Te Ngāngara | Limbic capitalism in Aotearoa

Young people, social media and unhealthy product marketing

A descriptive report on young people's Internet use and social media activity; exposure to marketing of vape, alcohol, and tobacco products on social media; engagement with this marketing; and vaping, drinking, and smoking behaviours.

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Executive summary

Young people actively use social media for many reasons, including for expressing identities, building and maintaining relationships with friends and whānau, connecting to broader social networks and engaging in civic, commercial, political, and cultural activities and issues of the day. Some have noted that not participating in life online can mean young people miss out on key areas of contemporary life. Our project, *Te Ngāngara: Social media and digital marketing,* sought to gain insight into digital lives, how young people connect to the internet and how they engage with social media platforms, including what platforms they use, how often they use them, and what they use them for. We were particularly interested in how much they see and engage with the marketing of legal psychoactive products – specifically alcohol, tobacco, and vape products – on social media. We explored changes in these activities through the Covid-19 lockdowns, and looked at drinking, smoking and vaping behaviours. The research employed an online survey, digital ethnographic interviews and in-depth group discussion methods, and culturally-relevant methodologies.

This report focuses on the survey findings. It provides an overview of the methods employed in undertaking the survey, a detailed description of the sample, and findings relating to respondents' Internet access and use, their social media activity, their exposure to social media marketing of vape, alcohol, and tobacco products, their engagement with this marketing, and vaping, drinking, and smoking behaviour.

Methods: The online survey was developed, piloted and then finalised. Its 6 sections explored demographics; internet access and use; social media content, use, and activity; marketing exposure and engagement; Covid-19 changes; drinking, smoking and vaping behaviours. The survey and data collection procedures were approved by a University ethics committee. Recruitment took place online and in high schools during 2022. In total 3698 respondents aged between 14 and 20 years (M=17) completed the survey. There were a range of gender identities, including 55% wahine/female, 39% tane/male, and 8% non-binary, transgender, agenda, fa'afafine, intersex, or something else. In terms of ethnicity, 67% identified as Pākehā or NZ European, 25% identified as Māori, 7% as Pasifika and 21% as another ethnicity.

Key findings: Respondents were highly engaged internet users. They accessed the internet through a range of hardware devices both inside and outside of the home, primarily using their own mobile phone. They were online a lot of the time, with 97% reported using the internet several times a day or almost constantly. They were also high users of social media platforms, using between 1-19 different platforms in the past month (mean=5.1; median = 6). The most commonly used platforms were Instagram (92%), YouTube (86%), Snapchat (73%), TikTok (72%), and Facebook (68%).

Instagram and TikTok were used more than other platforms to comment, tag, react, and like content. For creating and sharing their own content, participants used Instagram and Snapchat, and to a lesser extent TikTok. For chatting with friends, whānau, and family, Snapchat was used by over three-quarters of the respondents. On the social media platforms they used frequently, 35% reported seeing vape product marketing, 43% saw alcohol marketing, and 11% saw tobacco marketing, primarily on Instagram, YouTube and TikTok. A subset of these participants also engaged with this marketing content in various ways. Within the sample, 51% of young people reported having ever vaped, 69% had drunk alcohol, and 22% had smoked at least one cigarette.

Conclusions: Findings show that young people in Aotearoa are highly connected to the internet and are online for much of their time. They actively use multiple social media platforms, and some platforms are used continuously throughout the day. Many young people reported seeing alcohol and vape products ads within their social media feeds, and some engage with this marketing in a range of ways.

About the project

Young people actively use social media to form and express their identities (boyd, 2014; Dobson et al., 2018), develop intimate friendships (Bennett & Robards, 2014; Niland et al., 2015), maintain relationships with whānau (O'Carroll, 2013), connect to broader social networks (Bennett & Robards, 2014; boyd, 2014), and engage in civic, commercial, political, and cultural activities and issues of the day (Goodwin, 2011). Such is the extent of social media engagement that participation has become all but mandatory for many young people (Robards, 2014). Not participating means they miss out on key arenas of contemporary life where they can exercise considerable autonomy and self-determination (Goodwin, 2011; O'Carroll, 2013), that impact identity, self-efficacy, and general wellbeing. These opportunities for agency are important in the colonial context of Aotearoa, where the distinct needs and interests of young people, particularly Māori, often go unrecognised and under-served (Goodwin, 2011; O'Carroll, 2013).

Our project explored the digital landscapes that enable the algorithmically targeted marketing of legal psychoactive products, particularly alcohol, tobacco, and vapes, to young people. The purposive design, production, marketing, and sale of such products that stimulate habitual consumption and pleasure to maximise profit has been called 'limbic capitalism' (Courtwright, 2019). Corporations have been said to intentionally cultivate people's habitual use of these highly addictive products that stimulate the limbic system of the brain, the part of the brain that is linked to pleasure and emotions, to maximise their profits (Babor et al, 2022) despite overwhelming evidence that they have serious negative impacts on people's health (Courtwright, 2019; Lyons et al, 2023).

We have argued that marketing of legal but psychoactive products on social media intensifies limbic capitalism processes because social media platforms, and the smartphones that they are hosted on, are also designed using a "limbic model of capturing attention, stimulating and exploiting circuits in the limbic brain" (Lyons et al., 2023, p.180). Social media marketing is more effective than more traditional forms, because social media platforms operate by converting the online activities of individual social lives into data. Limbic marketing processes the data to target individual users via machine learning based on their preferences, their behaviours, and their feelings (including pleasure and escape) in ways that sustain their attention, and that can pre-empt, shape, exploit and nudge their behaviours (Cohen, 2020).

This research sought to explore how young people manage their digital worlds in Aotearoa New Zealand, and how they engage with and respond to unhealthy commodity marketing online. It was designed to:

- examine young (14-20 years) people's Internet use and social media practices
- identify how digital marketing of alcohol, tobacco, and vape products gains their attention
- explore how social media encourage compulsive use, addictive behaviours, and consumption-based identity work
- examine what strategies young people use to navigate and resist digital marketing

We used an online survey, digital ethnographic interviews and in-depth discussion methods, and culturally-relevant methodologies, to explore how experiences vary across key social and ethnic groups. This report focuses on the survey findings. It provides an overview of the methods employed in undertaking the survey, a detailed description of the sample, and findings relating to their Internet access and use, their social media activity, their exposure to social media marketing of vape, alcohol, and tobacco products, their engagement with this marketing, and vaping, drinking, and smoking behaviour. We have a companion report, *Te Ngāngara - Limbic capitalism in Aotearoa: Māori youth (14-20 years), social media and unhealthy product marketing* (April, 2024) that reports on findings with Māori young people who completed the survey.

Survey methods

A survey was designed to identify the digital landscape of young people's lives and how it impacts on their exposures to alcohol, vape, and tobacco marketing. The survey asked young people about their access to and use of the Internet, the social media platforms they use, the devices and technologies they employ, their extent of engagement on social media platforms, and their motivations for different engagements, platforms, and activities. We also explored how their social media practices changed during and after the Covid-19 pandemic and lockdowns.

Development of the survey

Following extensive discussion within the research group, reviewing of relevant literature, and discussion and feedback from Māori and non-Māori young advisors, a draft survey was developed in Qualtrics. The survey was piloted among the research team multiple times to ensure the flow and logic of questions worked. It was then piloted with a range of young people of different ages, backgrounds, and ethnicities. This involved one of the research team sitting with the young person while they completed the survey online and talking through any difficulties they encountered, any questions that were hard to understand, any formatting issues, and any questions that didn't work. Revisions were made to the survey based on this piloting (primarily around question framing, responses, prioritising te reo Māori as well as marginalised identities). The final version of the survey had six main sections as described below. The full survey is provided in Appendix A.

1. *Demographics*
   Questions asked for participants' age, gender (multiple responses allowed), ethnicity (multiple responses allowed), ethnic group they most strongly associate with, culture they most strongly identify with, sexuality (multiple responses allowed), student status (including part or full-time study; at high school, kura, university, wānanga, other; year of study), work/employment status, living situation (who lives in the household), geographic residence (rural/urban, part of NZ), parental status (if a parent, number of children), caregiver status, perceived socio-economic status (based on Svedberg et al., 2016), and languages spoken.

2. *Internet access and use*
   Questions focused on the devices participants used to connect to the Internet at home and when not at home, the type of Internet connection they have at home (broadband; mobile; if no connection, why?), how often they use the Internet, how much time they spend on the Internet on a normal day, the capacity of their main source of Internet connection, who pays for this, and what device they mostly use to connect to the Internet.

3. *Social media content, use, and activity*
   We asked participants about the social media platforms they have used in the past month, and responses to this question were inserted for all subsequent questions about their social media use, including how often they use each platform, how much time they spend on each platform, what they normally do on each platform, who they interact with on each platform, their main reasons for using each platform, their favourite platform and why (open response), whether there were any platforms they dislike but keep using and why (open response), and whether there were any platforms they had stopped using and why (open response).

   Participants were then asked about whether they follow "accounts on social media that create content in particular areas that you're interested in, and that have a reputation for their content (e.g. artists, celebrities, groups, events, peers)" and were asked to list up to three of their favourite accounts. The accounts given in response were inserted for further questions about what platforms they follow them on and what kind of content is shared on these accounts.

Participants were also asked if Māori content was important to them in their social media use, and if so what type of Māori content they engage with (open response), and why it is important to them (open response).

