ORIGINAL PAPER

Understanding cosmetic consumers: exploring consumption patterns and predictors through a cross-sectional survey

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Abstract

Background Previous reports have provided (some) demographics of the cosmetic consumer; however, findings are not unequivocal. This relates to differences in the studies' categorizations, samples, and contextual factors.

Methods Employing a cross-sectional survey design, which was disseminated by 11 cosmetic clinics and consumer platforms in the Netherlands, this study provides a clear overview of a total of 734 Dutch cosmetic consumers' (a) demographic characteristics; (b) motivations for undergoing a range of specific cosmetic procedures; (c) cosmetic procedure frequency, i.e., how frequently they undergo particular procedures; and (d) frequency of, and motivations for, switching clinics. Relations between cosmetic consumers' demographics, motivations for cosmetic procedures, and different procedures chosen were also established.

Results There is no unequivocal characterization of 'the' cosmetic consumer in the Netherlands, although they mostly identified as heterosexual women from Dutch descent with relatively high educational attainment levels and a high income. Some regional differences in terms of cosmetic procedure engagement were observed. Motivations for cosmetic procedure engagement were multifaceted, and responses varied between open- and closed-ended questions. Few relations between predictors and (a selection of) cosmetic procedures proved significant. (Higher) age and high educational attainment positively correlated with undergoing botulinum toxin injections and eyelid corrections. Gender and daily use of highly visual social media positively correlated with undergoing dermal filler injections. Lastly, lower-educated consumers were significantly more likely to have breast enlargements than higher-educated consumers.

Conclusions This study provides a comprehensive overview of the demographic characteristics and motivations of a varied sample of cosmetic consumers, and the types and quantities of cosmetic procedures they undergo. In terms of demographics, we can conclude that there is no unequivocal characterization of 'the' cosmetic consumer in the Netherlands, although she frequently identifies as a heterosexual female of Dutch descent.

Level of Evidence Not gradable

Introduction

Globally, there has been a sharp rise in the number of cosmetic procedures, from approximately 14.1 million in 2011 to 33.8 million in 2022 [1]. Particularly non-invasive procedures like injectables have become increasingly popular. Several questions arise as to what characterizes and motivates these 'cosmetic consumers'. Previous studies and professional bodies have provided (some) demographics of the cosmetic consumer; however, these are not unequivocal. Whereas professional organizations and academic

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publications all agree that cosmetic consumers are predominantly female [1–6], other demographic data are less consistent, which relates to both variations in classification (e.g., categorizations of ethnicity and/or age) and sample differences. For example, studies include both people who intend to undergo and/or who have undergone cosmetic procedures [5, 7, 8]. Moreover, the types of procedures also differ and can entail invasive and/or non-invasive procedures. Additionally, studies across different geographic regions demonstrate different cultural norms regarding cosmetic procedures, which may be reflected in cosmetic consumer demographics [6, 8–11].

To address the above issues, this paper provides a further description of cosmetic consumers in terms of (a) their demographic characteristics; (b) their motivations for undergoing a range of specific cosmetic procedures; (c) cosmetic procedure frequency, i.e., how frequently they undergo particular procedures; and (d) the frequency of and motivations for switching clinics. Additionally, we consider the relations between cosmetic consumers' demographics, motivations for cosmetic procedures, and the different procedures chosen.

Characterizing cosmetic consumers

Before outlining the current study, existing insights into the demographics and motivations of cosmetic consumers are provided. As demonstrated by annual reports by the International Society for Aesthetic Plastic Surgeons [1], most cosmetic consumers are aged between 19 and 34 (41.3%) and 35–50 (39.1%), with a minority between the ages of 51–64 (13.3%), under-18 (2.9%), or over-65 (2.6%). A report by the American Society of Aesthetic Plastic Surgeons (2021) reports a slightly older population with the majority of consumers being between 40 and 54 (45%) or 55–69 (30%), compared to a minority of 30-39-year-olds (16%), under-29 (6%), or over-70s (3%) [12]. Interestingly, Li and colleagues (2016) found a much younger cosmetic consumer in China, with 76.9% being between 19 and 34 [5].

When considering cosmetic consumers' ethnic background, ASPS (2021) illustrates that most consumers in the US identify as *Caucasian* (66%), followed by *Hispanic* (11%), *African-American* (10%), and *Asian-American* (7%). Gillen (2017) also found that US college students with a *Latin American/Hispanic* background were more interested in cosmetic procedures than people identifying as *Asian American*, *Asian*, or *Pacific Islander* [12]. At a British university, Swami and colleagues (2012) also found that *Caucasian* students demonstrated a higher cosmetic surgery acceptance when compared to students with a *South Asian* or *African Caribbean* background [8]. However, other predictors such as body appreciation and self-esteem were

stronger. Similarly, Pearlman and colleagues (2022) argue that there are no consistent correlations between ethnic background and cosmetic procedures, which may also be the result of a general lack of diversity in previous studies [6].

