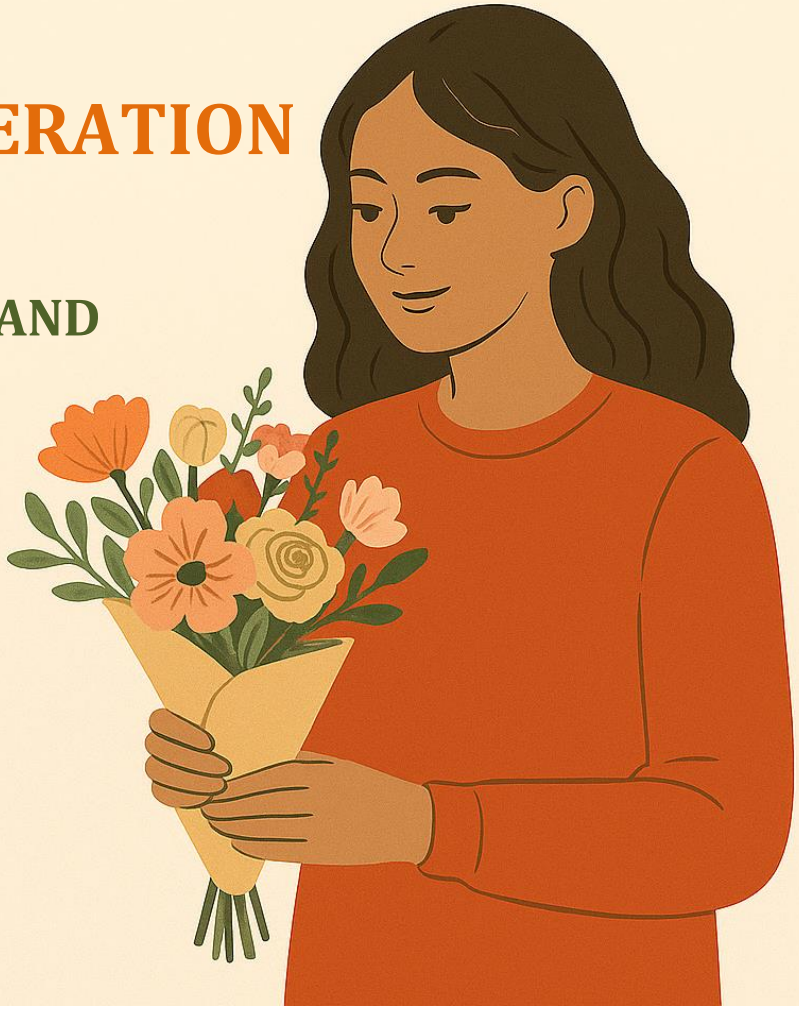
CATERING TO GENERATION Z CONSUMERS:

IDENTIFYING KEY TRAITS AND WELLBEING BENEFITS IN FLORAL PRODUCTS



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Presented by

FLORAL MARKETING FUND
Growing Our Industry Together

Completed by

Lab for the Assessment and Promotion of Physical Activity and Health (APPAH)

COLORADO STATE UNIVERSITY

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Growing Our Industry Together

About the Floral Marketing Fund (FMF)

The **Floral Marketing Fund (FMF)** represents a community of floral industry organizations and leaders collaboratively supporting and funding floral marketing efforts, consumer research, and promoting the emotional wellness and health benefits to increase consumer consumption of flowers and plants.

Originally established as the Floral Marketing Research Fund in 2008 by volunteers of the **American Floral Endowment (AFE)**, the Floral Marketing Fund (FMF) works in cooperation with AFE to support important projects such as this one. The FMF utilizes funds and expertise from industry sources to provide both financial support and human capital to projects that will benefit the entire floriculture industry – connecting marketers and researchers directly with industry leaders to directly support increased flower sales.

FloralMarketingFund.org

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About CalFlowers

The **California Association of Flower Growers & Shippers (CalFlowers)**, formerly known as NORCAL, was established in 1941 by a group of flower shipping companies with the goal of promoting the success of California's floral industry within the United States. What began as a regional effort has since evolved into a leading floral trade association, playing a crucial role in supporting the entire supply chain nationwide. Today, CalFlowers represents over 845 members across every segment of the floral industry, including growers, wholesalers, retailers, suppliers, and agricultural businesses.

CAFGS.org

FTD 1910

About FTD LLC

Since its founding in 1910, **FTD** has helped florists create memorable moments with beautiful flowers. By providing valuable resources, tools, and technology platforms, we empower local florists to design and deliver bouquets and gifts and stimulate a profitable business. By working together, we guide florists to grow even stronger with the orders and resources offered by FTD.

FTD

EXECUTIVE SUMMARY

This report presents findings from a nationwide survey of 2,011 Generation Z (Gen Z) participants, potential floral consumers, examining their floral purchasing behaviors, preferences, and perceived benefits. The study explored a broad range of factors, including purchasing frequency, product type, price sensitivity, sustainability, packaging design, personalization, social media influence, and the emotional impact of giving and receiving flowers. Using validated scales and structured survey instruments, data were analyzed through descriptive statistics to highlight trends in consumer behavior and preferences.

Results revealed several important themes:

1. **Grocery stores remain the most common purchasing venue**; however, digital platforms (particularly Instagram, TikTok) as well as online reviews of products or services, are increasingly influential in shaping consumer perceptions, product discovery, and purchasing decisions.
2. **Pricing and affordability emerged as key drivers**, with the majority of participants reporting that they compare prices, maximize quality for cost, and respond positively to sales and promotions.
3. **Beyond affordability, Gen Z also emphasized product attributes such as freshness, visual appeal, fragrance, and sustainability**. Eco-friendly packaging, recyclable materials, and clear, accurate product labeling were strongly associated with purchasing decisions.

Beyond consumer behavior, this study examined the broader role of flowers in supporting mental health and social wellbeing. Gen Z participants reported that flowers play a meaningful role in fostering social connection, reducing stress, and enhancing emotional wellbeing. Engagement with flowers—both receiving and giving—was linked to positive effect and increased connectedness with nature. These findings highlight the potential for floriculture to be positioned not only as a consumer industry but also as a contributor to public health and student wellness initiatives.

Overall, the study underscores the dual role of floral products in Gen Z's lives: flowers are **both market-driven consumer goods and wellness-enhancing experiences**. These insights provide actionable guidance for the **floral industry, higher education, and public health sectors**, and create a foundation for future research and intervention development.

KEY TAKEAWAYS

The results of this study offer meaningful implications for multiple stakeholders:

For the Floral Industry

- **Integrate social media strategically.** Instagram and TikTok are the dominant discovery platforms for Gen Z floral consumers. Targeted influencer collaborations, trend-based video content, and interactive digital storytelling can substantially increase visibility and engagement.
- **Emphasize freshness and aesthetics.** Freshness, fragrance, and visual appeal (color, size, and design style) were top purchase drivers. Highlighting sensory qualities through in-store displays, high-resolution imagery, and freshness guarantees can strengthen Gen Z consumer trust.
- **Adopt dual-channel sales approaches.** While grocery stores remain key retail sites, digital and social commerce are rapidly growing. A hybrid retail strategy that connects online promotions with in-store experience will best meet Gen Z expectations.
- **Leverage eco-friendly and transparent practices.** Sustainability is a non-negotiable value for Gen Z population. Using recyclable or biodegradable packaging, transparent sourcing, and visible eco-certifications can serve as differentiators in a competitive market.
- **Offer personalization and customization options.** Personalized arrangements, creative packaging, and customizable cards or labels enhance perceived value and emotional connection. Gen Z values products that feel unique and expressive of individual identity.
- **Prioritize affordability without sacrificing quality.** Cost remains a major decision factor—over 70% compare prices and are motivated by promotions. Affordable luxury, value bundles, and student discounts can help attract younger consumers.
- **Highlight emotional and wellness benefits.** Flowers are linked to improved mood, reduced stress, and enhanced social connectedness. Marketing should position flowers not only as gifts but as everyday self-care and wellness tools.
- **Connect flowers to life events and "just because" moments.** Gen Z buys flowers for traditional occasions (Mother's Day, Valentine's Day) but also for spontaneous joy and

friendship gestures. Campaigns that normalize casual, everyday flower gifting can drive frequent purchases.

- **Design meaningful in-store experiences.** Gen Z appreciates hands-on interaction—seeing, touching, and smelling flowers, and engaging with florists. Offering bouquet-making stations, pop-up events, and social spaces can strengthen brand relationships.
- **Promote seasonal and local sourcing.** Highlighting locally grown or seasonal flowers aligns with Gen Z's sustainability and authenticity values, while supporting community-oriented narratives and reducing environmental footprint.
- **Build cross-sector partnerships.** Collaborations with universities, wellness programs, and workplaces can position flowers as tools for mental health and stress relief—broadening market exposure beyond retail.
- **Invest in education and storytelling.** Gen Z values purpose-driven brands. Sharing stories about growers, flower origins, and environmental impacts can humanize the supply chain and enhance consumer loyalty.

For Higher Education and Student Wellness Programs

- **Integrate flowers into campus wellness initiatives.** Incorporating floral displays, flower-arranging workshops, or plant care activities into student wellness programming can promote stress reduction, emotional regulation, and social connectedness.
- **Promote biophilic learning environments.** Embedding flowers and plants in classrooms, residence halls, and study spaces aligns with biophilic design principles, improving mood, focus, and overall academic engagement among students.
- **Encourage student engagement through experiential learning.** Partnering with horticulture, psychology, or health promotion departments to create service-learning or capstone opportunities around floriculture and wellbeing can foster applied skills and interdisciplinary collaboration.
- **Normalize flowers as everyday wellbeing tools.** Campaigns emphasizing "flowers for self-care" or "just because" gifting can shift cultural norms, positioning floral interactions as accessible mental health supports rather than limited to holidays or formal occasions.
- **Leverage student peer networks for impact.** Peer-led initiatives—such as flower-sharing events or sustainability challenges—can harness Gen Z's social influence to promote mental health and ecological responsibility through floral engagement.

- **Evaluate health and educational outcomes.** Embedding flower-based engagement within student wellbeing assessment frameworks can help institutions measure benefits in stress reduction, belonging, and academic performance.

For Public Health and Research

- **Position floriculture as a health-promoting industry.** Flowers represent an evidence-supported, low-cost means of improving emotional wellbeing, social connectedness, and stress resilience—key determinants of public health.
- **Advance research on biophilic and floral engagement.** Future studies should examine how active (plant care, arranging) versus passive (receiving, viewing) engagement with flowers influences mental and physical health across diverse populations.
- **Develop cross-sector collaborations.** Partnerships between public health agencies, the floral industry, and higher education can yield scalable interventions that promote mental wellness while supporting sustainable industry growth.
- **Integrate floral exposure into preventive health models.** Incorporating flowers into community health, aging, and workplace wellness programs offers a novel avenue for preventive health promotion and stress management.
- **Broaden measurement of wellbeing impacts.** Researchers should include validated mental health, social cohesion, and environmental connectedness measures to build an evidence base that links floral engagement to holistic health outcomes.
- **Promote equity and accessibility in floral engagement.** Public health initiatives can ensure equitable access to the benefits of floral environments—such as urban flower gardens, public installations, and community-based floral therapy programs.

Keywords: Generation Z, floral products, consumer preferences, sustainability, social media, mental health, wellbeing.