4. *Social media marketing exposure and engagement*
   To cover one of the key areas of investigation, participants were asked if they recalled seeing any vape product advertising on each of the social media platforms they reported using frequently, and then asked if they had engaged with vape products online, specifically if they had:
   - Liked a vape brand on social media
   - Shared something related to a vape brand, such as a status, picture, or video
   - Followed a vape brand on social media
   - Entered a competition linked to a vape brand on social media
   - Searched for vape adverts on websites or social media
   - Used an image filter or effect related to vaping
   - Engaged with other vape brand content
   - Purchased vape products online
   - Had any other engagement with vape brands (open responses)

   Participants were then asked to think about the accounts on social media that they follow because they're interested in their content and whether these accounts had shared information about a vape brand; shared something related to a vape brand, such as a status, picture, or video; shared content of themselves vaping; and/or shared other vaping content and what that was.

   These questions were repeated for the two other areas of investigation: alcohol advertising and alcohol brand engagement; and for tobacco products and tobacco brand engagement. They were then asked whether they had uploaded pictures or videos of themselves vaping, drinking alcohol, or smoking, and whether other people have uploaded pictures or videos of the participant vaping, drinking alcohol, or smoking.

5. *Covid-19 pandemic changes in social media use and marketing exposure*
   Participants were asked whether they changed their social media use during the Covid-19 lockdowns, and if so, the nature of this change. They were also asked about changes in seeing advertising of vaping, alcohol, and tobacco products during lockdown periods as well as post-lockdown periods.

6. *Vaping, drinking, and smoking behaviour*
   In the final section participants were asked if they had ever smoked a whole cigarette, how often they smoke cigarettes now, if they had ever vaped, how often they vape now, if they have ever drunk alcohol, and how often they drink now. They were also asked the AUDIT-C three questions about drinking, including how often they drink, how many drinks they have on a typical day when they are drinking, and how often they had six or more drinks on one occasion in the past year.

At the end of the survey, all participants were offered the opportunity to enter a prize draw to win one of six prizes (3 x UE Booms, 3 x Skullcandy earphones) and on uptake were taken to a separate site to provide their details. They were also asked if they would like to take part in more research on this topic, and if they did, they were taken to a separate site to provide contact details.

Procedure & recruitment

To recruit participants aged 16-20 years, we worked closely with a digital marketing agency. Their brief was to disseminate the survey link on social media and Internet sites to recruit 1000 respondents, including up to 500 Māori and to provide a sample with diverse socio-economic status backgrounds, gender identities, and sexualities. The agency monitored and optimised the recruitment strategy over a 6-week period throughout late January – early March 2022. Examples of the images and strategies that we used for this online campaign are shown in Appendix B.

To recruit participants aged 14-15 years, and to manage ethical responsibilities around recruitment of this age group online, we contacted various high schools and kura across Aotearoa New Zealand from July – November 2022. We asked them to send out an email to parents and caregivers of Year 10 students that provided an overview of the research and the survey we were asking young people to take part in. Parents/caregivers were asked to contact the research team if they did not want the survey link sent to their young person. A week later Year 10 Deans or other key school/kura staff sent an email to Year 10 students which outlined the research, what taking part in the survey would involve, and a link to the online survey. As above, the prize draw and questions about further engagement with the research were proffered.

Ethical considerations

Survey participants aged 16-20 years were fully informed prior to taking part. The information sheet outlining the aims of the study and what participation would involve was on the survey landing page, and participants were required to agree to take part under these conditions before they were able to start the survey. The 14-15 year olds were recruited via schools and kura, and other relevant groups. The information sheet was provided to young people and their caregivers. Participant anonymity and confidentiality were maintained throughout. Survey responses were anonymous (IP addresses were not recorded) and analysed in aggregate. If participants entered the prize draw, they were required to provide their contact details on a separate link. This ensured it was not linked to their survey answers to maintain anonymity. Although the research does not ask about highly sensitive topics, at the end of the survey all participants were given information about where they could seek help (youth support services) if they needed it and were also given the contact details of the researchers on the team. The research processes were carefully designed to be inclusive from the outset, and the project incorporated key principles from Kaupapa Māori and Māori-centred research.

SECTION A: THE SURVEY SAMPLE

In total 3794 participants commenced the survey. We checked and cleaned the data, and deleted respondents who had no responses beyond the first section. The final dataset consisted of 3698 participants.

Age and gender

The mean age was 17.1. There were good numbers of respondents across all ages from 14-20, as shown in Table 1. Of the 3547 participants who responded regarding their gender identity, 3255 (96.2%) checked one category and 127 (3.8%) checked more than one category. As shown in Table 1, slightly over half of the sample were wahine/female (55%), 39% identified as tane/male, 8% identified as non-binary, transgender, agenda, fa'afafine, intersex, or something else, with 2% not yet sure of their gender. Gender information was subsequently recoded into 3 distinct groups (female, male, another gender) as shown in Table 1.

Table 1: Age and gender information for the sample

Age (N=3424)	**n**	**%**
14	386	11.3
15	307	9.0
16	646	18.9
17	586	17.1
18	665	19.4
19	464	13.6
20	370	10.8
Gender[1] (N=3547)		
Wahine/tamāhine/girl/woman	1861	55.0
Tane/tama/boy/man	1304	38.6
Transgender	80	2.4
Non-binary	119	3.5
Agender	20	0.6
Fa'afafine	5	0.1
Intersex	6	0.2
I'm not yet sure of my gender	73	2.2
Something else	30	0.9
Prefer not to say	49	1.4
Gender[2] (N=3382)		
Wahine/tamahine/girl/woman	1817	55.7
Tane/tama/boy/man	1251	38.3
Transgender, agender, non-binary, intersex, Something else	195	6.0

[1] Multiple responses possible; [2] Recoded into distinct groups

Ethnicity

Of the 3332 participants who responded regarding their ethnicity, 2453 (73.6%) selected one ethnicity and 879 (26.4%) selected more than one. More than half of the sample (67%) selected Pākehā or NZ European, while a quarter (25.4%) selected Māori. See Table 2 for ethnicity details. We created a new variable with independent groups by recoding selection of Māori into the Māori category, and Pasifika into the Pasifika category, as shown in Table 2. With this recoding almost half the sample were Pākehā or NZ European, with over a quarter identifying as Māori.

Table 2: Ethnicity information for the sample

Ethnicity[1] (N=4441)	n	%
Māori	856	25.4
Pākehā or New Zealand European	2248	66.8
Samoan	197	5.9
Cook Islands	108	3.2
Tongan	77	2.3
Niuean	44	1.3
Chinese	199	5.9
Indian	147	4.4
Other	520	15.5
Prefer not to say	45	1.3
Ethnicity[2] (N=3365)		
Māori	851	25.6
Pākehā or New Zealand European	1552	46.7
Pasifika	215	6.5
Other	704	21.2

[1] Multiple responses possible; [2] Recoded into distinct groups

Sexuality, perceived socioeconomic status, and place of residence

Most respondents reported that they were heterosexual (68%) with 13% reporting that they were bisexual, and 5% not sure of their sexuality yet. Table 3 shows more details about sexuality responses.

There was a range of responses regarding perceived socioeconomic (SES) status, as shown in Table 3. The most common response to how well off the respondent perceived their family to be was 'fairly' well off (31% of the respondents).

Over half of the respondents lived in a major city, and over 80% lived in Te Ika a Māui / the North Island, as shown in Table 3.

Of the 3128 respondents who responded about the languages they speak, 2131 (68%) chose one language and 997 (32%) chose more than one. As shown in Table 3, 97% of the sample spoke English, and 13% spoke te reo Māori.

Table 3: Sexuality, perceived socioeconomic status, place of residence, and languages spoken

	n	%
Sexuality (N=3309)	**n**	**%**
Straight (heterosexual)	2236	67.6
Gay/lesbian	117	3.6
Bisexual	440	13.3
Queer, pansexual, asexual, something else	250	7.5
Takatāpui	12	0.4
Not sure yet	170	5.1
Prefer not to say	84	2.5
Perceived socioeconomic status (N=3136)		
Not well off at all	153	4.9
Not particularly well off	501	16.0
Fairly well off	1154	36.8
Rather well off	734	23.4
Very well off	192	6.1
Prefer not to say	402	12.8
Place of residence (N=3196)		
Major city	1743	54.5
Other city	426	13.3
Town	525	16.4
Small town	306	9.6
In the country	196	6.1
Location within Aotearoa (N=3192)		
Te Ika a Māui/North Island	2620	82.1
Te Wai Pounamu/South Island	545	17.1
Other - please state	27	0.8
Languages spoken[1] (N=3128)		
Te Reo Māori	420	13.4
English	3034	97.0
Sign language	95	3.0
Samoan	99	3.2
Mandarin	120	3.8
Another language	512	16.4

[1] Multiple responses possible

Student, work, parent, and caregiver status

Most of the respondents (84%) were students, and almost 90% of them were studying fulltime, as shown in Table 4. Over half (58%) were at high school, and almost 40% were in tertiary education.

Table 4: Student status

Student status (N=3306)	**n**	**%**
Student	2776	84.0
Full-time	2473	74.8
Part-time	286	8.7
Not a student	530	16.0
Place of study (N=2737)		
High school	1578	57.7
Kura	34	1.2
University	939	34.3
Polytechnic	129	4.7
Wānanga	3	0.1
Other	54	2.0
Year of study (N=2738)		
Year 8	6	0.2
Year 9	111	4.1
Year 10	573	20.9
Year 11	95	3.5
Year 12	410	15.0
Year 13	435	15.9
1st year university/wānanga/polytechnic	527	19.2
2nd year university/wānanga/polytechnic	361	13.2
3rd year university/wānanga/polytechnic	183	6.7
Other	37	1.4

Most participants worked in part-time, paid employment (44%) or did not work (38%). Almost 10% worked fulltime, with 6% receiving a government benefit, as shown in Table 5. There were 56 parents, 32 of whom had one child, and 13 had 2 children.