Other demographic data which has previously been used to characterize cosmetic consumers relate to their relationship status, educational attainment, and income. The few studies which have taken into account relationship status resulted in contradictory findings; whereas Von Soest and colleagues (2006) found that married women in Norway were less motivated to undergo cosmetic procedures [11], Sobanko and colleagues (2015) found that female recipients of injectables in the US were more likely to be married [13]. This latter study also showed that cosmetic consumers were educated to college-level or held an advanced degree, and earned an above-average income. Similarly, Li and colleagues (2016) showed that most cosmetic consumers in China were highly-educated (i.e., at least undergraduate level), particularly for eye surgery and Botox injections [5].

Alongside information related to the demographic data characterizing cosmetic consumers, research has also identified several behavioral and psychosocial factors which may be better predictors of cosmetic procedure engagement [14]. Influential psychological factors relate to body (dis)satisfaction [3, 4, 6, 15, 16]; importance of appearance to self-worth [4, 6]; and psychiatric pathologies like body dysmorphic disorder or eating disorders [6, 15]. Relevant (psycho)social factors relate to vicarious experience and social acceptance of cosmetic procedures within one's own environment [6, 17, 18]; a concern with social standing and attractiveness [6]; and employment sector, with people in service industries being more likely to undergo cosmetic procedures [5]. An additional factor which has attracted a lot of discussion relates to the role of (social) media in cosmetic procedure acceptance and intention, with several studies establishing an (in)direct relationship [6, 16, 18–20].

Considering that some influential work on the characterization of cosmetic consumers was conducted nearly two decades ago, focused only on particular cosmetic procedures, and, importantly, some contradictions and/or gaps exist within this characterization, this study provides a comprehensive overview of the demographics and motivations of cosmetic consumers and the types and frequencies of cosmetic procedures they undergo.

Method

Procedure

We invited Dutch cosmetic consumers to fill out our survey by asking cosmetic clinic chains in the Netherlands to disseminate the survey amongst their clients. The data were collected between October 5th, 2023, and February 13th, 2024. Aiming for maximal variation in the respondents, we started with ten clinics which were purposively sampled based on their target demographic, the types of procedures they offered, and their location(s). Depending on the clinics' preferences, they put up a recruitment poster with QR code in their waiting rooms and/or emailed our invitation to their mailing list. Once the survey was live, we approached several more clinics, consumer platforms, and cosmetic organizations to aid the recruitment process. In the end, respondents from 36 different clinics were included.

Sample

In total, 998 consumers filled out our survey. We excluded respondents who did not give their consent ($n = 17$) and finished less than 95% of the survey ($n = 247$), which resulted in a final sample of 734 cosmetic consumers.

Measures

First, the respondents were asked to provide the **clinic they visited most recently** (*1 = Faceland; 2 = Velthuis Kliniek; 3 = Kliniek Veldhoven; 4 = Van Rosmalen Kliniek; 5 = Medisch Laser Centrum; 6 = Klaver Klinieken; 7 = Ivy Clinics; 8 = The Body Clinic; 9 = Blooming Plastische Chirugie; 10 = Cleo Clinics; 11 = other, namely*). This list comprised the ten (inter)national clinics that participated in this project; as we also recruited via consumer platforms, an 'other' option was added. Following this, we established the current cosmetic procedure(s) the respondents were undergoing using a 16-item list containing the most common (non-)invasive procedures and an 'other' option ("what cosmetic procedure do you intend to get today?"; *1 = breast augmentation; 2 = breast reduction; 3 = Botox; 4 = abdominoplasty; 5 = thread lift; 6 = facelift; 7 = dermal filler; 8 = laser treatment; 9 = lipofilling; 10 = liposuction; 11 = microneedling; 12 = rhinoplasty; 13 = eyelid correction; 14 = otoplasty; 15 = chemical peel; 16 = labiaplasty; 17 = other, namely*) (ISAPS, 2021, 2022; ASPS, 2022).

Following this, an open question explored the respondents' motivation for current cosmetic procedure(s) ("why did you choose to undergo this procedure?"). This open question was later recoded into 13 categories (*1 = appearance dissatisfaction; 2 = insecurity appearance; 3 = look good for job; 4 = look good for others; 5 = medical reasons; 6 = vicarious experience; 7 = social media comparison others; 8 = social media filter comparison; 9 = no clear reason; 10 = affordability; 11 = positive previous experience; 12 = non-invasive, safe nature procedure; 13 = other*).

To get an overview of all procedures, we then asked respondents to indicate which cosmetic procedures they had ever undergone ("what cosmetic procedures have you have undergone?"). The same 17-item list used for the current cosmetic procedure(s) measure was used here. After indicating the procedures they had undergone, respondents were asked how frequently they had undergone individual procedures ("how often have you had [procedure x]?" so that we could establish the frequency of each procedure. Respondents were asked to provide a numerical response.

