmarried women are also expected to purchase more cosmetics in order to attract a mate (Hill et al., 2012). However, both Netchaeva & Rees (2016) and Macdonald & Dildar (2020) reported that women are motivated to purchase make-up products, regardless of their marital status. Particularly, during the Great Recession, there was no major behavioural shift between unmarried and married women – both categories of females raised their spending on beauty products (Macdonald & Dildar, 2020). That is why we decided to exclude questions related to the relationship status (i.e. married or single) of the women surveyed.

Turning to the psychological assumption formulated by Macdonald & Dildar (2020) – according to which in reaction to the economic turmoil, females have opted to "treat" themselves in a more frugal manner by replacing more expensive items with cosmetics –, we decided to embrace this assumption hoping that it could explain the occurrence of the Lipstick Effect right after Covid-19 outbreak. However, our results point to something different. When we asked our participants if they felt related to the statement "*These are critical times and I think I deserve to treat myself by buying some make-up*", 32.5% of respondents declared to be neutral – thus neither agreeing nor disagreeing with it – and 28.2% of them somewhat disagreed with it, hence rejecting our assumption (treating oneself better during recessions).

In conclusion, while previous recessionary periods were accompanied by a statistically meaningful increment in average spending on make-up, as predicted by the Lipstick Effect hypothesis (Hill et al., 2012; Macdonald & Dildar, 2020), such substantial growth in beauty items has not been recorded in the post-pandemic downturn.

Hence, we can conclude that there's no preliminary evidence supporting the Lipstick Effect in the post Covid-19 era. Instead, we can assume that the Lipstick Effect has been substituted by the new Mascara Effect (Nufer, 2021). Lastly, the Lipstick Index does not represent a useful

proxy to outline the development of the global marketplace during the recession brought by the new coronavirus.

5.2 Limitations and suggestions for future research

In this study we were interested in the impacts of the last pandemic on women's cosmetic behaviours, since men are not used to wearing any make-up. Specifically, we could argue that the analysis is limiting in the sense that it focused on the habits of Italian women, given that most of the women (83.6%) who participated in the study were Italian. Hence, this analysis could specifically address Italian consumers' attitudes and the findings hereby displayed would concern solely the Italian case, since those who completed the questionnaire in English – accounting for only 16.4% of the whole sample – constitute a portion too small to be statistically significant.

In our scenario, most of the respondents are between the ages of 18 and 24 (59.5%). It is highly possible, then, that they are students or females who have just started working. For this reason, they may lack the same economic resources as women belonging to other age groups. As they are lacking extensive economic resources or are not yet financially independent, they may be unable to overspend, especially in times of crisis – resulting in an overall reduced purchase frequency.

Face covers implementation has definitely been a game-changer for females' cosmetic behaviours. Because make-up is often used by women as a “mask” to camouflage females' physical imperfections, when forced to introduce and wear face coverings, women realized that they do not need make-up as much as they used to. And this could explain the reason why frequency of make-up usage is so dramatically decreasing, combined with the fact that we now meet with family and friends more often through cameras rather than in person. It could be very interesting for future research to deepen this particular aspect of how masks have impacted

on women's psychology and study how masks are stepping in to replace one of the main roles of cosmetics – concealing women's physical and psychological insecurities.

Made-up females are generally perceived as more attractive (Nash et al., 2006; Batres et al., 2018; Mafra et al., 2020) and more capable (Etkoff et al., 2011; Nash et al., 2006), and sometimes they are appraised more favorably and warmly (Richetin, Huguet & Croizet, 2007). However, we can observe that when women need to socialise, they always apply make-up, even though they wear a face mask. It would be worth investigating in greater detail the potential benefits of wearing cosmetics, in addition to face covers, to further boost confidence and thus cope better with societal fear and other macro-stressors – i.e. going out in public or being in the spotlight (Baceviciene & Jankauskiene, 2021).