Of the 3229 respondents who provided information on their living arrangements, 1137 (35%) chose one category and 2092 (65%) chose more than one. Most participants lived with their parents and siblings, and others lived in a range of living situations as shown in Table 5. Many of the participants who selected 'other' noted that they lived with their partner's parents or family.

Table 5: Work, parent, caregiver status

	n	%
Work status (N=3244)		
Paid employment full-time	317	9.8
Paid employment part-time/casual	1414	43.6
Not work in paid employment	1226	37.8
Receive a government benefit	205	6.3
Other	82	2.5
Parent status (N=3186)		
Parent	56	1.8
Not a parent	3130	98.2
Caregiver status (N=3178)		
Caregiver	100	3.1
Not a caregiver	3078	96.9
Living arrangements[1] (N=3229)		
Living with my parents	1954	60.5
Living with one of my parents	525	16.3
Living with my sibling(s)	1912	59.2
Living with my grandparent(s)	207	6.4
Living with another family member	193	6.0
Living with flatmates	415	12.9
Living with my partner/spouse	164	5.1
Living with my child/children	31	1.0
Live at a boarding school	20	0.6
Live in a university hall of residence	117	3.6
Live by myself	34	1.1
Move between households	130	4.0
No permanent residence	30	0.9
Living with – other	63	2.0

[1] Multiple responses possible

SECTION B: INTERNET USE AND SOCIAL MEDIA ACTIVITY

Devices used to connect to the Internet

Respondents provided information on the devices that they used to connect to the Internet when they were at home, and when they were not at home. As shown in Table 6, most respondents used their own mobile phone to connect to the Internet, both at home and outside of home. They also used laptops at home, and to a lesser extent outside of home. A small number used someone else's mobile phone both at home and outside of home to connect to the Internet. Respondents reported using their own mobile phone most often (80% of respondents).

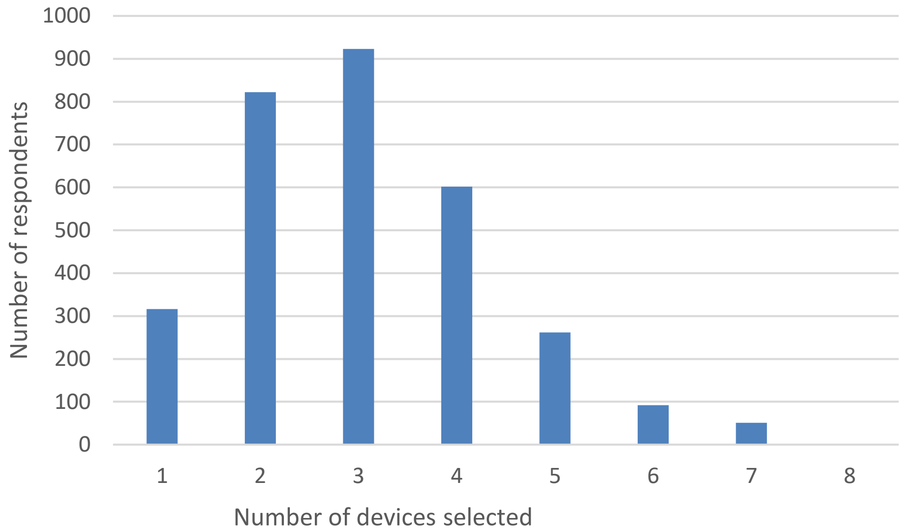
Table 6: Devices used to connect to the Internet at home, outside of home, and most used device

At home[1] (N=3070)	**n**	**%**
Own mobile phone	2984	97.2
Someone else's phone	242	7.9
Desktop computer	703	22.9
Laptop	2337	76.1
Gaming console	909	29.6
iPad/Tablet	684	22.3
TV	1499	48.8
Other	14	0.5
Outside home[1] (N=3046)	**n**	**%**
Own mobile phone	2872	94.3
Someone else's mobile phone	228	7.5
Laptop	1387	45.5
School/work computer or laptop	726	23.8
Library computer	191	6.3
iPad/tablet	277	9.1
Other	25	0.8
Don't access the internet outside of home	45	1.5
Most used device (N=2995)	**n**	**%**
Own mobile phone	2409	80.4
Someone else's phone	22	0.7
Desktop computer	115	3.8
Laptop	304	10.2
Gaming console	54	1.8
iPad/Tablet	51	1.7
TV	34	1.1
Other	6	0.2

[1] Multiple responses possible

As shown in Figure 1, most respondents selected between 3-5 devices that they used at home.

Figure 1: Number of devices used at home



Internet access

Respondents provided information on how they connected to the Internet when they were at home, as well as their Internet capacity and who paid for it. Findings are shown in Table 7. Almost all respondents used wifi at home, and for most this was unlimited (81.2%). Three-quarters of respondents' main Internet access was paid for by parents.

Table 7: Internet connection, capacity, and finance

Type of connection at home[1] (N=3052)	**n**	**%**
Wifi / broadband / fibre	2956	96.9
Mobile phone data	1445	47.3
Other	7	0.2
Can't connect to the Internet at home	9	0.3
Don't know	28	0.9
Internet capacity at home (N=3015)	**n**	**%**
Unlimited	2447	81.2
Limited (capped)	209	6.9
Don't know	359	11.9
Who pays for main source of Internet connection (N=3007)	**n**	**%**
Respondent	487	16.2
Parent(s)	2207	73.4
School/university	117	3.9
Work	14	0.5
Mainly use free public wifi	19	0.6
Other	163	5.4

[1] Multiple responses possible

Frequency and duration of Internet use

As shown in Table 8, most participants (97%) reported using the Internet 'almost constantly' or 'several times a day'. When asked about how much time they spend on the Internet 'on a normal day', 91% reported 3 or more hours. Specifically, 1700 (56%) stated they spent 5 or more hours per day on the Internet, 1038 (34%) 3-4 hours, 241 (8%) between 1-2 hours, and 45 (2%) less than one hour per day.

Table 8: Frequency and duration of Internet use

Frequency of use (N=3034)	**n**	**%**
Almost constantly	1791	59.0
Several times a day	1109	36.6
About once a day	49	1.6
Several times a week	33	1.1
Less often	22	0.7
Don't know	30	1.0
Duration of use (N=3024)	**n**	**%**
5 hours or more	1700	56.2
3–4 hours	1038	34.3
1–2 hours	241	8.0
Less than one hour	36	1.2
Less often than once a day	6	0.2
I never use the internet	3	0.1

Social media use

Respondents were high users of social media platforms and reported using between 1-19 different platforms in the past month (mean=5.1; median = 6), as shown in Table 9.

The most commonly used platforms were Instagram (92%), YouTube (86%), Snapchat (73%), TikTok (72%), and Facebook (68%), as shown in Table 10.

In terms of how often the platforms were used (almost constantly; several times a day; about once a day; a few times a week; about once a week; a few times a month; about once a month; less often; don't know), Instagram, YouTube, Snapchat, TikTok, and Facebook were used most frequently, as shown in Table 11 (results for the other platforms are provided in Appendix C (Table C1)).

Table 9: Number of different platforms used in the past month

Number of platforms	n	%
1	62	2.1
2	101	3.4
3	192	6.5
4	277	9.4
5	409	13.9
6	477	16.2
7	546	18.5
8	358	12.1
9	244	8.3
10	147	5.0
11	80	2.7
12	33	1.1
13	10	0.3
14	5	0.2
15	2	0.1
16	1	0.0
17	2	0.1
18	3	0.1
19	2	0.1

Table 10: Platforms used in the past month

Platform	n	%
Instagram	2724	92.2
YouTube	2531	85.6
Snapchat	2151	72.8
TikTok	2138	72.3
Facebook	1996	67.5
FB Messenger	1820	61.6
Pinterest	1124	38.0
Discord	948	32.1
WhatsApp	947	32.0
Twitter	701	23.7
Reddit	691	23.4
Twitch	419	14.2
Tinder	196	6.6
Tumblr	140	4.7
LinkedIn	132	4.5
WeChat	81	2.7
Other	46	1.6
Grindr	37	1.3
Hinge	33	1.1
I don’t use social media	9	0.3

[1] Multiple responses possible

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Table 11: Frequency of platform use for Instagram, YouTube, Snapchat, TikTok, and Facebook (see Appendix C for other platforms)

	Instagram (N=2684)		**YouTube (N=2495)**		**Snapchat (N=2117)**		**TikTok (N=2100)**		**Facebook (N=1959)**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Almost constantly	582	21.7	361	14.5	634	29.9	725	34.5	171	8.7
Several times a day	1545	57.6	702	28.1	837	39.5	891	42.4	561	28.6
About once a day	345	12.9	589	23.6	333	15.7	234	11.1	462	23.6
A few times a week	124	4.6	477	19.1	145	6.8	120	5.7	310	15.8
About once a week	44	1.6	174	7.0	55	2.6	40	1.9	143	7.3
A few times a month	10	0.4	131	5.3	44	2.1	33	1.6	138	7.0
About once a month	8	0.3	30	1.2	24	1.1	22	1.0	101	5.2
Less often	20	0.7	21	0.8	43	2.0	27	1.3	62	3.2
Don't know	6	0.2	10	0.4	2	0.1	8	0.4	11	0.6

The average time users reported spending on these platforms each day varied: 2.8 hours (TikTok), 2.5 hours (YouTube), 1.9 hours (Instagram), 1.7 hours (Snapchat), 1.3 hours (Facebook). The minutes spent on platforms that were used daily are shown in Table 12.