To explore whether respondents had attended different clinics, we inquired whether they had switched clinics ("Have you visited multiple clinics for [procedure x])". If respondents confirmed switching clinics at least once, we asked the number of clinics they had ever visited for cosmetic procedures ("how many clinics have you visited"; 6-item question ranging from *1* to *6 or more*). Moreover, in an open question, respondents were asked to provide their motivation to switch ("why did you visit several clinics?"). The responses to this open question were later recoded into nine categories (*1 = financial reasons; 2 = different expertise; 3 = practitioner moved to different clinic; 4 = convenience, often location; 5 = dissatisfaction; 6 = recommendation or reviews; 7 = previously unfamiliar with other clinics; 8 = comparing clinics, search for 'right one'; 9 = other*).

To examine the relationship between social media usage and cosmetic procedure engagement, we included a frequency of social media use measure where we asked what social media platforms respondents used on a daily basis ("what social media do you use on a daily basis?"; *1 = Instagram; 2 = TikTok; 3 = YouTube; 4 = Facebook; 5 = X/Twitter; 6 = LinkedIn; 7 = Snapchat; 8 = BeReal; 9 = None of the above*). Responses were recoded into frequency of using highly visual social media (HVSM: sum score of daily use of Snapchat, TikTok, Instagram and BeReal, ranging from 0 to 4) [19, 21].

In terms of demographics, we asked respondents' age ("how old are you?"; in years); gender identity ("I identify as …"; *1 = male; 2 = female; 3 = transgender; 4 = intersex; 5 = non-binary; 6 = genderqueer; 7 = prefer not to say; 8 = other, namely*), which was recoded into *male, female and other*; and sexual orientation ("I identify as …"; *1 = heterosexual; 2 = lesbian; 3 = gay; 4 = bisexual; 5 = prefer not to say; 6 = other, namely*). Moreover, we collected information related to respondents' relationship status ("what is your relationship status?"; *1 = married; 2 = living together;*

3 = *in stable relationship; 4 = single; 5 = other*); employment status ("what is your employment status?"; *1 = student; 2 = work fulltime, i.e., > 32 hours a week; 3 = work part-time, i.e. <32 hours a week; 4 = unemployed, looking for job; 5 = unemployed, not looking for job; 6 = unable to work; 7 = retired*); and income ("what is your monthly net income?"; for single respondents *1= <€1500; 2 = €1500-€2250; 3 = >€2250;* for respondents in relationship: *1= <€2500; 2 = €2500- €4000; 3 = >€4000*) (Groen, Van Horssen & Veerman, 2022). Further, we included educational attainment ("what is the highest form of education you have completed?"; *8 country-specific items, ranging from 1 = none/did not finish any education to 8 = University*), which was recoded into three categories, namely *lower, medium, and higher educational attainment* [22]. We also included two measures for regionality, namely urbanity ("Do you live in a city/town or outside of this?"; *1 = live in city/town; 2 = live in village; 3 = live outside of a city/town or village*) and province ("What province do you live in?"; *a list of all 12 Dutch provinces were provided here*). Finally, we included a measure for ethnicity, which encompassed country of birth (self), country of birth (mother), country of birth (father) ("Where were you/your mother/your father born?"; *1 = Netherlands; 2 = Turkey; 3 = Morocco; 4 = Indonesia; 5 = Germany; 6 = Surinam; 7 = Poland; 8 = other, namely*). Responses were recoded into three categories, namely *Netherlands, European, Outside Europe but Original Migration Countries (OMCs), and Outside Europe, Rest of World (RoW)*. This classification was based on the categorizations adopted by Statistics Netherlands [23].

Ethics

This study was reviewed and approval by the ethical review board of the Tilburg School of Social and Behavioral Sciences, Tilburg University, the Netherlands (reference TSB_RP1127). Informed consent was obtained from all individual participants included in the study.

Results

Describing the cosmetic consumer

The 734 consumers who completed our survey were on average 44.60 years old ($SD = 12.73$), with ages ranging from 18 to 77. Figure 1 shows the distributions of age, showing a large distribution of ages in cosmetic consumers. Interestingly, 9% of the consumers were 25 years or younger, 26% were between 26 and 40 years old, and 40% were 50 years or older.