INTRODUCTION

Generation Z (Gen Z) refers to the generational cohort that follows Millennials and comprises people born roughly between 1997 and 2012, with ages ranging from 11 to 26 in the year 2023 (13 to 28 in 2025) (Pew Research Center, 2019; Walters, 2021). This generation represents the youngest group of current consumers as well as a large proportion of future consumers (Bennett et al., 2022). Compared to any previous generations such as Millennials, Gen Z consumers have distinctive characteristics including digitally savvy, individualistic/expressive, environmentally conscious, visual-oriented, experience-driven, price-sensitive, socially impacted, and convenience-seeking and are more likely to be influenced by social media and peer recommendations (Stylos et al., 2021). Yet, little research has been conducted to determine which key traits in floral products are truly important to Gen Z consumers and drive their purchasing behavior.

When it comes to the wellbeing of Gen Z consumers, it is evident that they face challenges related to mental health. Based on the Stress in America™ Survey sponsored by the American Psychological Association (APA) in 2019, merely 45% of individuals from Gen Z reported having good mental health, which is 11% lower than the corresponding figure for Millennials (Bethune, 2019). An astonishing 91% of Gen Z members have reported experiencing physical or emotional symptoms stemming from stress and mental health issues in the past year (Bethune, 2019). The primary demographic within the Gen Z cohort comprises college students, with 57% of individuals aged 18 to 21 enrolled in higher education (Pew Research Center, 2020). College years are an important time for both physical and mental wellbeing, as well as the development of healthy adult behaviors. A significant prevalence of mental health disorders was observed among US college students. In 2022, more than three-quarters (77%) of college students faced moderate to severe psychological distress, with 35% and 27% receiving diagnosis of anxiety and depression, respectively (American College Health Association, 2022).

The term “biophilia” was introduced by psychologist Erich Fromm (Fromm, 1964) and extended by the biologist Edward O. Wilson (Wilson, 1984). Biophilia is defined as “the urge to affiliate with other forms of life (Fromm, 2023)” or the innate bond between human beings and other living things. Biophilic design is an emerging trend in design to bring elements of nature into a space by “rediscovering” the innate connection between people and nature (Salingaros &

Masden, 2008). The purpose of biophilic design is to create environments that mimic or simulate natural settings and evoke positive physiological and psychological responses, improving overall well-being (Zhong et al., 2022). One of the principles of biophilic design is the incorporation of nature into space, creating a visual connection with the natural world. For example, this can be achieved by incorporating vegetation (e.g., plants, flowers) into both indoor and outdoor spaces (Huntsman & Bulaj, 2022). Exposure to nature through green spaces as well as flowers may improve general health and wellbeing by reducing harm (e.g., increased air quality), restoring fatigued attention, and buffering/mitigating stress (Kellert & Calabrese, 2015; Markevych et al., 2017). Therefore, floral products can be a great way to foster a healthy lifestyle and inspiring learning environment for Gen Z folks such as college students.

A reciprocal connection emerges between the “floral environment” and “floral product purchases”, mutually enhancing one another through improved mental health and wellbeing, benefitting both the floral industry and Gen Z consumers from a long-term perspective. To the best of our knowledge, few studies have examined the reciprocal association between floral products and mental health and wellbeing among Gen Z. **This project sought to identify key traits in floral products that attract and benefit Gen Z consumers and to generate insights that can inform marketing strategies, product innovation, and wellness-oriented positioning in the floral industry.**

METHODS

Study Design

We conducted a nationwide, web-based cross-sectional survey to assess the demand, preferences, and perceived benefits of floral products among Generation Z (individuals born from the mid-1990s to the early 2010s). The survey required approximately 10 –15 minutes to complete. Prior to data collection, the study protocol (#6233) was reviewed and approved by the Institutional Review Board at Colorado State University (CSU). Floral industry leaders from the Floral Marketing Fund, along with co-sponsors CalFlowers and FTD, provided valuable input on the survey design to ensure its relevance and impact for the floral industry.

Participants

Inclusion Criteria

Individuals must be born on or after 1997, be at least 18 years old, and not exceed 28 years of age as of the time when the survey was conducted. Participants must reside within the United States. Our goal was to recruit 2,000 Gen Z participants from all 50 states and Washington, D.C. Ultimately.

Data Collection Procedure

Recruitment

Participants were recruited from Qualtrics LLC (“Qualtrics”) panel members, representing a national sample of Gen Z individuals. Qualtrics maintains an extensive and diverse participant pool, which allows for precise targeting of this demographic. Potential participants received an email invitation or prompted on the Qualtrics platform to participate. The invitation included a survey link and a QR code, along with a brief, generic description of the study and the incentive. Participants could access the survey at any time that is convenient for them using their electronic devices (laptop, smartphone, or tablet).

Consent Process

Upon accessing the survey, participants viewed a cover letter on the first page explaining the study purpose, procedures, risks, benefits, and confidentiality protections. The cover letter includes the statement: “To provide your informed consent to participate in this research and proceed to the survey, please click 'Continue.'” Participants who clicked “Continue” advance to the next page, where they were provided formal consent by selecting “Yes, I consent” in response to the question: “Please provide your informed consent below.” Participants might skip any question or choose “Do not know/Prefer not to answer” for any survey item.

Survey Completion

The survey was conducted entirely online through the Qualtrics platform. Participants had full autonomy regarding when and where they completed the survey, ensuring privacy and convenience. All responses were collected confidentially, and only designated study personnel could access the data.

Data Storage and Security

Data were initially stored on Qualtrics’ secure cloud servers. After survey completion, all data were transferred to the CSU Department of Health and Exercise Science (HES) protected server on the departmental shared drive. Access to these servers was limited to personnel listed in this protocol approved by CSU IRB. All data cleaning, processing, and analyses were conducted exclusively by authorized personnel. Study documents would be retained for three years following study completion in accordance with federal guidelines.

Compensation

Participants received compensation through the Qualtrics panel, with the proposed incentive approximately $6 per participant. The final compensation amount was determined by Qualtrics, based on standard panel procedures. Participants were informed that they will receive the compensation they agreed upon before entering the survey but were not provided with the exact amount in the initial invitation.

Data Quality Control

To ensure high-quality responses, the survey incorporated multiple measures to detect

inattentive or disengaged participants. First, a minimum completion time was established to filter out respondents who rushed through the survey without adequate consideration. Based on the soft launch data, the median time to completion 8 minutes. Speeding check was added, set at half the median soft launch time—which will automatically terminate responses from participants who were not answering thoughtfully. Second, attention check questions, also known as instructional manipulation checks (IMCs), were embedded throughout the survey. For example, participants were asked to select a specific item from a list ("If you are paying attention, please select 'Banana' from the list below") or answer simple math questions ("If 5 people each buy 2 apples, how many apples are there in total?"). These checks have predetermined correct answers, allowing researchers to identify and exclude participants who failed to demonstrate engagement. By incorporating these quality control measures, the study ensured that the data collected are reliable, accurate, and reflective of thoughtful participant responses. Over 4,000 potential participants responded to the invitation. After applying the inclusion criteria and conducting data quality control, data from 2,011 individuals with complete responses were included in the analysis. Data collection began on April 9, 2025, and concluded on April 19, 2025.

Survey Domains and Questions

Due to the exploration nature of this research, not all survey instruments were available in literature. We used validated scales that are available and, if necessary, developed questions or derived scales/questions from previous relevant studies based on when validated scales were unavailable. The intended measures are listed below:

Participant Characteristics

Participant characteristics included age, sex, race/ethnicity, college years or education level, college major (if completed or currently in college), family income, working hours, region, and other relevant demographics to understand the diversity of the college student sample

Floral Experience

We surveyed participants about their frequency of purchasing and receiving floral products, preferred purchasing locations, most commonly purchased types, seasonal and occasion-based buying patterns, annual expenses, favorite flowers, and the factors influencing their purchasing

decisions (Catherine Boeckmann, 2022, February 2; Rihn et al., 2011; Social FLowers, 2024; VanDerZanden, 2023, January 19; Zhang et al., 2023).

Expectations for Floral Products

We measured attributes participants considered important when purchasing floral products using three 5-point Likert scales (1 = Strongly disagree, 5 = Strong agree): expectations for flowers (4 items), emotion condition (4 items), and curiosity fulfills (3 items) (Yeh & Huang, 2009).

References and/or Referrals for Purchasing

We assessed the sources influencing participants' floral purchasing decisions. These included interpersonal sources such as friends, family members, and others in their social network (1 = Very Uninfluential, 5 = Very Influential) (Xu et al., 2022); online reviews, including number of stars, number of reviews, positive reviews, and negative reviews (1 = Very Uninfluential, 5 = Very Influential, 6 = I do not look at online reviews) (Maslowska et al., 2017; Von Helversen et al., 2018); and perceived benefits, including social, physical, emotional/mental, and recipient benefits (1 = Very Uninfluential, 5 = Very Influential) (Rihn & Behe, 2023).

Sustainability and Eco-Friendly Practices

We measured the importance of sustainability and eco-friendly practices in Gen Z's expectations for floral products using an 8-item, 5-point Likert Ecologically Conscious Buying Behavior Scale (1 = Strongly disagree, 5 = Strongly agree) (Heo & Muralidharan, 2019).

Personalization and Customization

We assessed the significance of personalization and customization options (including color, labeling, recyclability, design, and package information) in shaping preferences among Gen Z consumers using a 5-item, 5-point Likert product packaging scale (1 = Strongly disagree, 5 = Strongly agree) (Zhao et al., 2021).

Pricing and Affordability

We assessed the role of pricing and affordability in Gen Z consumers' floral purchasing decisions using a 4-item, 5-point Likert pricing and Affordability scale (1 = Strongly disagree, 5 =

Strongly agree) (Zhao et al., 2021). Example items include: “I compare prices across stores to ensure I get the best value for my money” and “I always try to obtain the highest quality for the money I spend."

Social Media and Digital Influence

We evaluated the role of social media platforms and digital presence in shaping Gen Z consumers’ perceptions and purchasing choices regarding floral products. Participants were asked which social media platform(s) they relied on most for information about buying flowers. We also assessed opinions on e-commerce and brick-and-mortar retailers using eight questions (Dublino, 2024, September 9). The influence of social media marketing activities and customer experience was measured with 5-point Likert scales (1 = Strongly disagree, 5 = Strongly agree) across three dimensions: Intention (3 items), Customization (2 items), and Trendiness (1 item) (Wibowo et al., 2020). Additionally, the quality of the relationship between participants and social media platforms when purchasing flowers online was assessed using a 3-item, 5-point Likert satisfaction scale (1 = Strongly disagree, 5 = Strongly agree) (Wibowo et al., 2020)

Mental Health and Emotional Wellbeing (Nature Connectedness)

We measured Gen Z participants’ perceived stress using the validated 10-item Perceived Stress Scale (PSS) (Cohen et al., 1983). Example items include: “How often have you been upset because of something that happened unexpectedly?” and “How often have you felt that you were unable to control the important things in your life?” We also evaluated the potential effects of receiving flowers (5 items) and giving flowers (5 items) using 5-point Likert questions (1 = Strongly disagree, 5 = Strongly agree) (Haviland-Jones, 2018; Haviland-Jones et al., 2005). In addition, perceived nature connectedness was assessed using the single-item Inclusion of Nature in Self (INS) scale (Schultz, 2001).