Table 12: Minutes spent on each platform that was used daily

Platform	n	Mean	SD	Median	Mode
Instagram	2224	113.53	141.18	60	60
YouTube	1457	148.95	160.34	120	60
Snapchat	1600	103.68	132.45	60	60
TikTok	1634	167.53	166.30	120	120
Facebook	1042	77.20	135.67	30	60
Facebook Messenger	976	85.73	180.66	30	60
Pinterest	235	65.71	129.87	40	60
Discord	425	145.09	174.30	90	60
WhatsApp	401	63.49	273.45	20	10
Twitter	237	61.87	87.97	30	60

Activities on social media platforms

The activities that respondents engaged in while on the social media platforms they used regularly are shown in Table 13 for Instagram, YouTube, Snapchat, TikTok, and Facebook. Different platforms were used for different activities, as we would expect. Instagram, YouTube, and TikTok were used by the majority of the participants to scroll, watch, and swipe through content. Instagram and TikTok were used more than other platforms to comment, tag, react, and like content. For creating and sharing their own content, participants used Instagram and Snapchat, and to a lesser extent TikTok. For chatting with friends, whānau, and family, Snapchat was used by over three-quarters of the respondents, followed by Instagram by half of the respondents.

Results for the activities undertaken on other platforms, namely FB Messenger, Pinterest, Discord, WhatsApp, and Twitter, are provided in Appendix C (Table C2). These results show that FB Messenger and WhatsApp are used by 90% of users of these platforms to chat with friends and whānau, followed by 82% of Discord users.

Different platforms were used to interact with different groups of people, as shown in Table 14 for Instagram, YouTube, Snapchat, TikTok, and Facebook. All of these platforms except YouTube were used by most of the participants to interact with friends. Instagram and Facebook were used the most to interact with whānau/family. In terms of interacting with brands, this was reported more for Instagram (48%) than the other platforms. In terms of interacting with creators/influencers, this was undertaken mostly on TikTok (70%) and YouTube (69%), followed by Instagram (59%). One-fifth of participants reported not interacting with anyone when they were using YouTube. Results showing who users interacted with on Messenger, Pinterest, Discord, WhatsApp, and Twitter are shown in Appendix C (Table C3). These results showed that of Twitter users, many interacted with creators/influencers (59%) and brands (23%).

Table 13: Who respondents interacted with on Instagram, YouTube, Snapchat, TikTok, and Facebook (see Appendix C for other platforms)

	Instagram[1] (N=2485)		YouTube[1] (N=2315)		Snapchat[1] (N=1949)		TikTok[1] (N=1932)		Facebook[1] (N=1797)	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Scroll, watch, swipe	1757	70.7	2141	92.5	398	20.4	1685	87.2	1201	66.8
Comment, tag, react, like	1005	40.4	454	19.6	109	5.6	887	45.9	588	32.7
Share content from others	506	20.4	100	4.3	116	6.0	568	29.4	178	9.9
Share my own photos and videos	788	31.7	51	2.2	610	31.3	337	17.4	160	8.9
Chat with friends/whānau/family	1244	50.1	17	0.7	1529	78.5	281	14.5	579	32.2
All of these	690	27.8	58	2.5	208	10.7	242	12.5	155	8.6
Other	41	1.6	77	3.3	60	3.1	33	1.7	227	12.6

[1] Multiple responses possible

Table 14: Who respondents interacted with on Instagram, YouTube, Snapchat, TikTok, and Facebook (see Appendix C for other platforms)

	Instagram[1] (N=2401)		YouTube[1] (N=2236)		Snapchat[1] (N=1884)		TikTok[1] (N=1865)		Facebook[1] (N=1728)	
	n	%	n	%	n	%	n	%	n	%
Friends	2330	97.0	240	10.7	1807	95.9	1412	75.7	1538	89.0
Whānau/family	1818	75.7	92	4.1	954	50.6	570	30.6	1516	87.7
Peers	1525	63.5	62	2.8	655	34.8	560	30.0	821	47.5
Groups	952	39.7	404	18.1	167	8.9	468	25.1	771	44.6
Brands	1159	48.3	425	19.0	56	3.0	522	28.0	248	14.4
Influencers	1421	59.2	1531	68.5	120	6.4	1302	69.8	247	14.3
Workmates	644	26.8	23	1.0	188	10.0	121	6.5	485	28.1
No one	19	0.8	453	20.3	25	1.3	119	6.4	31	1.8
Other	84	3.5	194	8.7	46	2.4	128	6.9	23	1.3

[1] Multiple responses possible

Main reasons for social media use

The main reasons for using different social media platforms were also examined, and findings are shown in Table 15 for Instagram, YouTube, Snapchat, TikTok, and Facebook. Instagram was used by more than 60% of its users for entertainment and interaction, while YouTube and TikTok were used by over three-quarters of their users for entertainment. Snapchat was used for interaction by most of its users.

In terms of using platforms for finding information, YouTube and Facebook were used the most (by 35% and 34% of their users respectively). In terms of using platforms to receive information, Facebook was used the most (35%), followed by YouTube (27%). In terms of using platforms due to boredom, TikTok was used the most (54% of its users), followed by Instagram (47% of its users) and YouTube (45% of its users). Almost a quarter of Facebook users said they used it for news (24%), followed by YouTube (17%) and Instagram (16%).

The main reasons that participants used FB Messenger, Pinterest, Discord, WhatsApp, and Twitter are shown in Appendix C (Table C4). These results showed that social interaction was a primary reason for using FB Messenger, Discord, and WhatsApp (72%, 75%, and 72% respectively), while entertainment was a primary reason for using Pinterest (57%) and Twitter (52%). Pinterest was also used for finding information (31%) and because of boredom (41%).

Table 15: Main reasons for using Instagram, YouTube, Snapchat, TikTok, and Facebook (see Appendix C for other platforms)

	Instagram[1] (N=2306)		YouTube[1] (N=2149)		Snapchat[1] (N=1809)		TikTok[1] (N=1784)		Facebook[1] (N=1656)	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Entertainment	1511	65.5	1706	79.4	614	33.9	1364	76.5	715	43.2
Activism	332	14.4	137	6.4	48	2.7	170	9.5	111	6.7
Social Interaction	1384	60.0	87	4.0	1339	74.0	333	18.7	646	39.0
Finding Information	489	21.2	756	35.2	112	6.2	270	15.1	572	34.5
Receiving Information	551	23.9	589	27.4	210	11.6	299	16.8	579	35.0
Boredom	1082	46.9	968	45.0	494	27.3	966	54.1	585	35.3
News	372	16.1	370	17.2	41	2.3	179	10.0	392	23.7
All of these	415	18.0	186	8.7	120	6.6	263	14.7	175	10.6
Other	52	2.3	43	2.0	57	3.2	27	1.5	139	8.4

[1] Multiple responses possible

Creator / influencer accounts followed by participants

Participants were asked to list up to three of their favourite accounts they follow on social media that create content in particular areas that they are interested in, and that have a reputation for their content. Three-quarters of the sample said they followed such accounts, as shown in Table 16.

Table 16: Number of respondents following 'creator/influencer' accounts on social media

Responses (N=2429)	n	%
Follow creator accounts	1827	75.2
Do not follow creator accounts	371	15.3
Do not know	231	9.5

Table 17 shows the platforms on which creator accounts are followed, for each of the three listed. Instagram was the platform that creators/influencers were most followed on, followed by YouTube and TikTok.

Table 17: Platforms on which 'creator/influencer' accounts are followed by respondents

Platform	Account 1[1] (N=1184)		Account 2[1] (N=1062)		Account 3[1] (N=917)	
	n	%	n	%	n	%
Instagram	898	75.8	760	71.6	654	71.3
YouTube	472	39.9	395	37.2	367	40.0
TikTok	408	34.5	350	33.0	293	32.0
Facebook	159	13.4	126	11.9	103	11.2
Twitter	110	9.3	68	6.4	63	6.9
Snapchat	60	5.1	52	4.9	42	4.6
Discord	30	2.5	28	2.6	28	3.1
Pinterest	24	2.0	20	1.9	24	2.6
Reddit	20	1.7	16	1.5	16	1.7
Messenger	15	1.3	8	0.8	11	1.2
WhatsApp	6	0.5	6	0.6	7	0.8
Tumblr	6	0.5	6	0.6	1	0.1
Tinder	1	0.1	1	0.1	1	0.1
Other	34	2.9	20	1.9	33	3.6
Twitch	24	2.0	25	2.4	24	2.6

[1] Multiple responses possible

Participants were also asked about the kind of content that was shared by the creators / influencers they followed on social media platforms. Table 18 shows the responses for each of the three creator / influencer accounts listed by participants.