Cosmetic consumers were predominantly female ($n = 709$, 96.6%; 2.7% male; 0,7% other or did not want to disclose), and their sexual orientation was mostly heterosexual (91%), with a small minority identifying as bisexual (4.1%), gay (1.6%), lesbian (0.4%), or other/did not want to disclose (3.2%). In terms of ethnicity, most respondents were born in the Netherlands (91.0%), 5.9% were born in Europe (EUR), 1.1% were born in original migration countries (OMCs) like Turkey, Suriname and Indonesia, and 1.4% was born in other regions. In terms of the ethnic background of the respondents' parents, 82.6% of the mothers were born in NL, 6.7% in EUR, 11.0% in OMCs, and 2.0% in other regions. Similarly, 81.5% of fathers were born

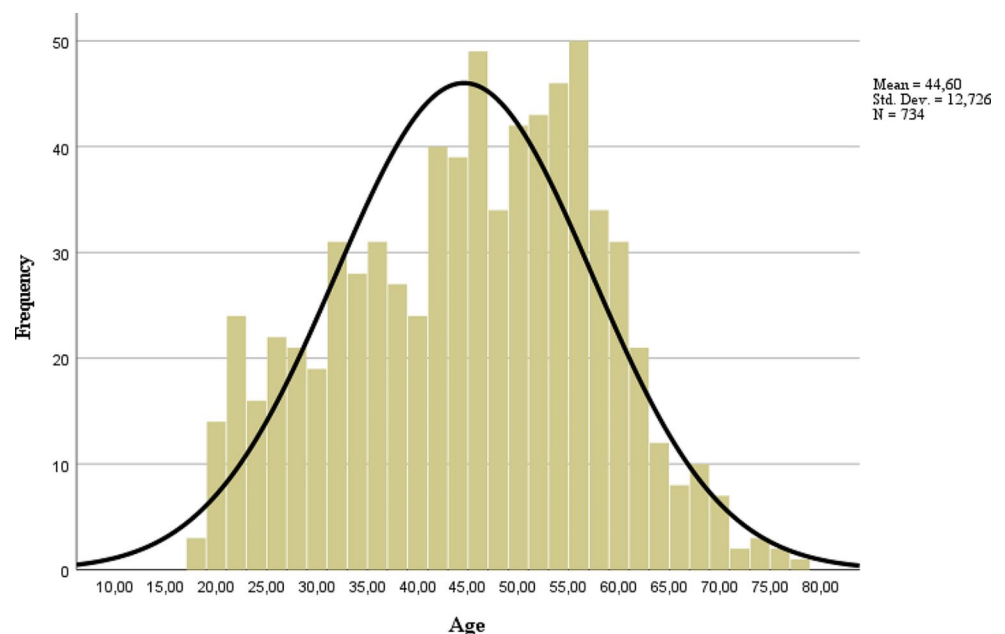**Fig. 1** Age distribution in sample of 734 cosmetic consumers

Table 1 Geographic distribution respondents

Ranking	Province	% sample	N	Relative to province population [per 100.000]	Adjusted ranking
1	Zuid-Holland	29.2%	214	5.6	1
2	Noord-Brabant	16.3%	129	4.6	*4*
3	Noord-Holland	15.4%	113	3.8	5
4	Gelderland	10.8%	79	3.7	6
5	Utrecht	9.5%	70	5.0	2
6	Limburg	7.1%	52	4.6	*4*
7	Flevoland	3.0%	22	4.9	3
8	Overijssel	2.9%	21	1.8	*9*
9	Friesland	2.2%	16	2.4	7
10	Drenthe	1.4%	10	2.0	8
	Groningen	1.4%	10	1.7	10
11	Zeeland	1.0%	7	1.8	*9*

Table 2 Use of social media by cosmetic consumers

Social media platform	Frequency	Percentage
Highly visual social media		
Instagram	550	74.9
TikTok	175	23.8
Snapchat	144	19.6
BeReal	19	2.6
Other social media		
YouTube	143	19.5
Facebook	463	63.1
X	35	4.8
LinkedIn	156	21.3
None	63	8.6

Note: $N = 734$

in NL, 8.2% in EUR, 7.2% in OMCs, and 1.8% in other regions.

A large group of consumers was single (33.7%), but the majority were either married (31.5%), lived together with a partner (19.6%), or were in a relationship (12.6%). Of the respondents, 41.1% worked full-time (> 32 h per week); 39.9% worked part-time (< 32 h per week); 6.8% were students; 1.9% were jobseekers; 5.4% were unable to work; and 4.5% were retired. The majority of cosmetic consumers had a high income. Of the single respondents, 43.0% had a monthly net income of over €2,250 net per month, 37.4% earned €1,500–€2,250, and 19.6% earned less than €1,500. Of the respondents with partner, 57% had a joint monthly net income of over €4,000, 36.1% earned €2,500–€4,000, and 6.9% earned less than €2,500. In terms of educational attainment, 14.3% of the sample had a 'lower' educational attainment, 46.3% had a 'medium' educational attainment, and 39.4% had a 'higher' educational attainment. When compared to the Dutch average educational attainment levels (25.8% 'low', 37.9% 'middle', and 35.5% 'high') [24], the cosmetic consumer generally has a higher educational attainment level.

In terms of the cosmetic consumers' regionality, two things can be noted. Firstly, they generally lived in either cities/towns (55.3%) or in villages (40.6%); only 4.1% indicated to live in more rural areas. In terms of the geographic distribution of respondents, Table 1 illustrates that respondents were more likely to live in either the Netherlands' center-west metropolitan conglomerate (i.e., Zuid-Holland, Utrecht, Flevoland, Noord-Holland), or in some of the southern more peripheral provinces (i.e., Noord-Brabant and Limburg).