Data Analyses

Statistical analyses were conducted using SAS software (SAS Institute Inc., Cary, NC). Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated to summarize participants’ responses across survey items. Frequencies were used to describe categorical variables, while means and standard deviations were used to examine continuous and Likert-scale items. To provide a multidimensional understanding of the data,

both frequencies and means are reported for certain measures, though not all. These analyses provided an overview of participant characteristics and patterns of responses related to floral purchasing behaviors, preferences, and perceptions.

RESULTS

Participant Characteristics

Participant characteristics are shown in Table 1. The study sample included 2,011 Gen Z participants, with ages ranging from 18 to 28 and the largest proportion aged 25 (15.5%), followed by ages 24 (12.4%) and 27 (12.1%) (Figure 1).

Out of the 2,011 participants, 46.5% (n = 935) identified their gender as male, 53.0% (n = 1065) females, 0.2% transgender, 0.3% (n = 15) non-binary, and 0.05% (n = 1) preferred not to say (Figure 2).

Most participants were White (64.3%), with 24.9% as Black or African American, 3.6% as Asian, and smaller proportions as American Indian/Alaska Native (3.6%) or other groups (1.6% Unknown and 1.4% Preferred not to say) (Figure 3). About 15.6% of participants reported being Latino.

Roughly one-quarter of participants (26.0%) were currently enrolled in college, with most in their senior year (22.8%), followed by 21.8% freshmen, 19.4% sophomores, 19.7% juniors, 4.4% fifth-year students, and 11.9% graduate

Figure 1. Participant Age

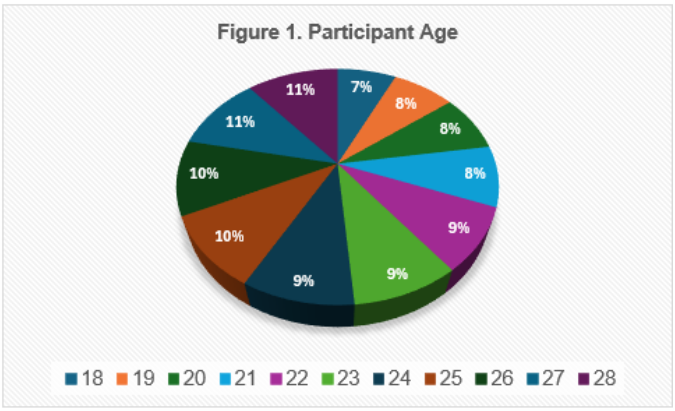


Figure 2. Participant Sex

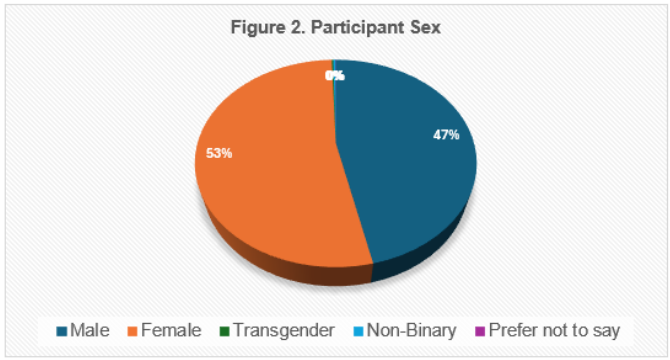
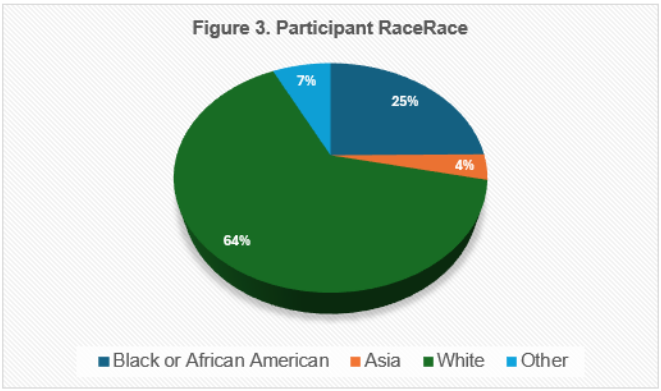
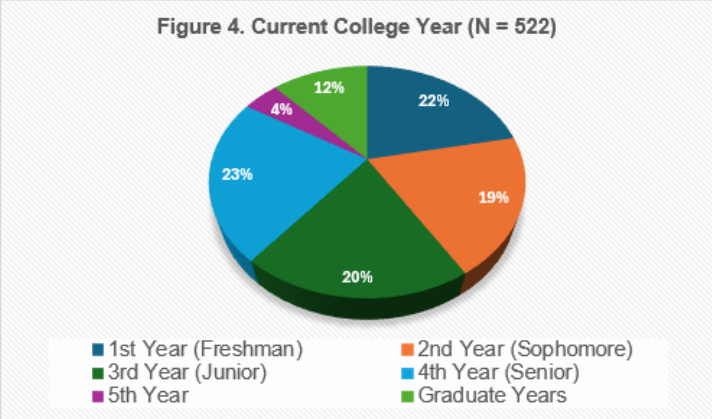
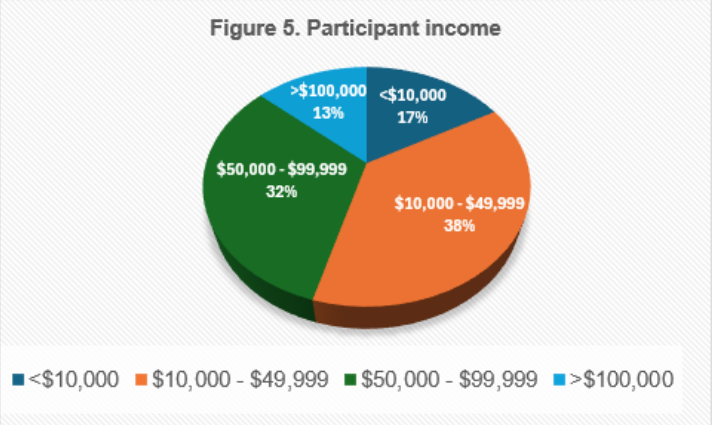


Figure 3. Participant RaceRace



students (Figure 4). Among those not currently enrolled in college, the highest educational attainment varied, with 38.1% holding a high school diploma or GED, 23.2% reporting some college, and 22.2% holding a bachelor's degree. When educational categories were combined, about one-third (33.1%) had a high school education or less, while 22.6% had completed a bachelor's degree or higher.





Participants represented a wide range of majors, most frequently business and economics (14.9%), STEM (12.9%), and arts and communication (10.6%), while 28.3% did not attend college. In terms of work, more than half (51.3%) reported working over 20 hours per week. Household income was most commonly in the $10,000–$49,999 range (37.5%), with about one-third (32.1%) in the $50,000–$99,999 range (Figure 5). Regionally, the South was most represented (38.3%), followed by the West (23.4%), Midwest (20.9%), and Northeast (17.4%).

Table 1. Participant demographics (N = 2,011)

	N	%
Age		
18	110	5.47
19	81	4.03
20	124	6.17
21	111	5.52
22	176	8.75
23	203	10.09
24	250	12.43
25	312	15.51

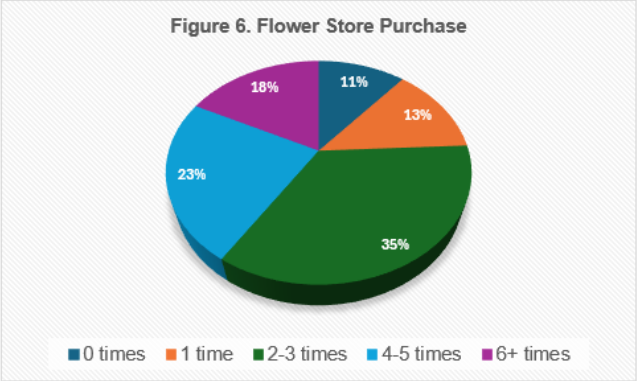
26	220	10.94
27	243	12.08
28	181	9
Sex		
Male	935	46.49
Female	1065	52.96
Transgender	4	0.2
Non-Binary	6	0.3
Prefer not to say	1	0.05
Latino		
Yes	313	15.56
No	1698	84.44
Race, 7 groups		
American Indian or Alaska Native	72	3.58
Asia	72	3.58
Black or African American	500	24.86
Native Hawaiian or Pacific Islander	13	0.65
White	1293	64.3
Unknown	32	1.59
Prefer not to say	29	1.44
Race, 4 groups		
Black or African American	500	24.86
Asia	72	3.58
White	1293	64.3
Other	146	7.26
Current in College		
Yes	522	25.96
No	1489	74.04
Current College Year		
1st Year (Freshman)	114	21.84
2nd Year (Sophomore)	101	19.35
3rd Year (Junior)	103	19.73
4th Year (Senior)	119	22.8

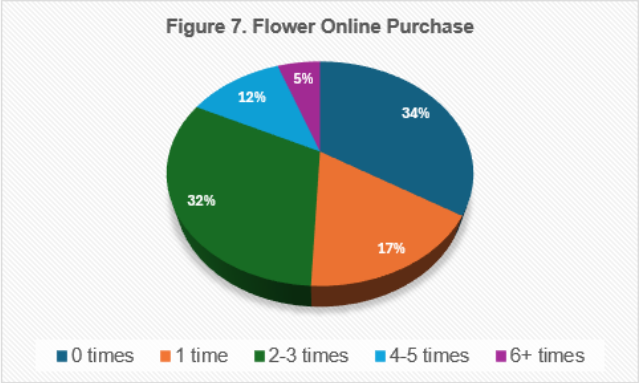
5th Year	23	4.41
Graduate Years	62	11.88
Highest degree if current NOT in College		
Less than a high school diploma	98	6.58
High school diploma or general equivalency diploma (GED)	567	38.08
Some college	345	23.17
Technical School/Trade School/Trade Training	86	5.78
Bachelor's Degree	330	22.16
Graduate Degree	63	4.23
Education level (current college and non-college participants)		
High school diploma or less	665	33.07
Not current college (Some college, Technical School/Trade School/Trade Training)	431	21.43
Current college	460	22.87
Bachelor's Degree or above	455	22.63
College Major		
Science, Technology, Engineering, and Math (STEM)	259	12.88
Social Science and Humanities	161	8.01
Business and Economics	300	14.92
Arts and Communication	214	10.64
Health and Medical	209	10.39
Education	168	8.35
Exploring Niche and Emerging	20	0.99
Other (Please Specify)	110	5.47
Did not attend college	570	28.34
Working hours per week		
0 hours	313	15.56
< 10 hours	304	15.12
10-20 hours	362	18
> 20 hours	1032	51.32
Income		
<$10,000	326	16.87
$10,000 - $49,999	725	37.53

$50,000 - $99,999	621	32.14
>$100,000	260	13.46
Region		
Northeast	349	17.35
Midwest	421	20.93
South	770	38.29
West	471	23.42

Floral Experience

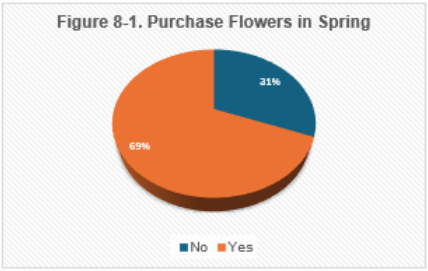
Table 2 shows the floral experience reported by Gen Z participants. The questions about participants' floral purchasing experiences focused on the past year at the time when they completed the survey.