Table 18: The kind of content shared by accounts followed by respondents

Platform	Account 1[1] (N=1175)		Account 2[1] (N=1054)		Account 3[1] (N=910)	
	n	%	n	%	n	%
Gaming	159	13.5	151	14.3	130	14.3
Music	264	22.5	214	20.3	186	20.4
Fashion	283	24.1	225	21.3	209	23.0
Art	179	15.2	160	15.2	158	17.4
Travel	190	16.2	150	14.2	133	14.6
Lifestyle	446	38.0	371	35.2	318	34.9
Activism	215	18.3	169	16.0	159	17.5
Food	156	13.3	122	11.6	106	11.6
Sports	210	17.9	161	15.3	138	15.2
Comedy	372	31.7	311	29.5	266	29.2
Health	167	14.2	130	12.3	124	13.6
Other	246	20.9	225	21.3	193	21.2

[1] Multiple responses possible

Importance of Māori content in social media

Participants were asked if Māori content was important to them in their social media use. Responses are shown in Table 19. Over 44% said Māori content was very or a little important to them.

Table 19: Importance of Māori content to social media use

Responses (N=2314)	n	%
Yes, very	265	11.5
Yes, a little	756	32.7
No, not really	179	7.7
No, Not at all	656	28.3
I don't know	458	19.8

Changes in social media use due to COVID-19 lockdowns

The participants were asked questions about their social media use in lockdowns. Table 20 shows that 68% of participants indicated that their social media use changed during this time.

Table 20: Changes in social media use during COVID-19 lockdowns

Response (N=2195)	n	%
Yes	1488	67.8
No	484	22.1
I don't know	223	10.2

As shown in Table 21, of those who answered that their social media use had changed, 91% said that it had increased, with 67% responding that it had increased a lot more.

Table 21: Amount of change in use compared to before the COVID-19 lockdowns

Response (N=1487)	n	%
A lot more	999	67.2
A little more	350	23.5
A little less	68	4.6
A lot less	58	3.9
Other	12	0.8

SECTION C: SOCIAL MEDIA MARKETING EXPOSURE AND ENGAGEMENT

Vape product advertising

Participants were asked if they recalled seeing any vape product advertising on social media. Of the 3698 participants, 3229 (87%) responded yes or no for at least one platform. Of these, 1119 (35%) responded that they had seen vape advertising on at least one platform, and 2110 (65%) responded that they had not seen vape advertising on at least one platform. Of the 1119 respondents who said they had seen vape product advertising, 672 were aged 14-17 years (34% of this age group), while 447 were aged 18-20 years (30% of this age group). In summary, just over a third of respondents reported that they had seen vape advertising.

Table 22 shows the top 5 platforms that respondents reported viewing vape advertising. Of the 1094 participants who responded to this question, 65% of the sample indicated that they saw vape product advertising on Instagram and just over 58% on TikTok.

Table 22: Top 5 platforms for seeing vape advertising

Platform[1] (N=1094)	n	%
Instagram	711	65.0
TikTok	636	58.1
YouTube	398	36.4
Facebook	306	28.0
Snapchat	282	25.8

[1] Multiple responses possible

Participants were also asked how they engaged with vape advertising. Responses are shown in Table 23. The most common engagement with vape advertising was to purchase a vape product (48%), followed by liking a brand (41%) and sharing something related to a vape brand, such as a status, picture, or video (39%).

Table 23: Engagement with vape advertising

Activity[1] (N=563)	n	%
Purchased products online	270	48.0
Like a brand on social media	228	40.5
Share something related to brand	221	39.3
Searched for ads online or on social media	202	35.9
Engaged with other brand content	168	29.8
Used a related image filter or effect	147	26.1
Follow a brand on social media	113	20.1
Enter a competition online or on social media	58	10.3

[1] Multiple responses possible

Participants were asked whether the creator / influencer accounts they followed on social media platforms shared any vape content. Table 24 shows the types of content shared on these accounts; the most common content seen by respondents was the influencer sharing personal vaping.

Table 24: Vape content shared by the creator / influencer accounts followed by respondents

Platform	Account 1[1] (N=70)		Account 2[1] (N=61)		Account 3[1] (N=48)	
	n	%	n	%	n	%
Shared brand information	10	14.3	11	18.0	9	18.8
Shared something related such as status, picture, or video	25	35.7	24	39.3	12	25.0
Shared personal vaping content	40	57.1	35	57.4	30	62.5
Shared other content	21	30.0	24	39.3	15	31.2

[1] Multiple responses possible

Alcohol product advertising

Of the 3698 participants, 3597 (97%) responded yes or no to having seen alcohol advertising on at least one platform. Of these, 1541 (43%) responded that they had seen alcohol advertising on at least one platform and 2056 (57%) responded that they had not seen alcohol advertising on at least one platform. Of the 1541 yes respondents, 826 were aged 14-17 years (43% of the age group), while 715 were aged 18-20 years (48% of this age group). In summary, about 43% of respondents had seen alcohol advertising, and this exposure was about 5% higher in those aged 18-20 years.

Table 25 shows the top 5 platforms for alcohol advertising. Of the 1527 participants who responded to this question, over half the sample indicated that they saw alcohol product advertising on Instagram (73%) and Facebook (57%).

Table 25: Top 5 platforms for seeing alcohol advertising

Platform[1] (N=1527)	n	%
Instagram	1113	72.9
YouTube	864	56.6
Facebook	699	45.8
TikTok	567	37.1
Snapchat	300	19.6

[1] Multiple responses possible

Participants were also asked how they engaged with alcohol advertising. Responses are shown in Table 26. The most common engagement with alcohol advertising was to like an alcohol brand on social media (60%), followed by sharing something related to a brand, such as a status, picture, or video (48%), and then following a brand on social media (37%).

Table 26: Engagement with alcohol advertising

Activity[1] (N=884)	n	%
Like a brand on social media	533	60.3
Share something related to brand	424	48.0
Follow a brand on social media	329	37.2
Engaged with other brand content	297	33.6
Enter a competition on social media	295	33.4
Searched for ads online or on social media	292	33.0
Purchased products online	207	23.4
Used a related image filter or effect	189	21.4

[1] Multiple responses possible

Participants were asked whether the creator / influencer accounts they followed on social media platforms shared any alcohol content. The types of content shared on these accounts is displayed in Table 27; this shows that the most common content shared was influencers' personal drinking.

Table 27: Alcohol content shared by the creator / influencer accounts followed by respondents

Platform	Account 1[1] (N=267)		Account 2[1] (N=208)		Account 3[1] (N=184)	
	n	%	n	%	n	%
Shared brand information	54	20.2	47	22.6	35	19.0
Shared something related to a brand	101	37.8	74	35.6	55	29.9
Shared personal drinking content	201	75.3	165	79.3	131	71.2
Shared other content	57	21.3	54	26.0	50	27.2

[1] Multiple responses possible

Tobacco product advertising

Participants were asked if they recalled seeing any tobacco product advertising on social media. Of the 3698 participants that responded, 2396 (65%) responded yes or no for at least one platform. Of these, 274 (11%) responded that they had seen tobacco advertising on at least one platform and 2122 (89%) responded that they had not seen tobacco advertising on at least one platform. Of the 274 respondents who reported they had seen tobacco advertising, 203 were aged 14-17 years (11% of all participants aged 14-17 years), while 71 were aged 18-20 years (5% of this age group).

Table 28 shows the top 5 platforms for tobacco advertising. Of the 255 participants who responded to this question, approximately 61% indicated that they saw tobacco product advertising on Instagram and almost 50% on TikTok.

Table 28: Top 5 platforms for seeing tobacco advertising

Platform[1] (N=255)	n	%
Instagram	156	61.2
TikTok	126	49.4
YouTube	105	41.2
Facebook	84	32.9
Snapchat	60	23.5

[1] Multiple responses possible

Participants were also asked how they engaged with tobacco advertising. Responses are shown in Table 29. The most common engagement with tobacco advertising was to use an image filter or effect related to smoking (48%), followed by sharing something related to a tobacco product, such as a status, picture, or video (41%), followed by liking a tobacco product on social media (33%).

Table 29: Engagement with tobacco advertising

Activity[1] (N=182)	n	%
Used a related image filter or effect	88	48.4
Share something related to brand	74	40.7
Like a brand on social media	60	33.0
Purchased products online	39	21.4
Searched for ads online or on social media	35	19.2
Engaged with other brand content	34	18.7
Follow a brand on social media	27	14.8
Enter a competition online or on social media	24	13.2

[1] Multiple responses possible

Participants were asked whether the creator / influencer accounts they followed on social media platforms shared any tobacco content. The types of content shared on these accounts is displayed in Table 30, highlighting that the most common content viewed by respondents was influencers' personal smoking.

Table 30: Tobacco content shared by the creator / influencer accounts followed by respondents

Platform	Account 1[1] (N=62)		Account 2[1] (N=50)		Account 3[1] (N=46)	
	n	%	n	%	n	%
Shared brand info	12	19.4	5	10.0	9	19.6
Shared something related such as status, picture, or video	21	33.9	15	30.0	12	26.1
Shared personal smoking content	34	54.8	26	52.0	27	58.7
Shared other content	12	19.4	11	22.0	14	30.4

[1] Multiple responses possible

Changes in vape, alcohol, and tobacco product advertising due to COVID-19 lockdowns

Participants were asked if they recalled seeing any changes in advertising of vaping, alcohol, and tobacco products on social media during the COVID-19 lockdowns compared to before lockdowns. Table 31 shows the changes. In all three cases the majority of participants reported either no change or that they did not know. In terms of those who saw more advertising, 16.4% reported seeing more alcohol advertising and 8% more vape advertising. Only 2% said they saw more tobacco advertising.