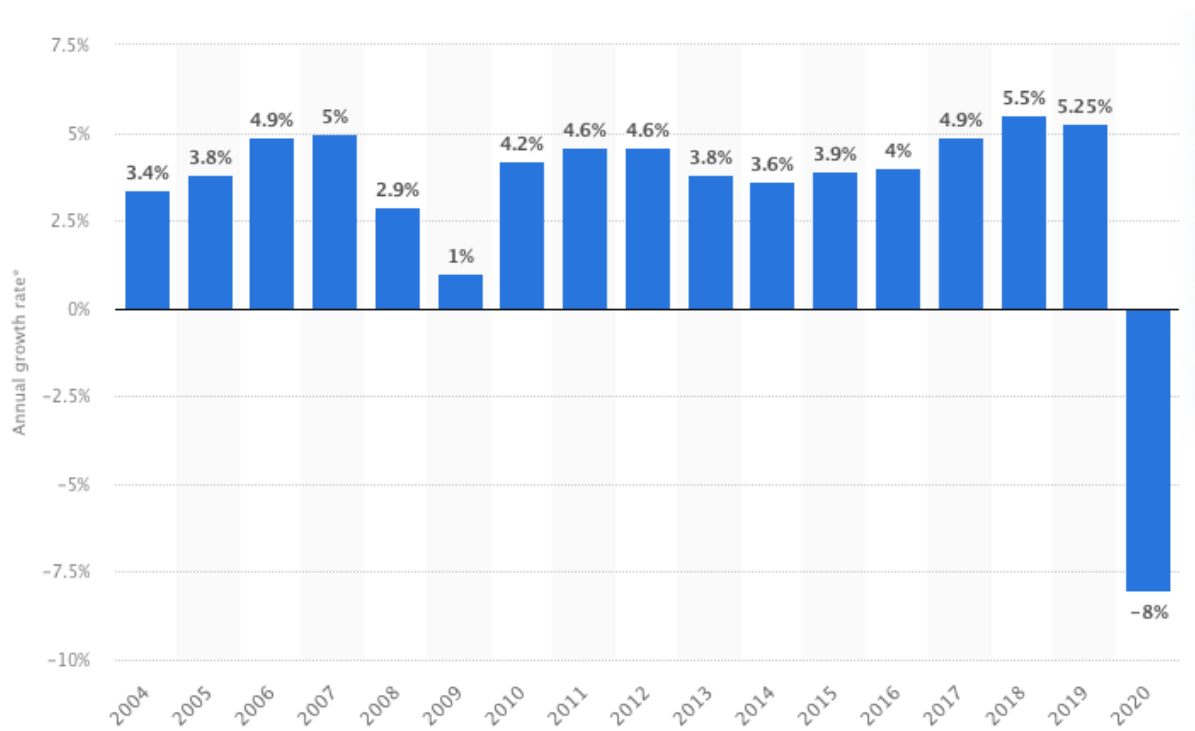
Finally, as according to our results women do not feel the need to treat themselves in a more frugal way, we can assume that when presented openly with the better-treatment hypothesis, women's reaction is primarily denial. Consequently, we can speculate that the substitutional hypothesis takes place subconsciously, thus becoming an attitude that women involuntarily adopt. Future research and studies could be developed implementing this particular aspect of females' psychology.

6. Conclusions

The Covid-19 pandemic has definitely seen massive changes in make-up and cosmetic habits, but not towards the direction we would have expected. The implementation of face coverings represented a game-changer, discouraging the use of make-up and annulling the Lipstick Effect in the post pandemic time.

Appendix

Figure 1: Annual Growth of the global cosmetic market from 2004 to 2020



Source: <https://www.statista.com/statistics/297070/growth-rate-of-the-global-cosmetics-market/>

Figure 2: Consumers' spending on single make-up products before and after the pandemic