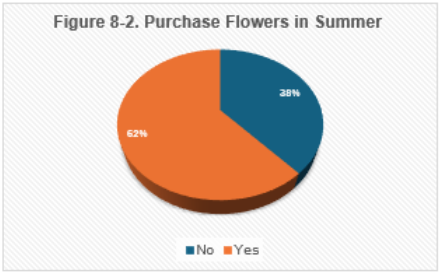


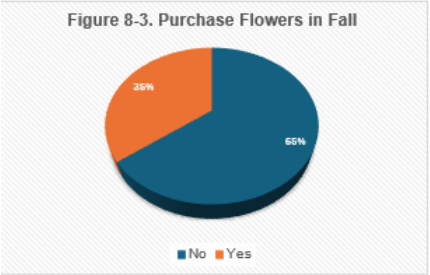


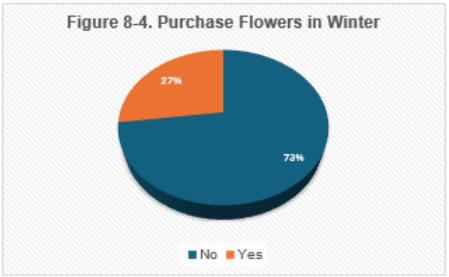
In general, physical stores remain the primary source of flower purchases among Gen Z. In our sample, only 9.1% of participants reported not buying flowers in physical stores. **Nearly 90% of participants purchased flowers from physical stores at least once, with 34.9% buying two to three times and 23.4% four to five times (Figure 6).** Among the physical stores, grocery stores proved to be the most common venue (36.4%), followed by independent flower shops (23.4%) and box stores (20.7%). Online purchasing flowers was also common, with two-thirds (66.0%) reporting at least one online flower purchase and about one-third (34.0%) reporting none; among online purchasers, 31.6% bought flowers two to three times and 12.2% four to five times (Figure 7). Fewer participants (55.5%) reported purchasing flowers through social media platforms, with nearly half (44.5%) never doing so.

Like flower purchases, plant purchases were also most commonly made through physical stores, with over 80% of participants reporting at least one in-store purchase. About one-third (31.9%) purchased two to three times, while 19.8% bought four to five times and 10.2% six or more times. Online purchases were less frequent, with 39.1% reporting no online purchases; however, nearly one-quarter (24.7%) bought plants online two to three times, and 13.4% reported four to five purchases. Social media was the least common source, with nearly half of participants (46.7%) never purchasing plants this way. Among those who did, 20.9% purchased two to three times and 10.3% four to five times.



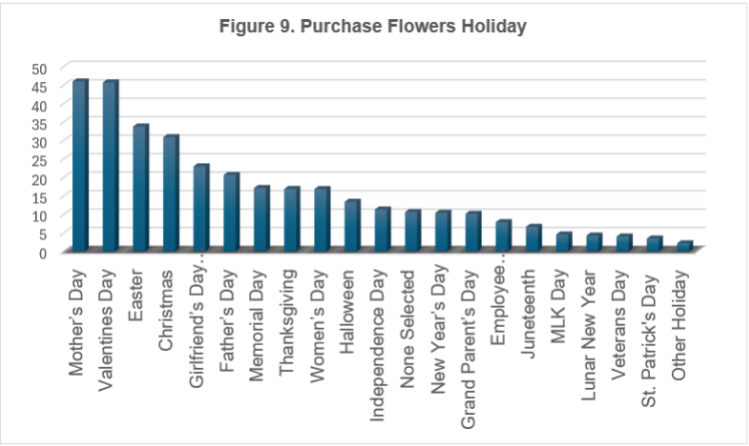




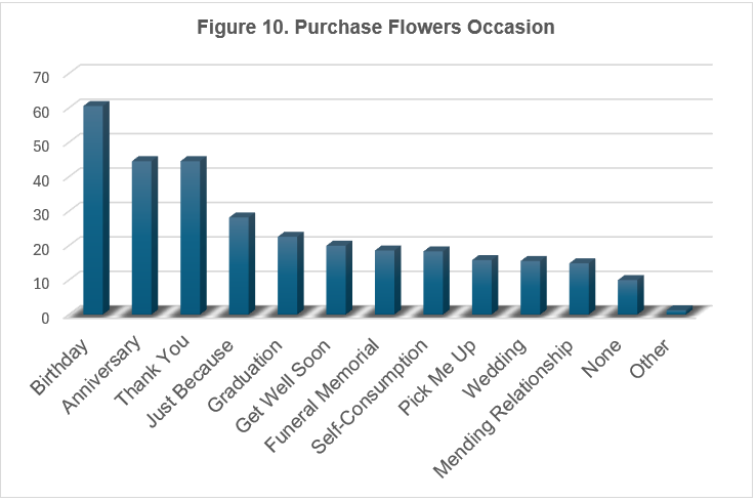


Seasonal patterns showed that flowers were most often purchased in spring (69.1%) and summer (61.6%), while fall (35.3%) and winter (27.1%) purchases were less common (Figure 8-1 to Figure 8-4).

Flower purchases were closely tied to holidays and occasions, with the top five holidays being Mother's Day (46.0%), Valentine's Day (45.8%), Easter (33.8%), Christmas (30.9%), and Girlfriend's Day (23.0%).



The top five occasions were birthdays (60.6%), anniversaries (44.6%), thank-you gestures (44.6%), "just because" (28.2%), and graduations (22.6%).



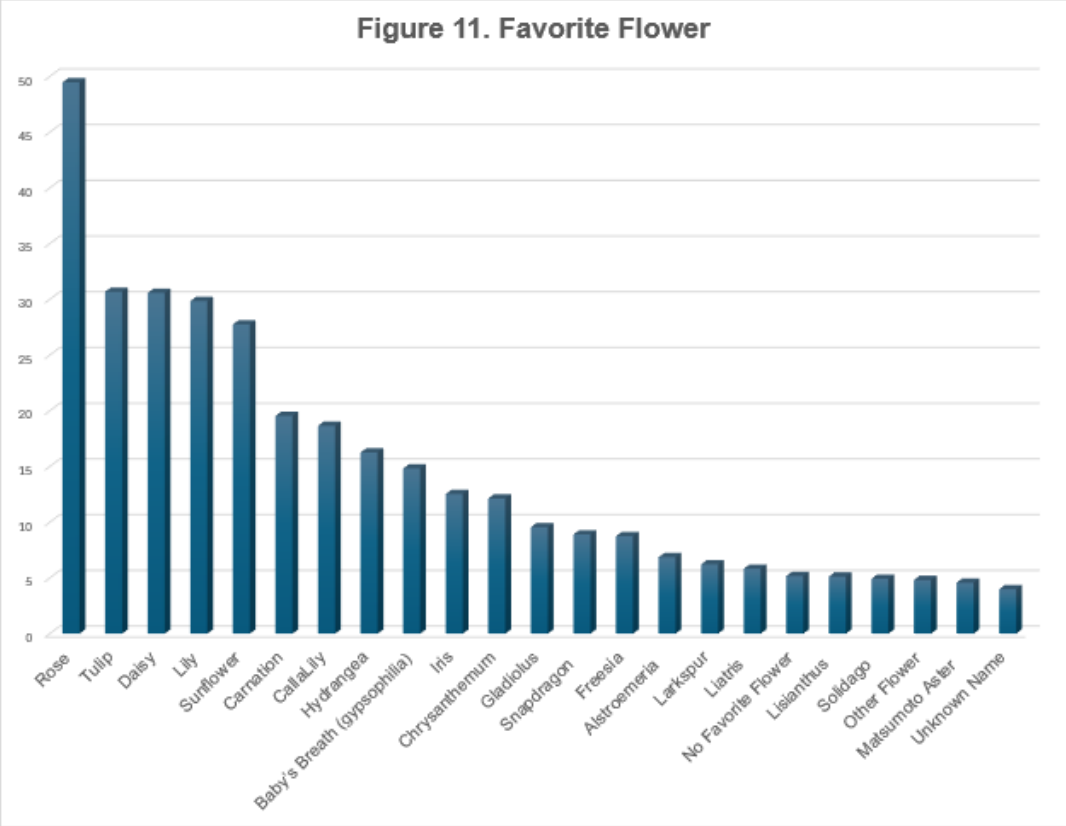
Spending patterns on floral products varied across flowers, plants, and accessories. For

flowers, most participants reported moderate expenditures, with about 20–21% spending either $49 or less or $100–$199, while 17.1% spent $200–$299 and 11.8% spent $300–$399. Only 4.1% reported spending $500 or more, and 7.4% did not buy flowers at all. Plant spending showed a similar distribution, with nearly one-quarter (23.0%) spending $49 or less, 21.4% spending $50–$99, and 20.8% spending $100–$199.

A smaller proportion reported higher expenditures, with 12.0% spending $200–$299, 6.5% spending $300–$399, and 3.0% spending $500 or more; 13.1% did not buy plants. Floral accessory spending was slightly more concentrated in the lower ranges, with 24.8% spending $49 or less, 18.9% spending $50–$99, and 19.7% spending $100–$199. About 12.7% reported spending $200–$299, 7.1% $300–$399, and 3.2% $500 or more, while 13.7% reported no accessory purchases.

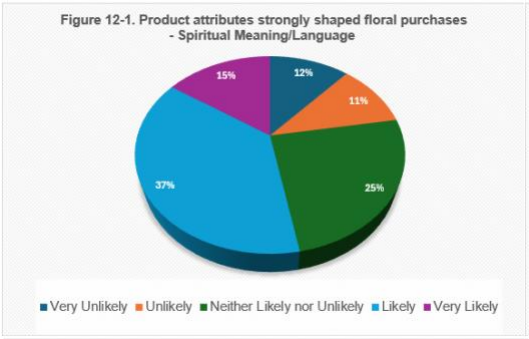
Overall, expenditures tended to cluster in the $49–$199 range across all product categories, with relatively few participants reporting very high spending.

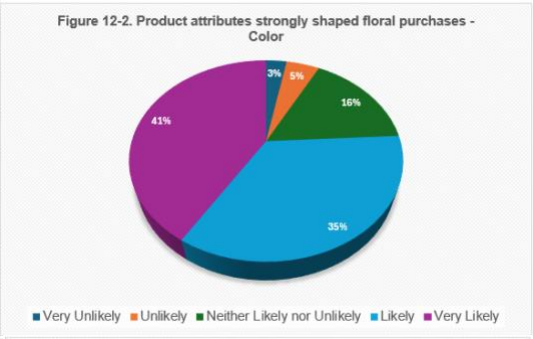
Unsurprisingly, **Roses were the most frequently selected favorite flower** (49.5%), followed by tulips (30.7%), daisies (30.6%), lilies (29.8%), and sunflowers (27.8%).

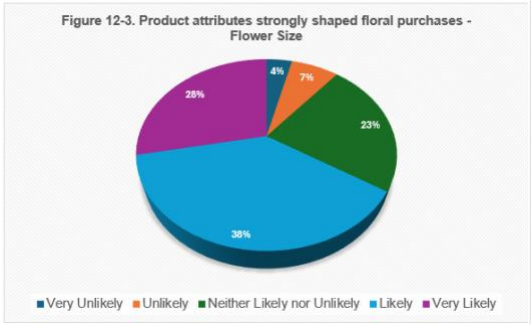


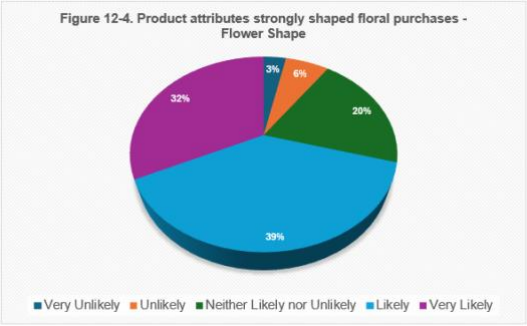
Participants reported that several product attributes strongly influenced their floral purchasing decisions. **Freshness emerged as the most influential factor**, with 78.2% indicating it was likely or very likely to affect their choices.