Table 31: Changes in seeing vaping, alcohol, and tobacco product advertising during Covid-19 lockdowns (compared to before lockdowns)

Platform	Vaping (N=2192)		Alcohol (N=2157)		Tobacco (N=2182)	
	n	%	n	%	n	%
Saw more ads	168	7.7	354	16.4	48	2.2
Saw no change	1070	48.8	985	45.7	1162	53.3
Saw fewer ads	87	4.0	72	3.3	99	4.5
I don't know	867	39.6	746	34.6	873	40.0

When asked if they had seen changes in the marketing of vaping, alcohol, or tobacco products *after* Covid-19 lockdowns, of the 2180 who answered, 16% said yes, 46% said no, and 38% said that they did not know.

SECTION D: VAPING, DRINKING AND SMOKING BEHAVIOUR

Vaping

Participants were asked whether they have ever vaped. Of the 2185 respondents who answered this question, 51% said yes and 49% said no. Those who said they had ever vaped were asked whether, and how often, they vape now, and responses are shown in Table 32. Overall, 38% said they did not vape now and 23% said they only vaped occasionally. In contrast, 7% said that they vaped most days and 20% responded that they vaped daily (10% of the overall sample who answered if they had ever vaped).

Table 32: Frequency of vaping

Response (N=1108)	N	%
Never – I don't vape now	425	38.4
Occasionally	251	22.7
Once or twice a month	77	6.9
Once or twice a week	58	5.2
Most days	76	6.9
Daily	221	19.9

Drinking

Participants were asked whether they have ever drunk alcohol. Of the 2184 respondents who answered this question, 69% said yes and 31% said no. Those who said they had ever drunk alcohol were asked how often they have a drink containing alcohol. Responses are shown in Table 33. Almost one-fifth of respondents reported that they never drank or drank less than once a year (18.6%). The largest proportion (64.4%) drank 2-4 times a month or less and 15.2% drank on a weekly basis.

Table 33: Frequency of drinking

Response (N=1498)	n	%
Never	41	2.7
Once a year or less	237	15.8
Monthly or less	476	31.8
2 to 4 times a month	488	32.6
2 to 3 times a week	177	11.8
4 or more times a week	51	3.4
I don't know	28	1.9

Smoking

Participants were asked whether they had ever smoked a whole cigarette. Of the 2185 respondents who answered this question, 22% said yes and 78% said no. Those who said yes were asked how often they smoked cigarettes now, and these responses are shown in Table 34. Overall, 44% said they never smoked now and 37% said the only smoked occasionally. In contrast, 6% said that they smoked daily or most days.

Table 34: Frequency of smoking

Response (N=476)	n	%
Never – I don't smoke now	211	44.3
Occasionally	177	37.2
Once or twice a month	41	8.6
Once or twice a week	19	4.0
Most days	10	2.1
Daily	18	3.8

Sharing vaping, drinking, or smoking information on social media

Participants were asked questions in relation to whether they or others shared images of themselves vaping, drinking, or smoking on social media. In relation to sharing of their own images, out of the 661 respondents who answered this question, 42% said that they uploaded pictures of themselves vaping, 93% drinking, and 20% smoking. Table 35 contains these details.

Table 35: Uploading images of vaping, drinking, and smoking on social media

Platform	Uploaded own photo by self[1] (N=661)		Upload own image by others[1] (N=826)	
	n	%	n	%
Vaping	277	41.9	439	53.1
Drinking alcohol	616	93.2	761	92.1
Smoking	131	19.8	273	33.1

[1] Multiple responses possible

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Appendix A: Online Survey Te Ngāngara Marsden Project: Limbic capitalism and the digital landscape of young people's lives

FRONT SECTION: Info and Consent

About the project: In this survey we're trying to find out more about how young people access the internet, the social media platforms they use, what they use them for and why. We're also exploring how much marketing of vaping, alcohol and tobacco products rangatahi and young people see on social media.

Why we are doing this? This is the first stage of our research that aims to identify and challenge some of the practices on social media platforms that generate profit for various companies, but may potentially be harmful for young people and their wellbeing. Your participation will be really beneficial in helping us to get a wide range of views. This research has been approved by the Victoria University of Wellington Human Ethics Committee [#29931].

How can you help? If you're aged 16-20, use social media and can understand English, it would be great if you completed our survey. The survey will ask you some questions about yourself, your social media and internet use, and if you've seen content that includes vaping, drinking alcohol or smoking. It will take you about 15 minutes to complete. If you want to enter the prize draw for some awesome tech prizes, we'll ask for your contact details at the end of the survey (these will be kept separate from your survey responses which will remain anonymous).

What if I change my mind once I begin the survey? It's your choice and you can quit at any time without explanation. Taking part in the study is not expected to stress you out. But if any of the questions cause feelings of distress or discomfort, we provide information about available support services at the end of the survey and on our website.

What will we do with your data? People doing the survey will not be identifiable. Nobody, including the researchers, will know who you are. But by taking the survey, you are giving consent for us to use your responses in our research. Once you submit the survey, it will be impossible to remove your data. Please do not include any personal identifiable information in your responses. If you want to enter our prize draw, we will ask for your name and email on a different link at the end of the survey so that they are separate from your survey responses, and these details will be held in confidence and deleted after the draw.

What will the project produce? All information will be used as part of a bigger project about young people, social media and digital marketing in Aotearoa. We will update this website with summaries about the results of this research (so check back here in a few weeks!), and we will write reports, media articles, academic papers and give presentations about the findings.

Who can you contact if you have any questions or problems? If you have any questions, either now or in the future, please feel free to contact any of the members of our research team - all details are shown on our website and below.

Continuing with this survey implies consent. If you do not wish to continue with the survey, please close this browser window now.
o I have read and understood the information provided for this study and consent to collection of my responses

SECTION A: Demographics

Instructions: ***Kia ora! Thank you very much for agreeing to take part. In this first section, we ask some questions about you. Remember that any information you provide will be kept anonymous.***

Info / construct	#	Questionnaire item	Response format	Logic/flow	Notes
Age	A1	How old are you?	14, 15, 16, 17, 18, 19, 20		
Gender	A2	Which of the following best describes your current gender? Select all that apply	transgender, non-binary, wahine/tamahine/girl/woman, tane/tama/boy/man, agender, fa'afafine, intersex, I'm not yet sure of my gender, Something else, please state [open text], I'd prefer not to say		Adapted from Youth19
Ethnicity	A3	Which ethnic group(s) do you belong to? Select all that apply.	Māori, Pākehā or New Zealand European, Samoan, Cook Islands, Tongan, Niuean, Chinese, Indian, Other (please state) [open text], I'd prefer not to say	If more than one group ticked, go to A3a	
	A3a	Which ethnic group do you most strongly affiliate with?	Māori, Pākehā or New Zealand European, Samoan, Cook Islands, Tongan, Niuean, Chinese, Indian, Other (please state) [open text], I'd prefer not to say		
Culture	A4	What culture do you most strongly identify with?	Māori, Pākehā or New Zealand European, Samoan, Cook Islands, Tongan, Niuean, Chinese, Indian, Other (please state) [open text], prefer not to say		
Sexuality	A5	Which of the following best describes your sexual orientation? Select one answer only	Lesbian, gay, bisexual, straight (heterosexual), queer, pansexual, asexual, takatāpui, I'm not sure yet, something else (please state) [open text], I'd prefer not to say		Adapted from Youth19
Study status	A6	Are you a student?	Yes, no	If yes then go to A6a,b,c	

	A6a	Do you study full-time or part-time?	full-time, part-time		
	A6b	Which of the following do you attend?	high school, kura, university, polytechnic, wānanga, other (please state) [open text]		
	A6c	Which year are you in?	Year 8, Year 9, year 10, year 11, year 12, year 13, first year university/wānanga/polytechnic, second year university/wānanga/polytechnic, third year university/wānanga/polytechnic, other (please state) [open text]		
Work status	A7	What is your current work status?	paid employment full-time, paid employment part-time/casual, do not work in paid employment, receive a government benefit, other (please state) [open text]		
Living situation	A8	Who lives in your household (tick all that apply)?	my parents, one of my parents, my sibling(s), my grandparent(s), another family member, flatmates, my partner/spouse, my child/children, I live at a boarding school, I live at a boarding hostel, I live in a university hall of residence, I live by myself, I move between households, I don't have a permanent residence, other (please state) [open text]		
Rural/urban	A9	Where do you live?	major city (e.g. Ōtautahi / Christchurch; Te Whanganui a Tara / Wellington; Tāmaki Makaurau / Auckland), other city, town, small town, in the country		
Residence location	A10	Which part of Aotearoa NZ do you live in?	Te Wai Pounamu / South Island Te Ika a Māui / North Island Other (please state) [open text]		
Parental status	A11	Are you a parent?	Yes / no	If yes go to 11a	
	A11a	How many children do you have?	1, 2, other (please state) [open text]		
Caregiver status	A12	Are you a caregiver for anyone?	Yes / no	If yes go to A12a	
	A12a	Who do you care for?	Open text response		

Perceived SES	A13	How well off economically do you think your whānau/family is?	not well off at all, not particularly well off, fairly well off, rather well off, very well off *For analysis: clustered into three categories; low ("not at all" and "not particularly"), middle ("fairly") and high ("rather" and "very")*		Svedberg, P. et al (2016). *BMC medical research methodology*, *16*(1), 1-9.
Language	A14	What language(s) do you speak/use (tick all that apply)?	Te Reo Māori, Sign language, English, Samoan, Mandarin, other (please state) [open text]		

SECTION B: INTERNET ACCESS; SOCIAL MEDIA USE, CONTENT, ACTIVITY

Instructions: ***The next few questions ask you about your internet access and general internet activity.***