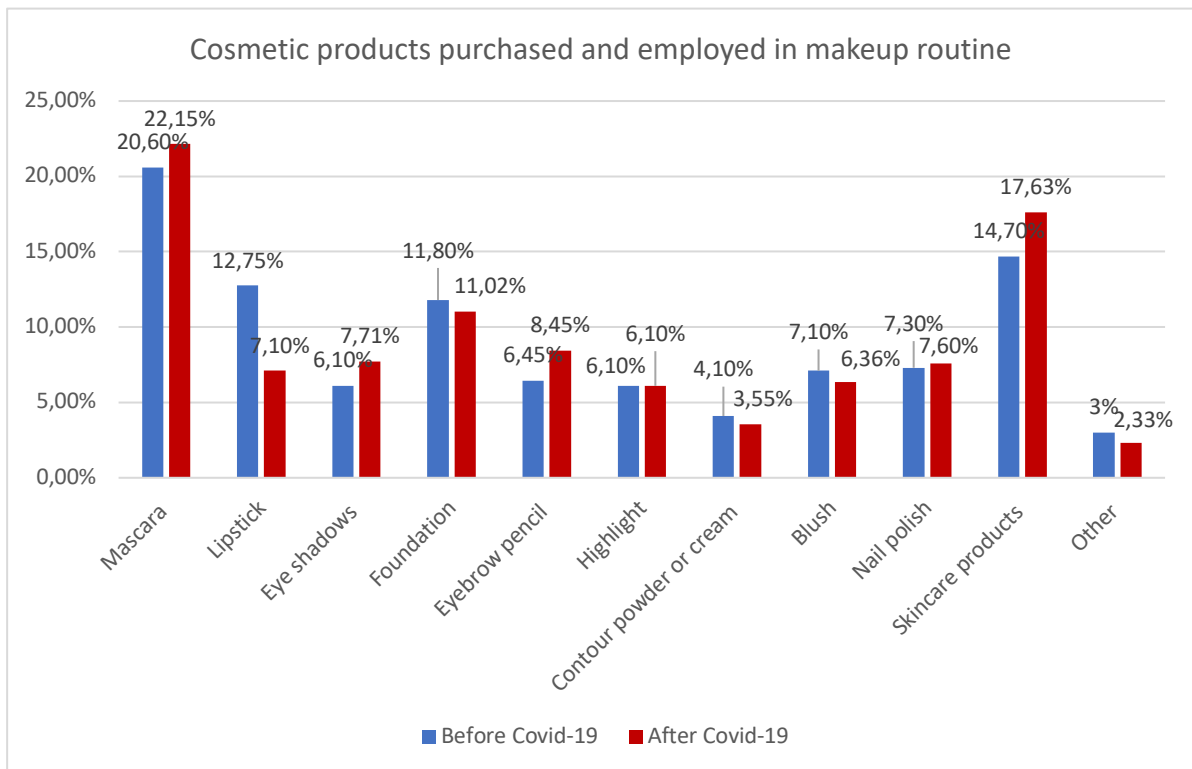


Table 1: Linear Regression Analysis

Source	Dependent variable	Sum of Squares	df	Mean Square	F	p	Beta	Sign.
How often do you wear make-up now? (After covid-19 happened)	Money spent on make-up	94.017	6	15.669	24.019	< 0.001	0.276	< 0.001
How much have you adjusted your make-up routine to the "new normal"?	Money spent on make-up	94.017	6	15.669	24.019	< 0.001	0.078	0.158
	Frequency of make-up usage	80.112	6	13.352	10.787	< 0.001	-0.038	0.550
What is your age?	Money spent on make-up	94.017	6	15.669	24.019	< 0.001	0.101	0.065
	Frequency of make-up usage	80.112	6	13.352	10.787	< 0.001	0.014	0.823
These are critical times and I think I deserve to treat myself by buying some make-up. How much do you relate with this sentence?	Money spent on make-up	94.017	6	15.669	24.019	< 0.001	0.218	< 0.001
	Frequency of make-up usage	80.112	6	13.352	10.787	< 0.001	0.047	0.489
How often do you buy make-up products?	Money spent on make-up	94.017	6	15.669	24.019	< 0.001	0.337	< 0.001
	Frequency of make-up usage	80.112	6	13.352	10.787	< 0.001	0.060	0.402
Do you still wear lipstick even though we have to wear masks?	Money spent on make-up	94.017	6	15.669	24.019	< 0.001	-0.031	0.597
	Frequency of make-up usage	80.112	6	13.352	10.787	< 0.001	-0.187	0.004
After Covid, how much do you spend on make-up products (average per month)?	Frequency of make-up usage	80.112	6	13.352	10.787	< 0.001	0.358	< 0.001