Color (75.9%), flower size (65.9%), and flower shape or design style (70.6%) were also highly influential.









Price was another key driver, with 70.0% rating it as likely or very likely to impact their decision. Fragrance (68.7%), aesthetics (65.3%), and flower longevity (65.3%) were similarly important considerations. In contrast, spiritual meaning or symbolic language played a more modest role, with just over half (52.9%) identifying it as likely or very likely to influence purchasing.

Overall, freshness, visual appeal, and cost were the most critical factors shaping floral consumer preferences.

Table 2. Floral experience in the past year

	N	%
Flower Purchase Store		
Independent flower Shops	470	23.37
Grocery Stores	731	36.35
Box Stores	417	20.74
Farm-Direct	41	2.04
Flower Nurseries	168	8.35
Other	1	0.05
I did not buy flowers in physical stores	183	9.1

Flowers, Online Purchase		
0 times	683	33.96
1 time	338	16.81
2-3 times	636	31.63
4-5 times	245	12.18
6+ times	109	5.42
Flowers, Social Media Purchase		
0 times (1)	895	44.51
1 time (2)	384	19.09
2-3 times (3)	409	20.34
4-5 times (4)	225	11.19
6+ times (5)	98	4.87
Flowers, Store Purchase		
0 times (1)	224	11.14
1 time (2)	263	13.08
2-3 times (3)	701	34.86
4-5 times (4)	470	23.37
6+ times (5)	353	17.55
Plants, Online Purchase		
0 times (1)	785	39.11
1 time (2)	368	18.34
2-3 times (3)	496	24.71
4-5 times (4)	268	13.35
6+ times (5)	90	4.48
Plants, Social Media Purchase		
0 times (1)	935	46.73
1 time (2)	349	17.44
2-3 times (3)	419	20.94
4-5 times (4)	207	10.34
6+ times (5)	91	4.55
Plants, Store Purchase		
0 times (1)	377	18.91
1 time (2)	384	19.26

2-3 times (3)	635	31.85
4-5 times (4)	394	19.76
6+ times (5)	204	10.23
0 times (1)	377	18.91
Purchase Flowers in Spring		
No	622	30.93
Yes	1389	69.07
Purchase Flowers in Summer		
No	773	38.44
Yes	1238	61.56
Purchase Flowers in Fall		
No	1301	64.69
Yes	710	35.31
Purchase Flowers in Winter		
No	1466	72.9
Yes	545	27.1
Purchase Flowers Holiday (Yes vs. No)		
Mother’s Day	925	46.00
Valentines Day	920	45.75
Easter	680	33.81
Christmas	622	30.93
Girlfriend’s Day (August 1)	463	23.02
Father’s Day	416	20.69
Memorial Day	345	17.16
Thanksgiving	340	16.91
Women’s Day	339	16.86
Halloween	270	13.43
Independence Day	228	11.34
None Selected	214	10.64
New Year’s Day	210	10.44
Grand Parent’s Day	205	10.19
Employee Appreciation Day	159	7.91
Juneteenth	134	6.66

MLK Day	92	4.57
Lunar New Year	86	4.28
Veterans Day	81	4.03
St. Patrick's Day	70	3.48
Other Holiday	44	2.19
Purchase Flowers Occasion (Yes vs. No)		
Birthday	1218	60.57
Anniversary	896	44.55
Thank You	896	44.55
Just Because	567	28.19
Graduation	454	22.58
Get Well Soon	402	19.99
Funeral Memorial	374	18.60
Self-Consumption	369	18.35
Pick Me Up	318	15.81
Wedding	313	15.56
Mending Relationship	299	14.87
None	201	10.00
Other	25	1.24
Flower Expense		
$49 or less	407	20.24
$50 - $99	375	18.65
$100 - $199	418	20.79
$200 - $299	343	17.06
$300 to $399	238	11.83
$500 or more	82	4.08
I did not buy any	148	7.36
Plant Expense		
$49 or less	463	23.02
$50 - $99	431	21.43
$100 - $199	419	20.84
$200 - $299	242	12.03
$300 to $399	131	6.51
$500 or more	61	3.03

I did not buy any	264	13.13
Floral Accessory Expense		
$49 or less	498	24.76
$50 - $99	379	18.85
$100 - $199	396	19.69
$200 - $299	256	12.73
$300 to $399	143	7.11
$500 or more	64	3.18
I did not buy any	275	13.67
Received Flowers from Peers		
Once	264	13.13
Twice	385	19.14
3 times	450	22.38
4 times	254	12.63
5 times	144	7.16
6 times	121	6.02
None	393	19.54
Favorite Flower (Yes vs. No)		
Rose	995	49.48
Tulip	617	30.68
Daisy	615	30.58
Lily	600	29.84
Sunflower	558	27.75
Carnation	393	19.54
CallaLily	375	18.65
Hydrangea	327	16.26
Baby’s Breath (gypsophilia)	298	14.82
Iris	252	12.53
Chrysanthemum	244	12.13
Gladiolus	192	9.55
Snapdragon	179	8.9
Freesia	176	8.75
Alstroemeria	138	6.86
Larkspur	125	6.22

Liatris	117	5.82
No Favorite Flower	104	5.17
Lisianthus	103	5.12
Solidago	99	4.92
Other Flower	97	4.82
Matsumoto Aster	92	4.57
Unknown Name	80	3.98
Spiritual Meaning/Language		
Very Unlikely	232	11.54
Unlikely	216	10.74
Neither Likely nor Unlikely	499	24.81
Likely	754	37.49
Very Likely	310	15.42
Color		
Very Unlikely	59	2.93
Unlikely	95	4.72
Neither Likely nor Unlikely	331	16.46
Likely	697	34.66
Very Likely	829	41.22
Flower Size		
Very Unlikely	77	3.83
Unlikely	143	7.11
Neither Likely nor Unlikely	465	23.12
Likely	760	37.79
Very Likely	566	28.15
Flower Shape		
Very Unlikely	66	3.28
Unlikely	128	6.36
Neither Likely nor Unlikely	398	19.79
Likely	773	38.44
Very Likely	646	32.12
Design Style		
Very Unlikely	66	3.28

Unlikely	128	6.36
Neither Likely nor Unlikely	398	19.79
Likely	773	38.44
Very Likely	646	32.12
Price		
Very Unlikely	71	3.53
Unlikely	126	6.27
Neither Likely nor Unlikely	407	20.24
Likely	704	35.01
Very Likely	703	34.96
Freshness		
Very Unlikely	48	2.39
Unlikely	79	3.93
Neither Likely nor Unlikely	311	15.46
Likely	717	35.65
Very Likely	856	42.57
Fragrance		
Very Unlikely	74	3.68
Unlikely	141	7.01
Neither Likely nor Unlikely	415	20.64
Likely	675	33.57
Very Likely	706	35.11
Aesthetic		
Very Unlikely	74	3.68
Unlikely	140	6.96
Neither Likely nor Unlikely	484	24.07
Likely	675	33.57
Very Likely	638	31.73
Flower Longevity (e.g., vase life)		
Very Unlikely	74	3.68
Unlikely	140	6.96
Neither Likely nor Unlikely	484	24.07
Likely	675	33.57

Very Likely	638	31.73

Note.

Q9–Q11 cover purchasing locations (physical stores, online storefronts, social media platforms) for flowers and plants; Q12–Q14 focus on seasonal, holiday, and occasion-based flower purchases; Q15 addresses total expenses for flowers, plants, and floral accessories; Q17 and Q18 ask about receiving flowers and favorite flowers; and Q19 examines factors influencing floral purchasing decisions (e.g., meaning, color, price, freshness, fragrance, and longevity).

Expectations for Flowers

Participants expressed generally positive expectations for flowers across multiple value dimensions. On a five-point Likert scale, the highest-rated dimension was emotional conditioning (M = 3.93, SD = 0.72), suggesting that many Gen Z consumers view flowers as meaningful for enhancing or regulating emotions. Sensory hedonics (M = 3.89, SD = 0.71) and curiosity fulfillment (M = 3.88, SD = 0.76) were also rated highly, indicating that flowers are valued both for their sensory appeal and their ability to stimulate interest or novelty. These findings align with prior research showing that different consumer groups may emphasize distinct aspects of floral consumption values (Yeh & Huang, 2009), such as emotional versus aesthetic or experiential benefits.

Table 3. Expectations for Flowers

	N	Mean	SD
Sensory hedonics	2011	3.89	0.71
Emotion condition	2011	3.93	0.72
Curiosity fulfills	2011	3.88	0.76

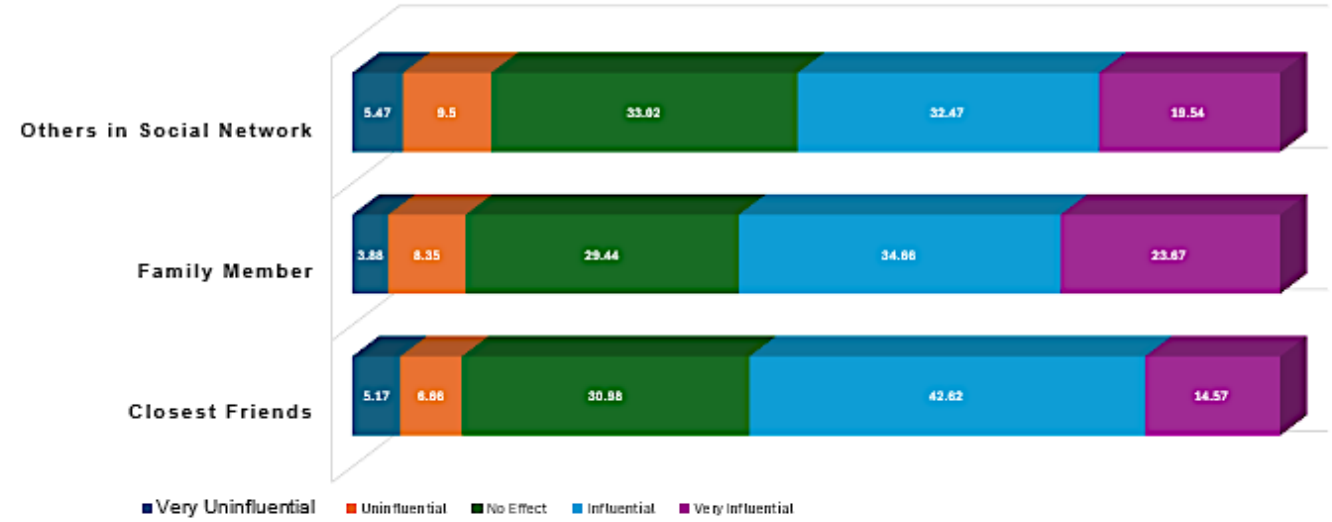
Note.

Expectations for Flowers include three scales: Sensory hedonics (4 items); Emotion condition (4 items); and Curiosity fulfills (3 items) based on 5-Likert scale (1=Strongly disagree and 5=Strong agree) (Yeh & Huang, 2009).