As can be seen in Table 2, a large majority of cosmetic consumers used Instagram (74.9%) and/or Facebook (63.1%). Other popular platforms were TikTok (23.8%), LinkedIn (21.3%), Snapchat (19.6%) and YouTube (19.5%).

Procedure frequencies

Non-invasive injectable treatments, i.e., with botulinum toxin (BTX) or dermal fillers (fillers), were clearly the most popular procedures in the sample (cf. Table 3). Moreover, these procedures were often repeated: cosmetic consumers opting for BTX returned an average of 10.47 times, and fillers had a repeat-rate of 5.41. Clearly, invasive procedures were far less likely to be repeated than non-invasive procedures which need to be redone for results to be maintained. Nevertheless, some of the invasive procedures were also repeated, perhaps to correct or further enhance a previously undesired or unfavorable outcome. When considering respondents' full cosmetic procedure history, the most popular invasive procedures were eyelid corrections (21.8% of sample) and breast enlargements (14.0%).

Reasons for having cosmetic procedures

Table 4 shows the answers to both the open and closed questions asking for consumers' reasons to undergo procedure(s). In response to the open question ("why did you choose to undergo this procedure?"), a large majority of the answers (71.4%) reflect respondents' *dissatisfaction with their appearance* (e.g., "I am 55 and wasn't happy

Table 3 (Historic) frequency of cosmetic procedures undertaken by respondents

Procedure	Today / most recent		History		Frequency if history
	Frequency	Percentage	Frequency	Percentage	M (SD)
BTX injection	500	68.1	560	76.3	10.47 (12.86)
Filler injection	412	56.1	516	70.3	5.41 (6.92)
Eyelid correction	74	10.1	160	21.8	1.12 (0.36)
Breast enlargement	15	2.0	103	14.0	1.32 (0.64)
Peeling	3	0.4	89	12.1	5.84 (5.21)
Microneedling	3	0.4	78	10.6	4.85 (5.62)
Laser treatment	3	0.4	74	10.1	n.a.
Breast reduction	0	0	41	5.6	0.98 (0.16)
Liposuction	2	0.3	40	5.4	1.58 (0.90)
Abdominoplasty	2	0.3	22	3.0	1.00 (0.00)
Facelift	9	1.2	21	2.9	0.95 (0.22)
Labiaplasty	7	1.0	18	2.5	1.11 (0.47)
Rhinoplasty	0	0	18	2.5	1.39 (0.78)
Lipofilling	6	0.8	17	2.3	n.a.
Threadlift	1	0.1	17	2.3	2.12 (2.52)
Otoplasty	0	0	8	1.1	1.25 (0.71)
Profhilo	5	0.6	1	0.1	n.a.
Other	10	1.5	33	4.5	

Note. List is ordered on frequency of procedures that people have had done now and in the past (i.e., history). Mean and standard deviation only for those who said to have had the procedure done. N.a. is not available

Table 4 Reasons in general – not specified for actual procedure done – order to frequency

Reason	Open question		Closed question	
	Frequency	Percentage	Frequency	Percentage
I am dissatisfied with my appearance	524	71.4%	269	36.6%
Medical reasons	82	11.2%	63	8.6%
I am insecure about my appearance	27	3.7%	145	19.8%
I want to (keep) look(ing) good for work	0	0%	91	12.4%
I want to look good for others	0	0%	73	9.9%
Others I know have had a cosmetic procedure	4	0.5%	52	7.1%
Through social media filters I have seen what I can look like	0	0%	33	4.5%
On social media I see what others look like and I want to look like that too	0	0%	32	4.4%
Focus on result, no clear reason	25	3.4%	0	0%
Previous experience	40	5.4%	0	0%
Good price or deal	9	1.2%	0	0%
Non-invasive, safe	16	2.2%	0	0%
Other	31	4.2%	236	32.2%
Nonsense	8	1.1%	2	0.3%
For me / myself			77	10.5%

Note. $N = 734$. Some open answers included multiple categories, so frequencies add up to more than 734. Percentages are calculated based on the full sample

with the ageing of my face" and "After pregnancy breasts no longer attractive"). Yet, some variation was observed across respondents choosing different procedures; whereas over 80% opting for injectables indicated that dissatisfaction played a role, this was only 66.7% for eyelid corrections and 53.3% for breast augmentations. Consumers also quoted *medical reasons* for cosmetic procedures (11.2%); *(positive) previous experiences* (5.4%); or *appearance-related insecurities* (3.4%). Again, some notable differences became apparent across procedures. For example, medical reasons were more common for eyelid corrections (44.4%) than for breast augmentation (13.3%), BTX (11%), and fillers (6.1%). Interestingly insecurities related to appearance were never mentioned for eyelid corrections, rarely for BTX (2.6%), and slightly more frequently for fillers (4.6%) and breast augmentations (6.7%).