Info / construct	#	Questionnaire item	Response format	Logic/flow	Notes
Access at home	B1	When you're at home, what devices do you use to connect to the internet? (select all that apply):	Your own mobile phone, someone else's mobile phone, desktop computer, laptop, gaming console, iPad/Tablet, TV, Other (please state [open text]		
Internet connection at home	B2	What type of internet connection do you use where you currently live? (select all that apply)	Broadband/fibre/wifi, mobile phone data, other (please state [open text], can't connect to the internet at home, don't know	If 'can't connect to the internet at home' go to B2a	Adapted from World Internet Project
Reason can't connect at home	B2a	Why can't you connect to the internet at home?	There's no mobile coverage in my region, we do not have broadband or wifi at home, other (please state) [open text]		
Internet away from home	B3	When you're not at home, what devices do you use to connect to the internet? (select all that apply):	Your own mobile phone, someone else's mobile phone, laptop, school/work computer or laptop, library computer, iPad/tablet, other (please state) [open text], I don't access the internet outside of home		Adapted from World Internet Project

Frequency of internet use	B4	About how often do you use the internet?	almost constantly, several times a day, about once a day, several times a week, less often, don't know.		From Pew research centre
Time spent on internet	B5	On a normal day, how much time do you spend on the internet?	'5 hours or more', '3–4 hours', '1–2 hours', 'Less than one hour', 'Less often than once a day' 'I never use the internet.'		From Youth19 Ball, J.,et al. 2021
Internet capacity	B6	What is the capacity of your main source of internet connection?	Unlimited, Capped (please specify the limit if known [open text]), Don't know.		
Payment	B7	Who pays for your *main* source of internet access?	myself, my parent(s), my school/university, my work, I mainly use free public wifi, other (please state) [open text]		
Main device	B8	What device do you use the most for connecting to the internet?	your own mobile phone, someone else's mobile phone, desktop computer, laptop, gaming console, iPad/Tablet, TV, Other (please state [open text]		

SECTION C: SOCIAL MEDIA USE, CONTENT, ACTIVITY

Instructions: ***Thanks for your responses so far. In the next section, we ask you about your social media use, including which platforms you visit, how often you visit them, and what you do when you visit them.***

Info / construct	#	Questionnaire item	Response format	Logic/flow	Notes
Social media site use	C1	Which of the following social media platforms have you used in the past month (select all that apply)?	Facebook, Instagram, Snapchat, YouTube, TikTok, WhatsApp, Facebook Messenger, Twitter, Pinterest, Reddit, LinkedIn, Twitch, Discord, Tumblr, Tinder, Hinge, Grindr, WeChat, Other (please provide [open text]), I don't use social media		
Frequency of use	C2	Thinking about the social media platforms you use ... About how often do you visit or use (list populated from responses to C1).	Almost constantly, Several times a day, About once a day, A few times a week, About once a week, A few times a month, About once a month, Less often, Don't know	If tick any of first 5 responses, go	Adapted from World

				to C2a, otherwise go to C3	Internet Project
Duration of use	C2a	About how many minutes OR hours a day do you usually use (list populated from responses to C2)?	Open text response in minutes OR hours (two options)	Response options only for platforms noted in C2	
Activity on social media	C3	What do you usually do on the following social media platforms (list populated from responses to C1)?	Scroll/watch/swipe; Comment, tag, react, or like; Share content from others; Share my photos and videos; Chat with friends / whānau / family; all of these; other (please state) [open text]		
Following people on social media	C4	Who do you interact with on the following social media platforms (list populated from responses to C1)?	Friends; whānau/family; peers; groups; brands; influencers; workmates; no-one; other		
Reasons for social media use	C5	What are the main reasons for using the social media platforms you like? Select all that apply (list populated from responses to C1)	Entertainment; activism; social interaction; finding information; receiving information; boredom; news; all of these; other		Brailovskaia, et al., (2020) & Stockdale & Coyne (2020).
Favourite platform & reason	C6	Can you please briefly tell us which social media platform is your favourite and why? (If you'd prefer not to just leave this question blank)	Open text		
Disliked platforms	C7	Are there any social media platforms you dislike but you keep using?	Yes, no, don't know	If yes go to C7a	
reason for disliked platforms	C7a	Can you please briefly tell us which platform(s) you dislike and why you keep using it/them? (if you'd prefer not to just leave this question blank)	Open text		
Platforms stopped using	C8	Are there any social media platforms you have stopped using?	Yes, no, don't know	If yes go to C8a	

Reason for stopping	C8a	Can you please briefly tell us which platform(s) and why you stopped using it/them? (if you'd prefer not to just leave this question blank)	Open text		
Following creators/influencers	C9	Do you follow any accounts on social media that create content in particular areas that you're interested in, and that have a reputation for their content (e.g. artists, celebrities, groups, events, peers)?	Yes, no, don't know	If yes then go to C9a, b, c	
Creator names	C9a	Please list up to three of your favourite accounts that you follow on social media. (Feel free to open another browser tab or app and check the name/handle of these accounts). If you can only recall one or two accounts, please write the names below and click next. If you cannot recall any account names, please click next.	3 boxes for open text : • Followed account 1 • Followed account 2 • Followed account 3		
Creator SM platforms	C9b	What social media platform(s) do you follow these accounts on? [insert each account listed]	list populated from responses to C1, other	If 'other' go to C9c	
	C9c	You indicated you follow an account on a social media platform that isn't on our list. Please type the platform you see their content on below.	Open text for each account followed		
	C9d	What kind of content do the accounts you follow share? Select all that apply.	*Responses populated for each account listed* Gaming, music, fashion, art, travel, lifestyle, activism, food, sports, comedy, health, other	If 'other' go to 9Ce	
	C9e	You indicated other content that is shared by accounts you follow. Please describe this content below.	Open text for each account followed		
Importance of Māori content	C10	Is Māori content important to you in your social media use?	Yes very, yes a little, no not really, no not at all, don't know	If yes very or yes a little go to C10a & C10b	

Type of Māori content	C10a	Can you please tell us briefly what type of Māori content you engage with on social media? (if you'd prefer not to just leave this question blank)	Open text		
Reasons Māori content	C10b	Can you please briefly tell us why Māori content is important to you in your social media use? (if you'd prefer not to just leave this question blank)	Open text		

SECTION D: SOCIAL MEDIA MARKETING EXPOSURE AND ENGAGEMENT

Instructions: ***In this section, we're going to ask you about your experience of vape, alcohol and tobacco product marketing on social media.***

Info / construct	#	Questionnaire item	Response format	Logic/flow
Seen vape ads	D1	Do you recall seeing any vape product advertising on the following social media (list populated with responses from C1)?	Yes, No, Don't know	
Engagement with vape ads	D2	Have you done any of the following in the past six months? (tick all that apply)	• Liked a **vape brand** on social media • Shared something related to a **vape brand**, such as a status, picture or video • Followed a **vape brand** on social media • Entered a competition linked to a **vape brand** on social media • Searched for **vape adverts** on websites or social media. • Used an image filter or effect related to **vaping** • Engaged with other **vape brand** content • Purchased **vape products** online	if 'engaged with other vape brand content' selected, go to D2a
	D2a	What other engagement have you had with vape brands on social media in the past six months?	Open text	
Creators and vape ads	D3	Thinking about the accounts on social media that you follow because you're interested in their content – have these accounts done any	• Shared information about a vape brand • Shared something related to a vape brand, such as a status, picture or video	If 'Shared other vaping content' go to D3a

		of the following?	• Shared content of themselves vaping • Shared other vaping content	
	D3a	you indicated other vaping content that is shared by accounts you follow. Please describe this content below.	Open text	
Seen alcohol ads	D4	Do you recall seeing any alcohol advertising on the following social media (list populated with positive responses from C1)?	Yes, No, Don't know	
Engagement with alcohol ads	D5	Have you done any of the following in the past six months? (tick all that apply)	• Liked an **alcohol brand** on social media • Shared something related to an **alcohol brand**, such as a status, picture or video • Followed an **alcohol brand** on social media • Entered a competition run by an **alcohol brand** on social media • Searched for **alcohol brand** adverts on websites or social media. • Used an image filter or effect related to **drinking alcohol** • Engaged with other **alcohol brand** content • Purchased **alcohol** online	if 'engaged with other alcohol brand content' selected, go to D5a
	D5a	What other engagement have you had with alcohol brands on social media in the past six months?	Open text	
Creators and alcohol ads	D6	Thinking about the accounts on social media that you follow because you're interested in their content – have these accounts done any of the following?	• Shared information about an alcohol brand • Shared something related to an alcohol brand, such as a status, picture or video • Shared content of themselves drinking alcohol • Shared other alcohol content- please state [open text]	If 'Shared other alcohol content' go to D6a
	D6a	you indicated other alcohol content that is shared by accounts you follow. Please describe this content below (if you'd prefer not to just leave this question blank)	Open text	