References and/or Referrals for Purchasing

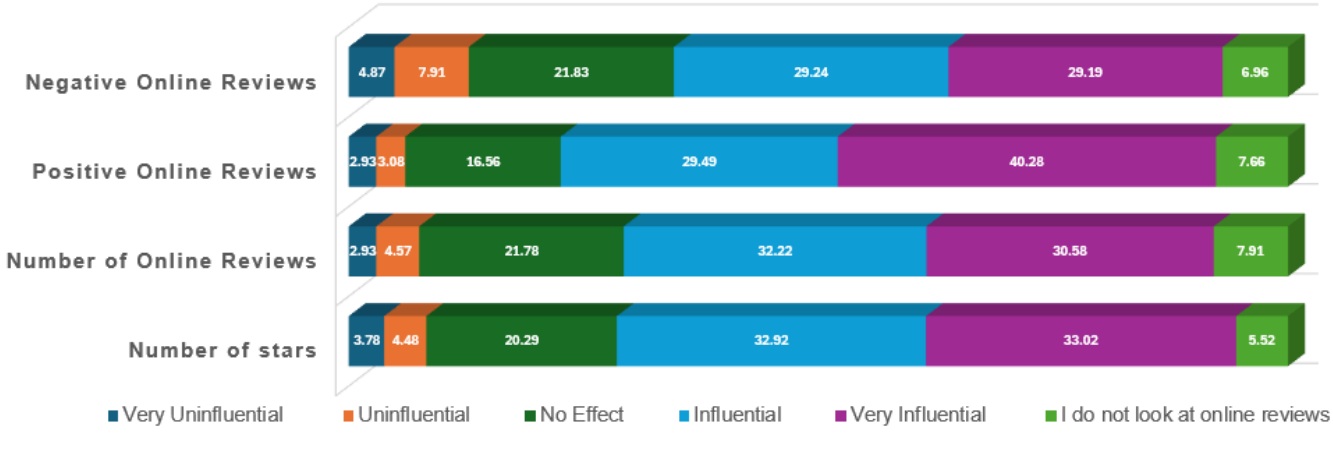
Participants reported being influenced by a variety of personal, social, and online reference sources when making floral purchasing decisions. Among interpersonal influences (Figure 13), family members (58.3% influential/very influential) and closest friends (57.2%) were particularly impactful, followed by others in their broader social networks (52.0%).

Figure 13. References and/or Referrals for Purchasing



Online reviews (Figure 14) also played an important role: positive reviews were rated most influential (69.8%), followed by review star ratings (66.0%), number of reviews (62.8%), and negative reviews (58.4%).

Figure 14. Influence of Online Reviews on Purchasing



Social and psychological benefits of flowers also shaped decision-making, with a strong emphasis on receiver benefit (67.7% influential/very influential), emotional/mental benefit (64.3%), and physical benefit (64.3%). Social benefit was somewhat less emphasized (50.5%). Overall, floral purchasing decisions were shaped by a mix of subjective norms (friends, family, and social networks), informational cues (online reviews), and perceived benefits of flowers, reflecting both interpersonal and experiential drivers of consumption (Figure 15).

Figure 15. Perceived Benefits Influencing Purchase Decisions

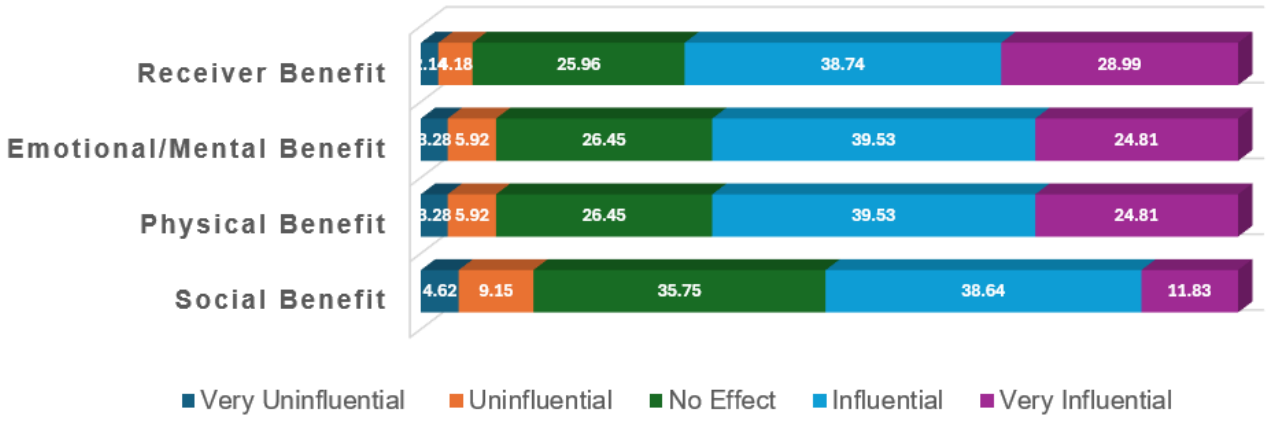


Table 4. References and/or Referrals for Purchasing – Frequencies

	N	%
Closest Friends		
Very Uninfluential	104	5.17
Uninfluential	134	6.66
No Effect	623	30.98
Influential	857	42.62
Very Influential	293	14.57
Family Member		
Very Uninfluential	78	3.88
Uninfluential	168	8.35
No Effect	592	29.44
Influential	697	34.66
Very Influential	476	23.67

Others in Social Network		
Very Uninfluential	110	5.47
Uninfluential	191	9.5
No Effect	664	33.02
Influential	653	32.47
Very Influential	393	19.54
Number of stars		
Very Uninfluential	76	3.78
Uninfluential	90	4.48
No Effect	408	20.29
Influential	662	32.92
Very Influential	664	33.02
I do not look at online reviews	111	5.52
Number of Online Reviews		
Very Uninfluential	59	2.93
Uninfluential	92	4.57
No Effect	438	21.78
Influential	648	32.22
Very Influential	615	30.58
I do not look at online reviews	159	7.91
Positive Online Reviews		
Very Uninfluential	59	2.93
Uninfluential	62	3.08
No Effect	333	16.56
Influential	593	29.49
Very Influential	810	40.28
I do not look at online reviews	154	7.66
Negative Online Reviews		
Very Uninfluential	98	4.87
Uninfluential	159	7.91
No Effect	439	21.83
Influential	588	29.24
Very Influential	587	29.19

I do not look at online reviews	140	6.96
Social Benefit		
Very Uninfluential	93	4.62
Uninfluential	184	9.15
No Effect	719	35.75
Influential	777	38.64
Very Influential	238	11.83
Physical Benefit		
Very Uninfluential	66	3.28
Uninfluential	119	5.92
No Effect	532	26.45
Influential	795	39.53
Very Influential	499	24.81
Emotional/Mental Benefit		
Very Uninfluential	66	3.28
Uninfluential	119	5.92
No Effect	532	26.45
Influential	795	39.53
Very Influential	499	24.81
Receiver Benefit		
Very Uninfluential	43	2.14
Uninfluential	84	4.18
No Effect	522	25.96
Influential	779	38.74
Very Influential	583	28.99

Note.

Closest Friends; family members; and others in social network were measure by the question “Q21 The following questions ask about how floral product purchases of your closest friends, family members and others in your social network may influence your own purchases (Xu et al., 2022).” Number of stars; Number of Online Reviews; Positive Online Reviews; and Negative Online Reviews were measured by the question “How influential would you say the following factors related to online reviews are in your decision to purchase flowers at a specific florist, grocery floral dept., etc. (Maslowska et al., 2017; Von Helversen et al., 2018)?” Social Benefit; Physical Benefit; Emotional/Mental Benefit; and Receiver Benefit were measured by the question “Q23 Please indicate how different benefits of flowers may influence your

decision to purchase flowers." (Rihn & Behe, 2023) All scales were based on 5-point Likert questions (1= Very Uninfluential and 5 = Very Influential).

The mean values for the Sources of References questions are shown in Table 5. Participants rated a range of interpersonal and benefit-related factors as influential in their floral purchasing decisions. Among interpersonal sources, family members had the strongest influence (M = 3.66, SD = 1.05), followed by closest friends (M = 3.55, SD = 0.99) and others in their social network (M = 3.51, SD = 1.08). Benefits associated with flowers were rated even more influential. The highest-rated was receiver benefit (M = 3.88, SD = 0.95), highlighting the importance of how flowers are perceived by recipients. This was followed by emotional/mental benefit (M = 3.77, SD = 1.00) and physical benefit (M = 3.63, SD = 1.01). Social benefit was rated somewhat lower (M = 3.44, SD = 0.97), though still above the midpoint of the scale. Overall, these findings suggest that decisions to purchase flowers are shaped both by social norms (particularly family influence) and by the anticipated benefits flowers provide, especially emotional uplift and positive experiences for recipients.

Table 5. Sources of References – Means

	N	Mean	SD
Closest Friends	2011	3.55	0.99
Family Member	2011	3.66	1.05
Others in Social Network	2011	3.51	1.08
Social Benefit	2011	3.44	0.97
Physical Benefit	2011	3.63	1.01
Emotional/Mental Benefit	2011	3.77	1.00
Receiver Benefit	2011	3.88	0.95

Note.

Please refer to the note in Table 4 for details about the scales.

Sustainability and Eco-Friendly Practices

Gen Z population reported a moderate-to-high orientation toward sustainability and eco-friendly practices in floral products, with a mean score of 3.53 (SD = 0.71) on the 8-item, 5-point Ecologically Conscious Buying Behavior (ECCB) scale (1 = Strongly Disagree, 5 = Strongly Agree). This suggests that **Gen Z consumers generally agree that environmental considerations influence their purchasing decisions**. These findings are consistent with prior research indicating that young consumers' eco-friendly purchasing is shaped by environmental knowledge, perceived effectiveness, and concern (Heo & Muralidharan, 2019). Overall, the data underscores the growing importance of sustainability in shaping consumer expectations in the Gen Z demographic, highlighting that floral retailers aiming to appeal to this market may benefit from emphasizing eco-friendly sourcing, packaging, and practices.

Table 6. Sustainability and Eco-Friendly Practices

	N	Mean	SD
Ecologically Conscious Buying Behavior (ECCB)	2011	3.53	0.71

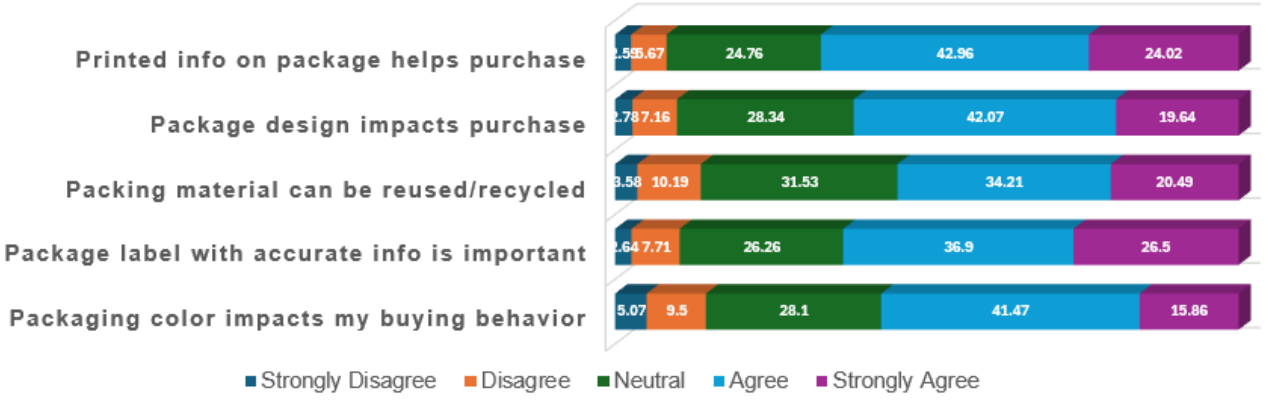
Note.