Large differences can be observed between respondents' answers to the open question and the closed question where we provided possible motivations for cosmetic procedures. When presented with eight potential reasons, the most

commonly selected was still *dissatisfaction with appearance*, but this was only selected by 36.6% of the consumers. *Appearance-related insecurities* were selected by 19.8% of the respondents, which is far more than the 3.7% who indicated this in the open question. Variations were found across procedures; for example, whereas only 8.1% of respondents undergoing eyelid corrections indicated that appearance-related insecurities played a role, this was 17.6% for BTX, 22.8% for fillers, and 40% of respondents undergoing breast augmentation.

Answers to the closed question were also more diverse compared to the open question: 12.4% of the consumer indicated that *looking good for work* played a role: this was most common for BTX (13.8%), fillers (12.4%), and eyelid corrections (9.5%). In addition, 9.9% of respondents selected *looking good for others*, which was most common for eyelid corrections (12.2%), BTX (10.6%), and fillers (9.2%), compared to breast augmentation (6.7%). *Vicarious experience* was identified by 7.1% of respondents as a factor in the decision to undergo cosmetic procedures. The *role of social media* – both comparing oneself to others and to an edited, filtered version of oneself – played a role for 4.5% of the respondents, particularly those receiving injectables (e.g., 7.3% of filler recipients indicated that their filtered versions on social media influenced their decision). When analyzing differences across procedures, it is interesting to note that *vicarious experiences* play a larger role for eyelid corrections (12.2%) when compared to breast augmentations (6.7%), fillers (6.3%) and BTX (6.2%). Interestingly, 10.8% of respondents added their *own reason* to the close-ended answer options. Most of these open answers reflected dissatisfaction with appearance (46.2%) or emphasized that consumers "want to look good for themselves" (32.6%).

Clinic

Consumers visited a total of 36 different clinics. However, most respondents went to Faceland (85%), a chain of cosmetic clinics with locations across the Netherlands, which offers both surgical and non-surgical procedures. More than half of the consumers (54.2%) have visited multiple clinics for treatments. Of those who visited multiple clinics, a majority had visited two (48.7%) or three (31.2%) clinics, and only 2% had visited 6 or more clinics. The main reasons to switch clinics were different specializations of clinics and/or medical professionals (26.5%), price differences and/or special offers (21.9%), convenience (13.9%), which often related to the location of clinics, and recommendations by others (12.8%). Other reasons pertained to comparing clinics to find 'the best one' (8.6%), dissatisfaction with a clinic (8.0%), other clinics did not exist (yet) or were unknown to respondents (7.8%), or respondents followed their practitioners to other clinics (2.4%).

Factors influencing having specific treatments

We ran logistic regressions to gain insights into which factors could explain the likelihood of having specific treatments. We focused on the treatments with the highest frequency, namely botulinum toxin injections, dermal filler injections, breast enlargements, and eyelid corrections. Table 5 presents the results of the four logistic regression analyses. For conciseness, we focus on significant relations.

With respect to BTX injections, the logistic regression revealed that age significantly increased the odds of opting for this treatment ($b = 0.03$, $OR = 1.03$, $p = .003$). In addition, the likelihood of getting BTX was significantly higher for higher educated consumers ($b = 0.85$, $OR = 2.34$, $p = .002$), compared to consumers with a lower education.

For fillers, we found that while controlling for all other predictors, females were significantly more likely to get fillers ($b = 1.11$, $OR = 3.04$, $p = .014$). Moreover, the odds of having fillers significantly increased alongside more frequent daily use of highly visual social media ($b = 0.30$, $OR = 1.34$, $p = .006$).

Furthermore, the odds of having an eyelid correction significantly increased with consumers' age ($b = 0.06$, $OR = 1.06$, $p < .001$), and are significantly higher for educated consumers ($b = 0.74$, $OR = 2.10$, $p = .020$) compared to consumers with a lower education.

Finally, lower-educated consumers were significantly more likely to have breast enlargements compared to higher-educated consumers ($b = -0.76$, $OR = 0.47$, $p = .014$).

Discussion

This study both confirms previous characterizations of cosmetic consumers, but also raises valuable new insights and questions, particularly in relation to the motivations and predictors underlying cosmetic procedures. Firstly, we can conclude that particularly non-invasive injectable treatments, eyelid corrections, and breast augmentations are popular among Dutch cosmetic consumers. This is similar to international figures although eyelid corrections are not equally popular globally [1]. Significantly, injectables in particular have a high repeat-rate; it seems that once people have tried BTX or fillers, they want to maintain their cosmetically enhanced appearance [25]. Moreover, previous experience of cosmetic procedures in general has been identified as a significant predictor of undergoing (further) procedures [18]. This is unsurprising as by undergoing procedures, they

Table 5 Logistics regression predicting likelihood of having had a procedure (y/n)