Table 1: Survey Questions

Number	Questions	Possible Answers
Q1	What is your age?	<ul style="list-style-type: none"> • Under 18 • 18-24 • 25-34 • 35-50 • 51-64 • 65 or older
Q2	How often did you use to wear make-up before the pandemic?	<ul style="list-style-type: none"> • Never • Once a week

		<ul style="list-style-type: none"> • 2-3 times a week • 4-6 times a week • Daily
Q3	How often did you use to buy make-up products before Covid-19?	<ul style="list-style-type: none"> • Once a week • Less than once a month • 2-3 times a month • More than 4 times a month
Q4	Before the pandemic, how much did you spend on make-up products (average per month)?	<ul style="list-style-type: none"> • Less than 10€ • 10€ - 30€ • 30€ - 50€ • 50€ - 70€ • 70€ - 100€ • More than 100€
Q5	What products did you used to buy before Covid happened? (Multiple answers)	<ul style="list-style-type: none"> • Lipstick • Eye shadow • Foundation • Eyebrow pencil • Highlight • Contour powder or cream • Blush • Nail polish • Skincare products • Other
Q6	If you selected "Other", please specify here	
Q7	Where did you used to buy make-up before the pandemic?	<ul style="list-style-type: none"> • Physical stores/retailers • Online / company's website • I did not buy it, someone gave it to me • Other
Q8	If you selected "Other", please specify here	
Q9	How often do you wear make-up now (after covid-19 happened)?	<ul style="list-style-type: none"> • Never • Once a week • 2-3 times a week • 4-6 times a week • Daily
Q10	In which occasions do you wear make-up now? (Multiple answers allowed)	<ul style="list-style-type: none"> • I simply can't go out without my make-up on • I wear make-up only on occasions (i.e., dinner with friends, dates, parties) • For business meetings (even if they are on Zoom) • At work/at school (physical presence in the office/class) • Usually, I don't wear any make-up
Q11	How often do you buy make-up products?	<ul style="list-style-type: none"> • Once a week • Less than once a month • 2-3 times a month • More than 4 times a month

Q12	After Covid, how much do you spend on make-up products (average per month)?	<ul style="list-style-type: none"> • Less than 10€ • 10€ - 30€ • 30€ - 50€ • 50€ - 70€ • 70€ - 100€ • More than 100€
Q13	Where do you buy make-up now?	<ul style="list-style-type: none"> • Physical stores/retailers • Online / company's website • I did not buy it, someone gave it to me • Other
Q14	If you selected "Other", please specify here	
Q15	What products do you buy now? (Multiple answers allowed)	<ul style="list-style-type: none"> • Lipstick • Eye shadow • Foundation • Eyebrow pencil • Highlight • Contour powder or cream • Blush • Nail polish • Skincare products • Other
Q16	If you selected "Other", please specify here	
Q17	Do you still wear lipstick even though we have to wear masks?	<ul style="list-style-type: none"> • Of course! • Yes, but on occasions • No, I don't wear it that much anymore • No, I prefer my lips at natural • No, I was not used to wear it even before masks
Q18	How much have you adjusted your make-up routine to "the new normal"?	<ul style="list-style-type: none"> • None at all • A little • A moderate amount • A lot • A great deal
Q19	If Covid-19 had not happened, I would have still changed my make-up routine. How much do you relate with this sentence?	<ul style="list-style-type: none"> • Strongly disagree • Somewhat disagree • Neither agree nor disagree • Somewhat agree • Strongly agree
Q20	These are critical times and I think I deserve to treat myself by buying some make-up. How much do you relate with this sentence?	<ul style="list-style-type: none"> • Strongly disagree • Somewhat disagree • Neither agree nor disagree • Somewhat agree • Strongly agree

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