ECCB: 5-Likert Ecologically Conscious Buying Behavior Scale (8 items with 1= Strongly Disagree and 5 = Strongly Agree) (Heo & Muralidharan, 2019).

Personalization and Customization

Survey results indicate that packaging plays a notable role in Gen Z consumers' floral purchasing decisions. While packaging color showed a moderate influence (41% agreed, 16%

Figure 15. Perceptions of Packaging Personalization and Customization



strongly agreed), package design had a stronger impact, with 42% agreeing and 20% strongly agreeing. Accurate package labeling was particularly valued, with nearly two-thirds (63%) agreeing or strongly agreeing. Similarly, printed information on packaging influenced decisions for 67% of respondents. Eco-consciousness also emerged as important: over half (55%) agreed or strongly agreed that it is important for packaging materials to be reusable or recyclable.

Table 7. Personalization and Customization – Frequencies

	N	%
The packaging color impacts my buying behavior		
Strongly Disagree	102	5.07
Disagree	191	9.5
Neutral	565	28.1
Agree	834	41.47
Strongly Agree	319	15.86
The package label with accurate information about the flowers is important for me		
Strongly Disagree	53	2.64
Disagree	155	7.71
Neutral	528	26.26
Agree	742	36.90
Strongly Agree	533	26.50
It is important to me that the packing material can be reused and recycled		
Strongly Disagree	72	3.58
Disagree	205	10.19
Neutral	634	31.53
Agree	688	34.21
Strongly Agree	412	20.49
The package design has an impact on me during my purchase		
Strongly Disagree	56	2.78
Disagree	144	7.16
Neutral	570	28.34
Agree	846	42.07
Strongly Agree	395	19.64

The printed information on the package helps me to purchase the specific product		
Strongly Disagree	52	2.59
Disagree	114	5.67
Neutral	498	24.76
Agree	864	42.96
Strongly Agree	483	24.02

Note.

The five product packaging related questions were measured with a 5-item 5-point Likert scale (1= Strongly Disagree, 5 = Strongly Agree) (Zhao et al., 2021).

The mean values for the Product packaging questions are shown in Table 8. Gen Z population demonstrated a moderately strong preference for personalization and customization in floral products, particularly regarding product packaging. On the 5-point scale assessing product packaging (1 = Strongly Disagree, 5 = Strongly Agree), the sample of 2,011 Gen Zs reported a mean score of 3.67 (SD = 0.68), indicating general agreement that customized, or thoughtfully packaged products enhance their purchasing appeal. **These findings suggest that offering personalization options—such as specialty arrangements, unique packaging, or tailored product features—can play a meaningful role in shaping Gen Z's floral preferences**, aligning with research showing that product information and customization influence consumer satisfaction and buying behavior (Zhao et al., 2021).

Table 8. Personalization and Customization

	N	Mean	SD
Product packaging	2011	3.67	0.68

Note.

Please refer to the note in Table 7 for details about the 5-Likert Product packaging scale.

Pricing and Affordability

Pricing and affordability strongly influenced Gen Z customers' floral purchasing behavior. A majority compared prices across stores (63% agreed/strongly agreed) and sought to maximize quality for money spent (69% agreed/strongly agreed).

Time costs were less clear: responses were divided on whether searching for low prices was worthwhile, with about 45% agreeing/strongly agreeing and 26% disagreeing/strongly disagreeing.

Sales and special offers were highly motivating, with nearly three-quarters (73%) reporting they were influenced by promotions.

Figure 16. Perceived Pricing and Affordability when purchasing flowers

Table 9. Pricing and Affordability – Frequencies

	N	%
I compare the prices of different stores to be sure I get the best value for the money		
Strongly Disagree	65	3.23
Disagree	176	8.75
Neutral	506	25.16
Agree	883	43.91
Strongly Agree	381	18.95

I always try to maximize the quality I get for the money I spend		
Strongly Disagree	30	1.49
Disagree	112	5.57
Neutral	476	23.67
Agree	793	39.43
Strongly Agree	600	29.84
The time it takes to find low prices is usually not worth the effort		
Strongly Disagree	144	7.16
Disagree	371	18.45
Neutral	587	29.19
Agree	566	28.15
Strongly Agree	343	17.06
I am motivated by sales or special offers		
Strongly Disagree	34	1.69
Disagree	81	4.03
Neutral	422	20.98
Agree	942	46.84
Strongly Agree	532	26.45

Note.

Pricing and Affordability scale consists of four 5-point Likert items (1= Strongly Disagree, 5 = Strongly Agree) (Zhao et al., 2021).

The mean values for the **Pricing and Affordability** questions are shown in Table 10. Gen Z population indicated that pricing and affordability are important considerations when purchasing floral products, with a mean score of 3.70 (SD = 0.64) on the 5-point Pricing and Affordability scale (1 = Strongly Disagree, 5 = Strongly Agree).

This suggests that Gen Z consumers generally agree that cost influences their purchasing decisions. These results align with prior research showing that pricing and product information significantly affect consumer buying behavior and satisfaction (Zhao et al., 2021), highlighting the importance of offering competitively priced floral products for the college demographic.

Table 10. Pricing and Affordability - Means

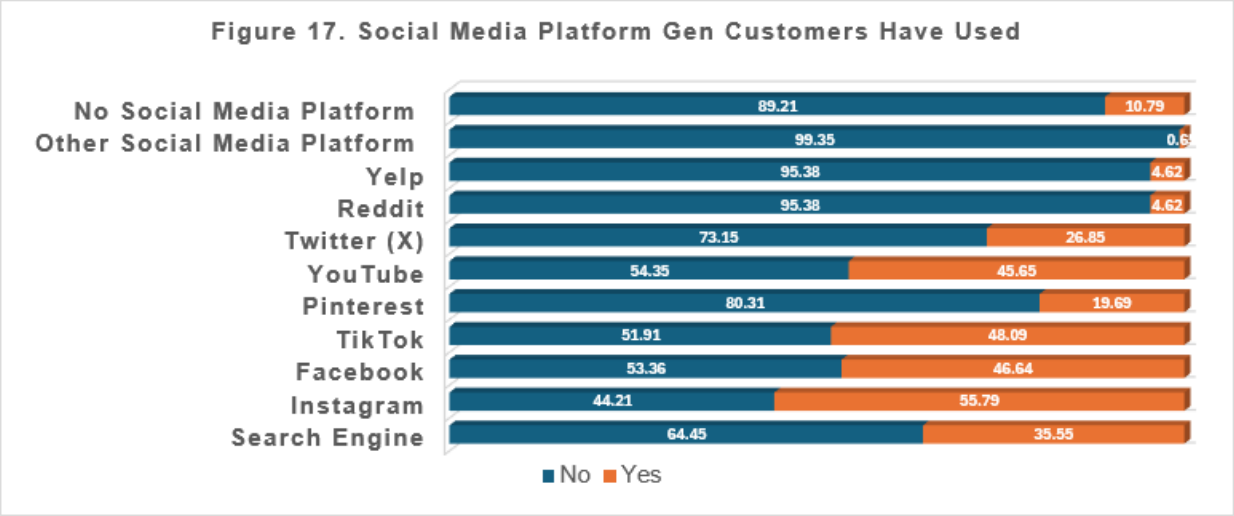
	N	Mean	SD
Pricing and Affordability	2011	3.70	0.64

Note.

Please refer to the note in Table 9 for details about the 5-Likert Pricing and Affordability scale.

Social Media/Digital and Brick-and-Mortar Influence on Floral Purchases

Gen Z's perceptions and choices regarding floral products are influenced by both social media and in-person shopping experiences (Table 11, Figure 17). **Among the 2,011 participants, Instagram was the most commonly used platform for floral-related information, with 55.8% of students reporting usage, followed by TikTok (48.1%) and Facebook (46.6%).**

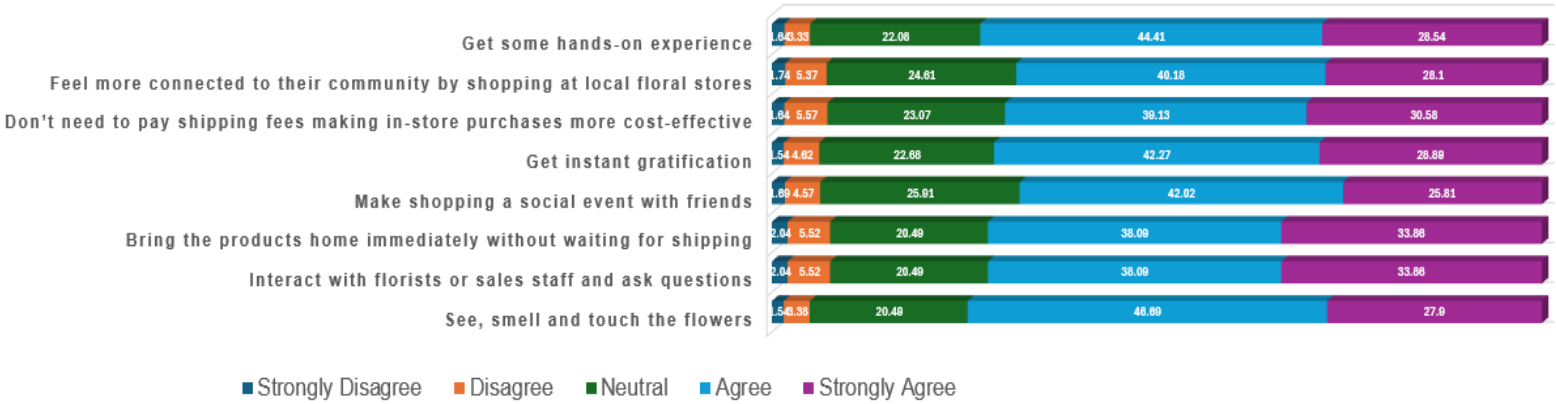


Less frequently used platforms included Pinterest (19.7%), YouTube (45.7%), Twitter/X (26.9%), Reddit (4.6%), and Yelp (4.6%). Overall, the data indicates that visual and interactive platforms, particularly Instagram and TikTok, play a key role in shaping Gen Z consumers' awareness and interest in floral products.

In addition to digital influence, **Gen Z reported strong appreciation for the advantages of brick-and-mortar floral retailers** (Table 11, Figure 18).

A majority agreed or strongly agreed that in-store shopping allows them to see, smell, and touch flowers (74.6%), interact with florists (71.9%), obtain products immediately (71.9%), make shopping a social event (67.8%), receive instant gratification (71.2%), avoid shipping costs (69.7%), feel more connected to the community (68.3%), and gain hands-on experience such as creating their own bouquets (72.9%).

Figure 18. Perceveid Advantages of Brick-and-mortar retailers



These findings highlight that while social media informs and inspires floral purchasing, the tangible, interactive, and experiential aspects of in-store shopping remain highly valued among Gen Z consumers.