	BTX		Fillers		Eye lid correction		Breast enlargement	
	B (SE)	OR	B (SE)	OR	B (SE)	OR	B (SE)	OR
Age	**0.03** (0.01)**	**1.03**	–0.00 (0.01)	1.00	**0.06*** (0.01)**	**1.06**	–0.01 (0.01)	0.99
Female	0.33 (0.53)	1.40	**1.11* (0.45)**	**3.04**	–0.37 (0.52)	0.69	19.25 (7931.47)	228023230.03
Education middle (reference = low)	0.16 (0.25)	1.18	0.04 (0.25)	1.04	0.50 (0.32)	1.65	–0.38 (0.29)	0.68
Education high (reference = low)	**0.85** (0.28)**	**2.34**	–0.10 (0.25)	0.90	**0.74* (0.32)**	**2.10**	**–0.76* (0.31)**	**0.47**
Heterosexual (vs. not)	–0.34 (0.36)	0.71	–0.28 (0.33)	0.76	–0.02 (0.38)	0.98	0.26 (0.46)	1.30
Relationship (vs. not)	0.20 (0.19)	1.22	–0.06 (0.18)	0.94	0.34 (0.21)	1.41	0.19 (0.24)	1.21
Born in the Netherlands	–0.62 (0.43)	0.54	–0.13 (0.38)	0.87	0.19 (0.45)	1.21	0.60 (0.58)	1.83
Ethnicity: Dutch mother	0.22 (0.30)	1.25	0.09 (0.29)	1.09	0.14 (0.35)	1.15	0.29 (0.40)	1.34
Ethnicity: Dutch father	0.16 (0.30)	1.17	0.15 (0.28)	1.16	–0.30 (0.32)	0.74	–0.28 (0.36)	0.76
HVSM	–0.13 (0.11)	0.88	**0.30** (0.11)**	**1.34**	–0.03 (0.13)	0.97	–0.26 (0.14)	0.77
Constant	0.02 (0.76)	1.02	0.02 (0.76)	0.79	–4.59*** (0.83)	0.01	–20.63 (7931.47)	0.00
$\chi^2(10)$	44.90, $p < .001$		19.07, $p = .039$		74.27, $p < .001$		21.57, $p = .017$	
–2 Log Likelihood	755.64		870.79		694.48		573.18	
Nagelkerke R^2	0.09		0.04		0.15		0.05	

Note. $N = 732$. B = unstandardized b coefficient, SE = standard error, OR = Odds Ratio. * $p < .05$, ** $p < .01$, *** $p < .001$

become increasingly normalized for the recipients of cosmetic procedures.

In line with previous studies, cosmetic consumers are often middle-aged women, although younger women also demonstrate interest in cosmetic procedures [26]. The popularity of cosmetic procedures among a younger demographic can be linked to the normalization of these procedures and the strongly visual culture that young people have grown up with (Ashikali et al., 2016; Ching & Xu, 2019). The cosmetic consumers in our sample are often born in the Netherlands – with parents who were also born in the Netherlands – and are highly educated with relatively high incomes [13, 27]. Nevertheless, it is noteworthy that nearly a fifth of the cosmetic consumers included here comprised of single-earner consumers with a relatively low income. Moreover, income was not a significant predictor for any of the cosmetic procedures. We can thus conclude that whereas (some) financial capital is a prerequisite for undergoing cosmetic procedures – although financing options are increasingly available – it is not the case that more (disposable) income increases cosmetic procedure engagement.

In terms of cosmetic consumers' relationship status, the sample included a higher proportion of single people (33.7%) compared to national statistics (i.e., 17.5% of people in the Netherlands are estimated to be single) [28]. Nevertheless, relationship status was not a significant predictor for any of the cosmetic procedures. Moreover, as none of the cosmetic consumers indicated the role of (future) romantic partners in the open question related to motivation, and the closed category of *looking good for others* may also include non-romantic 'others', we find little evidence for a relation between engagement in cosmetic procedure(s) and investment in (future) romantic relationships.

There were large differences in terms of the regionality of cosmetic consumers, with procedures appearing more popular in both the Dutch center-west metropolitan conglomerate and the southern peripheral areas. Particularly the differences between the peripheral areas are interesting here; it appears that regions with a Protestant – particularly Calvinist – tradition, which are far more critical of (outward) frivolity and excess, include (far) fewer cosmetic consumers compared to regions with a Roman Catholic history [29].