Seen tobacco product ads	D7	Do you recall seeing any promotion of tobacco products on the following social media (list populated with positive responses from C1)?	Yes, No, Don't know	
Engagement with tobacco product ads	D8	Have you done any of the following in the past six months? (tick all that apply)	• Liked a **tobacco product** on social media • Shared something related to a **tobacco product**, such as a status, picture or video • Followed a **tobacco product** on social media • Entered a competition run by a **tobacco product** on social media • Searched for **tobacco product** adverts on websites or social media. • Used an image filter or effect related to **smoking** • Engaged with other **tobacco product** content • Purchased **tobacco products** online	if 'engaged with other alcohol brand content' selected, go to D8a
	D8a	What other engagement have you had with tobacco products on social media in the past six months?	Open text	
Creators and tobacco product ads	D9	Thinking about the accounts on social media that you follow because you're interested in their content – have these accounts done any of the following?	• Shared information about a tobacco product • Shared something related to a tobacco product, such as a status, picture or video • Shared content of themselves smoking • Shared other tobacco content (please state) [open text]	If 'Shared other tobacco content' go to D9a
	D9a	You indicated other tobacco content that is shared by accounts you follow. Please describe this content below (if you'd prefer not to just leave this question blank)	Open text	
Own posting product use	D10	In the past 6 months, have you uploaded picture(s) and/or videos of yourself (tick all that apply)	Vaping, drinking alcohol, smoking, none of these	
Others posting	D11	In the past 6 months, have other people uploaded pictures and/or videos of you (tick	Vaping, drinking alcohol, smoking, none of these	

product use		all that apply)		

SECTION E: COVID-19 CHANGES IN SOCIAL MEDIA USE

Instructions: ***These next questions ask you about your social media use during Covid-19 lockdowns***

Info / construct	**#**	**Questionnaire item**	**Response format**	**Logic/flow**
Change in social media use during lockdown	E1	Did you change your social media use during the Covid-19 lockdowns?	Yes, No, Don't know	If yes go to E1a
How social media use changed in lockdowns	E1a	During the Covid-19 lockdowns, how much did you use social media compared to before Covid?	a lot more, a little more, a little less, a lot less, other (please state) [open text]	
Vape Marketing and lockdown	E2	During the Covid-19 lockdowns, do you recall seeing any changes in advertising of vaping products on social media compared to before lockdown?	I saw more vaping ads, I didn't see any change, I saw fewer vaping ads, I don't know	
Alcohol Marketing and lockdown	E3	During the Covid-19 lockdowns, do you recall seeing any changes in advertising of alcohol products on social media compared to before lockdown?	I saw more alcohol ads, I didn't see any change, I saw fewer alcohol ads, I don't know	
Tobacco product Marketing and lockdown	E4	During the Covid-19 lockdowns, do you recall seeing any changes in the promotion of tobacco products on social media compared to before lockdown?	I saw more tobacco promotion, I didn't see any change, I saw less tobacco promotion, I don't know	
Post lockdown	E5	Have you seen any changes in the marketing of vaping, alcohol or tobacco products *post*	Yes, No, Don't know	If yes go to E5a

change		lockdown compared to during or before lockdown?		
Post lockdown explain	E5a	Can you please tell us briefly what kind of changes you have seen? (if you'd prefer not to just leave this question blank)	Open text	

SECTION F: VAPING, DRINKING, SMOKING BEHAVIOUR

Instructions: ***Finally, these last few questions ask about smoking, vaping, and drinking***

Info / construct	#	Questionnaire item	Response format	Logic/flow	Notes
Tobacco product smoking	F1	Have you ever smoked a whole cigarette (e.g. tailor made cigarettes, roll your owns)?	Yes, No	If yes go to F1a	From Youth19/HPA
Frequency of smoking	F1a	How often do you smoke cigarettes now?	Never - I don't smoke now; Occasionally; Once or twice a month; Once or twice a week; Most days; Daily		
Vaping	F2	Have you ever vaped/used an e- cigarette?	Yes, No	If yes go to F2a, F2b	
Frequency of vaping	F2a	How often do you vape now?	Never - I don't vape now; Occasionally; Once or twice a month; Once or twice a week; Most days; Daily		
Vaping nicotine	F2b	When you vape, does the vapour contain nicotine?	Yes, No, Don't know		
Drinking alcohol	F3	Have you ever drunk alcohol (not counting a few sips)?	Yes, No	If yes go to F3a, b, c, d	
Frequency of drinking AUDIT-C #1	F3a	How often do you have a drink containing alcohol?	Never; Once a year or less; Monthly or less; 2 to 4 times a month; 2 to 3 times a week; 4 or more times a week; Don't know		AUDIT-C Scoring: Never (0); Monthly or less (1); 2 to 4 times a month (2); 2 to 3 times a week (3) 4 or more times a week (4)

AUDIT-C #2	F3b	How many drinks containing alcohol do you have on a typical day when you are drinking? (count one drink as one can or small bottle of beer, one small glass of wine, one shot of spirits, one RTD - ready-made alcoholic drink)	1 or 2; 3 or 4; 5 or 6; 7 to 9; 10 or more		1 or 2 (0) 3 or 4 (1) 5 or 6 (2) 7 to 9 (3) 10 or more (4)
AUDIT-C #3	F3c	How often did you have six or more drinks on one occasion in the past year?	Never; Less than monthly; Monthly; Weekly; Daily or almost daily; Don't know		Never (0) Less than monthly (1) Monthly (2); Weekly (3); Daily or almost daily (4); Don't know

***Final* –** That's it! Thank you so much for filling this survey in. Your info will help us understand how young people in Aotearoa are using social media, and how much digital marketing of alcohol, vape and tobacco products is happening.

Appendix B: Examples of the images / strategies used in online recruitment campaign

Appendix C: Social media use and activities

Table C1: Frequency of platform use for Facebook Messenger, Pinterest, Discord, WhatsApp, and Twitter

	Messenger (N=1791)		Pinterest (N=1111)		Discord (N=937)		WhatsApp (N=928)		Twitter (N=688)	
	n	%	n	%	n	%	n	%	n	%
Almost constantly	223	12.5	36	3.2	145	15.5	64	6.9	35	5.1
Several times a day	516	28.8	114	10.3	199	21.2	210	22.6	102	14.8
About once a day	383	21.4	129	11.6	129	13.8	184	19.8	141	20.5
A few times a week	375	20.9	286	25.7	153	16.3	202	21.8	130	18.9
About once a week	132	7.4	198	17.8	95	10.1	97	10.5	97	14.1
A few times a month	92	5.1	190	17.1	93	9.9	82	8.8	95	13.8
About once a month	37	2.1	91	8.2	48	5.1	47	5.1	35	5.1
Less often	29	1.6	62	5.6	72	7.7	40	4.3	51	7.4
Don't know	4	0.2	5	0.5	3	0.3	2	0.2	2	0.3

Table C2: Activities undertaken while using Facebook, Messenger, Pinterest, Discord, WhatsApp, and Twitter

	Messenger[1] (N=1641)		Pinterest[1] (N=1029)		Discord[1] (N=881)		WhatsApp[1] (N=872)		Twitter[1] (N=645)	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Scroll, watch, swipe	75	4.6	856	83.2	117	13.3	28	3.2	494	76.6
Comment, tag, react, like	57	3.5	241	23.4	107	12.1	24	2.8	227	35.2
Share content from others	113	6.9	184	17.9	124	14.1	44	5.0	95	14.7
Share my own photos/videos	182	11.1	61	5.9	131	14.9	110	12.6	53	8.2
Chat with friends/whānau/family	1481	90.2	14	1.4	722	82.0	781	89.6	30	4.7
All of these	78	4.8	21	2.0	86	9.8	31	3.6	43	6.7
Other	42	2.6	64	6.2	38	4.3	42	4.8	43	6.7

[1] Multiple responses possible

Table C3: Who respondents interacted with on Messenger, Pinterest, Discord, WhatsApp, and Twitter

	Messenger[1] (N=1573)		Pinterest[1] (N=1006)		Discord[1] (N=852)		WhatsApp[1] (N=849)		Twitter[1] (N=619)	
	n	%	n	%	n	%	n	%	n	%
Friends	1231	78.3	240	23.9	750	88.0	552	65.0	153	24.7
Whānau/family	1332	84.7	55	5.5	170	20.0	639	75.3	38	6.1
Peers	402	25.6	49	4.9	224	26.3	113	13.3	63	10.2
Groups	268	17.0	89	8.8	191	22.4	67	7.9	133	21.5
Brands	39	2.5	134	13.3	27	3.2	11	1.3	142	22.9
Influencers	30	1.9	263	26.1	56	6.6	13	1.5	366	59.1
Workmates	347	22.1	7	0.7	28	3.3	118	13.9	12	1.9
No one	43	2.7	453	45.0	29	3.4	30	3.5	129	20.8
Other	36	2.3	106	10.5	38	4.5	19	2.2	70	11.3

[1] Multiple responses possible

Table C4: Main reasons for using Messenger, Pinterest, Discord, WhatsApp, and Twitter

	Messenger[1] (N=1506)		Pinterest[1] (N=970)		Discord[1] (N=816)		WhatsApp[1] (N=823)		Twitter[1] (N=594)	
	n	%	n	%	n	%	n	%	n	%
Entertainment	121	8.0	549	56.6	228	27.9	53	6.4	308	51.9
Activism	32	2.1	34	3.5	20	2.5	7	0.9	81	13.6
Social Interaction	1088	72.2	20	2.1	611	74.9	595	72.3	103	17.3
Finding Information	210	13.9	302	31.1	87	10.7	81	9.8	164	27.6
Receiving Information	410	27.2	118	12.2	136	16.7	208	25.3	149	25.1
Boredom	82	5.4	393	40.5	151	18.5	39	4.7	218	36.7
News	57	3.8	13	1.3	30	3.7	22	2.7	162	27.3
All of these	86	5.7	36	3.7	45	5.5	20	2.4	72	12.1
Other	82	5.4	114	11.8	41	5.0	65	7.9	48	8.1

[1] Multiple responses possible