Table 11. Use of Social Media Platform – Frequencies

	N	%
Search Engine		
No	1296	64.45
Yes	715	35.55
Instagram		
No	889	44.21
Yes	1122	55.79
Facebook		
No	1073	53.36
Yes	938	46.64
TikTok		
No	1044	51.91
Yes	967	48.09
Pinterest		
No	1615	80.31
Yes	396	19.69
YouTube		
No	1093	54.35
Yes	918	45.65
Twitter (X)		
No	1471	73.15
Yes	540	26.85
Reddit		
No	1918	95.38
Yes	93	4.62
Yelp		
No	1918	95.38
Yes	93	4.62
Other Social Media Platform		
No	1998	99.35
Yes	13	0.65

No Social Media Platform		
No	1794	89.21
Yes	217	10.79
Brick-and-mortar retailers		
Customers can see, smell and touch the flowers		
Strongly Disagree	31	1.54
Disagree	68	3.38
Neutral	412	20.49
Agree	939	46.69
Strongly Agree	561	27.9
Customers can interact with florists or sales staff and ask questions		
Strongly Disagree	41	2.04
Disagree	111	5.52
Neutral	412	20.49
Agree	766	38.09
Strongly Agree	681	33.86
Customers can bring the products home immediately without waiting for shipping		
Strongly Disagree	41	2.04
Disagree	111	5.52
Neutral	412	20.49
Agree	766	38.09
Strongly Agree	681	33.86
Customers can make shopping a social event with friends		
Strongly Disagree	34	1.69
Disagree	92	4.57
Neutral	521	25.91
Agree	845	42.02
Strongly Agree	519	25.81
Customers can get instant gratification		
Strongly Disagree	31	1.54
Disagree	93	4.62
Neutral	456	22.68

Agree	850	42.27
Strongly Agree	581	28.89
Customers don't need to pay shipping fees making in-store purchases more cost-effective		
Strongly Disagree	33	1.64
Disagree	112	5.57
Neutral	464	23.07
Agree	787	39.13
Strongly Agree	615	30.58
Customers may feel more connected to their community by shopping at local floral stores		
Strongly Disagree	35	1.74
Disagree	108	5.37
Neutral	495	24.61
Agree	808	40.18
Strongly Agree	565	28.10
Customers may get some hands-on experience (e.g., build your own bouquet)		
Strongly Disagree	33	1.64
Disagree	67	3.33
Neutral	444	22.08
Agree	893	44.41
Strongly Agree	574	28.54

Note.

Social media platforms were inquired by the question "Q28 What social media platform(s) do you get most of your information from when it comes to purchasing flowers? (please select all that apply)". Opinions about brick-and-mortar retailers were evaluated by "Q31 Despite the rapid growth of e-commerce, brick-and-mortar retailers will not disappear. From your perspective, what are the important pros of in-store shopping over online shopping when it comes to purchasing flowers (Dublino, 2024, September 9)".

Gen Z reported moderately high engagement with social media marketing related to floral products (Table 12). On a 5-point scale (1 = Strongly Disagree, 5 = Strongly Agree), Gen Z people indicated strong agreement for trendiness (M = 3.99, SD = 0.90), customization (M =

3.94, SD = 0.78), and purchase intention (M = 3.92, SD = 0.71), while satisfaction with social media interactions was slightly lower but still positive (M = 3.83, SD = 0.77). These findings suggest that social media platforms effectively influence students' perceptions of floral products, especially through trend-focused content and opportunities for customization, consistent with prior research on social media marketing and customer behavior (Wibowo et al., 2020). Together, these results indicate that while social media drives awareness, trendiness, and customization appeal remain an important factor in college students' floral purchasing behavior.

Table 12. Use of Social Media Platform – Means

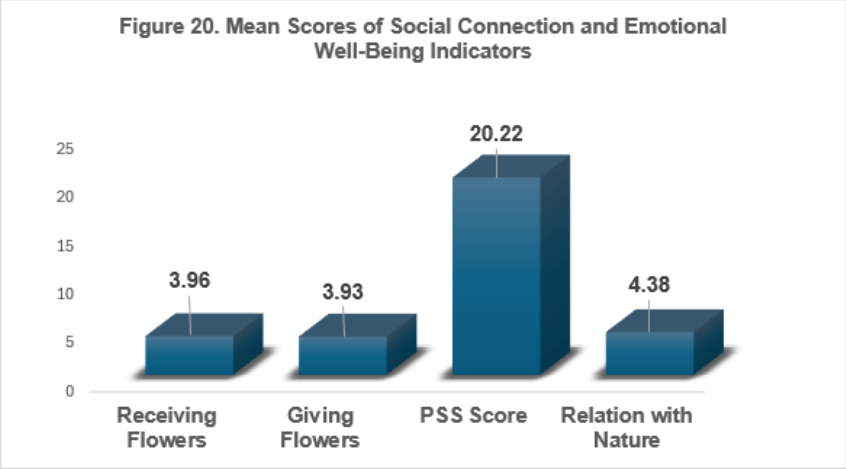
	N	Mean	SD
Intention	1794	3.92	0.71
Customization	1781	3.94	0.78
Trendiness	1733	3.99	0.90
Satisfaction	1786	3.83	0.77

Note.

Social Media Marketing Activities were assessed with three 5-point Likert scales (1 = Strongly Disagree to 5 = Strongly Agree): Intention (3 items), Customization (2 items), and Trendiness (1 item) (Wibowo et al., 2020). Satisfaction regarding the quality of relationship between Gen Z consumers and social media platforms was measured with a 3-item scale (1 = Strongly Disagree to 5 = Strongly Agree).

Mental Health and Emotional Wellbeing (Social connection)

Gen Z reported positive associations between flower-related activities and their mental health and emotional wellbeing.



On a 5-point scale (1 = Strongly Disagree, 5 = Strongly Agree), Gen Z indicated that receiving flowers (M = 3.96, SD = 0.69) and giving flowers (M = 3.93, SD = 0.68) contributed positively to their social connection. Additionally, Gen Z demonstrated a strong perceived relationship with nature (M = 4.38, SD = 1.53), which may further support emotional wellbeing (Martin & Czellar, 2016).

Perceived stress levels, assessed using the 10-item PSS scale, showed a mean score of 20.22 (SD = 5.44), with the majority of students (80.1%) falling within the moderate stress range, 10.1% reporting low stress, and 9.8% reporting high stress. These findings suggest that while Gen Z's experience moderate stress overall, **flower-related activities—both giving and receiving—along with connections to nature may provide meaningful emotional benefits and support social wellbeing.**

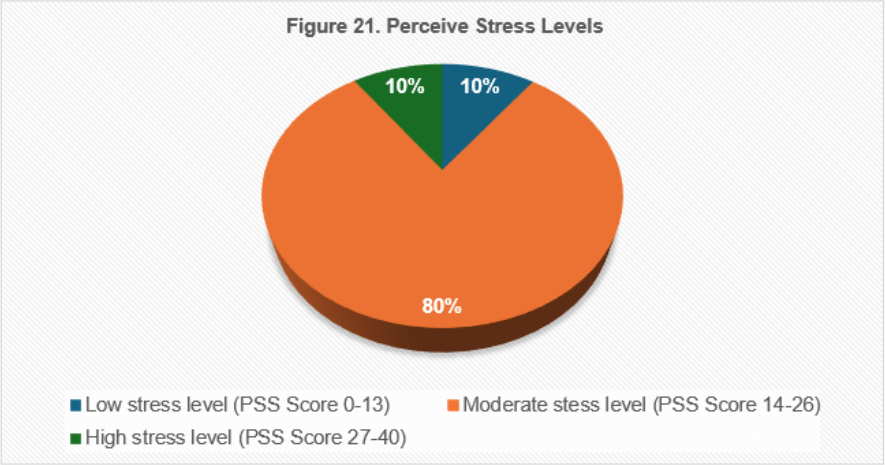


Table 13. Mental health and emotional wellbeing (Social connection)

	N	Mean	SD
Receiving Flowers	2011	3.96	0.69
Giving Flowers	2011	3.93	0.68
PSS Score	2011	20.22	5.44
Relation with Nature	2011	4.38	1.53

Note.

Flowers' influence on emotion was measured using a 5-item Receiving Flowers scale and a 5-item Giving Flowers scale (Haviland-Jones, 2018; Haviland-Jones et al., 2005). Perceived stress was measured with a 10-item, 5-point Likert Perceived Stress Scale (PSS) (Cohen et al., 1983). Relationship with the natural environment was assessed using the single-item Inclusion of Nature in Self scale *(Martin & Czellar, 2016)*.

Table 14. Perceive Stress Levels

	N	%
Low: PSS Score 0-13	203	10.09
Moderate: PSS Score 14-26	1611	80.11
High: PSS Score 27-40	197	9.80

Note.

Perceived stress was measured using the 10-item Perceived Stress Scale (PSS) (Cohen et al., 1983, 1994). Example items include: "In the past month, how often have you been upset because of something that happened unexpectedly?" and "In the past month, how often have you felt that you were unable to control the important things in your life?" Scores on the PSS range from 0 to 40, with higher scores indicating greater perceived stress. Scores of 0–13 are considered low stress, 14–26 moderate stress, and 27–40 high stress.

DISCUSSION

The findings of this study provide a nuanced view of Gen Z's engagement with floral products, revealing both continuity and change in consumer patterns. While traditional outlets such as grocery stores remain central, social media platforms have redefined how floral products are marketed and consumed. Platforms like Instagram and TikTok are not only sources of inspiration but also drivers of trends and personalization. These findings confirm the importance of a dual-channel approach that values both digital engagement and in-person retail experiences.

Affordability remains a critical concern for Gen Z. Many participants actively compare prices, maximize quality relative to cost, and report that promotions and sales influence their purchasing decisions. Interestingly, students expressed mixed views about the effort involved in bargain hunting, suggesting that while price is a motivator, convenience and time efficiency also play a role in shaping Gen Z consumer behavior.

Another central finding is the growing emphasis on sustainability and eco-consciousness. Recyclable packaging, accurate product labeling, and transparent sourcing significantly shape purchasing decisions, reflecting Gen Z's broader generational identity as value-driven consumers. Similarly, personalization in packaging design and labeling was shown to enhance purchasing appeal, underscoring the importance of customization in Gen Z consumer marketing.

Importantly, the results extend beyond Gen Z consumer preferences to demonstrate the psychosocial benefits of flowers. Both giving and receiving flowers were associated with positive emotions, stress reduction, and strengthened social connections. These findings align with biophilic design principles, which emphasize the psychological and physiological benefits of engaging with nature. Flowers, therefore, hold unique potential to serve as accessible, everyday wellness tools for young adults navigating stress and transitions in academic life.

CONCLUSION

This nationwide study provides the most comprehensive evidence to date on Generation Z's floral purchasing behaviors, preferences, and psychosocial benefits. The findings confirm that Gen Z is a value-driven generation, balancing affordability and convenience with sustainability, personalization, and wellness. Flowers are not only desirable consumer goods but also contributors to mental health, social connection, and emotional wellbeing. **For the floral industry**, these results present a unique opportunity to strengthen engagement with Gen Z by integrating digital marketing, eco-friendly practices, and personalized experiences into business models. **For higher education and public health**, flowers offer a low-cost, high-impact tool for promoting wellness and student success. Finally, **for researchers**, the study establishes a foundation for future work examining biophilic engagement and its role in health and education. By positioning flowers as both lifestyle products and wellness resources, stakeholders can ensure that floriculture remains relevant, sustainable, and impactful for the next generation of consumers.

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