Motivations and predictors for cosmetic procedures

Considering the motivations for cosmetic procedures, the discrepancy and variation between the answers to the open and closed questions is striking, for instance in relation to dissatisfaction with appearance and appearance-related insecurities. Whereas respondents were more likely to provide appearance dissatisfaction as a motivation in an open question, appearance-related insecurities were far more frequently selected as a motivator when this option was provided amongst other potential motivators as part of closed question. Moreover, the diversity of motivators increased when different options were provided as part of a closed question with specific options. These differences in responses to the same question, dependent on whether the answer option was open or closed, have been found across the literature [30, 31]. As Kalton and Schuman (1982) argue, both open-ended and closed-ended questions can work well to ascertain people's motivations behind certain behaviors,

however providing set alternatives in closed questions may influence the responses selected [31]. Nevertheless, we would like to argue here that respondents may initially have found it hard to identify, or were reluctant to disclose, underlying motivations for the procedures they had undergone. When presented with different options, participants may have recognized additional or different motivators applicable to them and may have felt reassured that these answer options were common for other people (too). A closed question, then, may be a more accessible, perhaps less threatening, way of establishing cosmetic procedure motivators. Yet, the discrepancy between the open and closed question does illustrate that providing preset answer options nudges participants, or at least draws attention to options that participants would not have introduced themselves. If we had only asked for consumers' motivations in an open question, the role of social media, looking good for others and/or for work, would not have been raised at all. Interestingly, certain answer options provided for the closed question – i.e., those related to external influences on people's decision to undergo cosmetic procedures – appear to have raised some resistance, with several of the respondents emphasizing they wanted to "look good for themselves". This emphasis on making the decision to undergo cosmetic procedures independently of external influence has been found more widely in cosmetic consumers [7].

In terms of the predictors for cosmetic procedures, only a few significant relations could be established. Cosmetic consumers choosing fillers, for example, were more likely to be female and to make greater use of highly visual social media platforms (HVSM) like Instagram, TikTok or Snapchat. This is in line with previous research [19], although it is unclear why this relationship is solely significant for fillers but not for other (non-invasive) cosmetic procedures.

For BTX use and eyelid corrections there was a significant correlation with both higher educational attainment and age. The correlation with age is unsurprising as BTX is often used to treat wrinkles and eyelid corrections are performed to remove excess skin as eyelids stretch with age. In terms of educational attainment, there appears to be a difference between more inconspicuous facial procedures – which are more frequently undertaken by people with a higher educational attainment – and more conspicuous, bodily procedures, i.e., breast augmentations, which are more popular among people with lower educational attainment. The reasons for this may relate to distinctions in beauty ideals and/or beauty repertoires across people with different educational attainment levels [32, 33]. However, it is important here not to equate educational attainment levels with more general socio-economic status and/or class, as other indicators like income were not significant here. Further research into the socio-economic status, or perhaps

access to different types of capital, of cosmetic consumers is needed to further understand these relationships.

Although it is important to discuss the few significant relations that were found, the overall lack of significant predictors is perhaps even more relevant. After all, only age, gender, educational attainment, and use of HVSM were significant predictors for *some* of the cosmetic procedures. This means that income, sexual orientation, relationship status, and ethnicity were all insignificant here. All in all, there are thus few straightforward predictors for the decision to undergo particular cosmetic procedures.

Conclusion

This study provides a comprehensive overview of the demographic characteristics and motivations of a varied sample of cosmetic consumers, and the types and quantities of cosmetic procedures they undergo. In terms of demographics, we can conclude that there is no unequivocal characterization of 'the' cosmetic consumer in the Netherlands, although she frequently identifies as a heterosexual female of Dutch descent. Yet, only the overrepresentation of women deviates from national statistics. Nevertheless, there are some regional differences in relation to cosmetic procedure engagement, which may reflect variations in sociocultural contexts resulting from different religious traditions. This point requires further attention as previous studies have demonstrated the role of religious beliefs in cosmetic surgery acceptance and intention [34, 35], but less attention has been paid to the wider cultures inspired by religion religious denominations.

Similar to the heterogeneity of cosmetic consumers' demographic characteristics, the motivators and predictors behind the decision to undergo cosmetic procedures are multifaceted and complex. When asked to provide their cosmetic procedure motivation by means of an open-ended question, appearance dissatisfaction and medical indications were most popular. Yet, when these options were provided as part of a list with possible motivators, a different picture emerged as appearance dissatisfaction was selected far less frequently and appearance-related insecurities and external motivators presented by social media, work, or people's social circle emerged as important factors. Alongside this, though, there was a small group of cosmetic consumers who distanced themselves from external influences, instead emphasizing they were internally motivated.

Only few relations between predictors and (a selection of) cosmetic procedures proved significant. Nevertheless, some interesting differences emerged which require further investigation, in particular related to the role of highly visual social media and educational attainment in the decision for

specific cosmetic procedures. It would be valuable to understand these differences in relation to variations in beauty ideals and repertoires across people with various socioeconomic status and/or access to different types of capital.

Declarations

Competing interests The authors have no relevant financial or non-financial interests to disclose.

Ethical approval This study was reviewed and approval by the ethical review board of the Tilburg School of Social and Behavioral Sciences, Tilburg University, the Netherlands (reference TSB_RP1127). Patient consent Informed consent was obtained from all individual participants included in the study.

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