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Tongan Youths' Digital Engagement during COVID-19 & 2022 Volcanic Eruption

RESEARCH REPORT

AUTHORS

Dr. 'Ungatea Kata
Ilaisaane Fonua
Patricia Halaifonua



ABC INTERNATIONAL DEVELOPMENT

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Executive Summary

The aim of this study was to better understand the digital engagement of young people in Tonga and how the COVID-19 pandemic and the volcanic eruption that occurred in January, 2022, have impacted their attitudes and behaviours.

The research was carried out in September 2022, seven months after the community outbreak of COVID-19 in February, followed by lockdown enforced by the government of Tonga. The study involved eighty survey respondents between the ages of 18 and 29, which was followed by twenty interviews conducted with respondents who had agreed (during the surveys) to be part of the interviews.

The study showed that Tongan youth were very active in their online engagement and that COVID-19 affected their education and financial situations, although COVID-19 seemed not to impact their online behaviour nor was it stressful for them. Their online communication was effectively stopped after the January 2022 volcanic eruption due to an online blackout for nearly two weeks and their use and their behaviour towards the internet was impacted by the volcanic eruption.

The study focused on three main ideas, which were:

1. Tongan youths' online engagement

- Facebook was the most frequently used site, regularly accessed by 96% of Tongan youth
- 32.5% said they spend 7 or more hours online 30% said they spend from 4 to 7 hours per day online
- Young people go online most often for talking with friends, followed by school work and professional purposes
- Most used their mobile to connect to the internet
- 87.5% had not heard of the Puatonga GO! talkshow

2. How COVID-19 impacted Tongan youth

- 45% stated that COVID-19 negatively impacted their school work
- 77.5% stated that COVID-19 did not affect their mental health
- 65% said that their families were affected family financially
- 68.75% stated that COVID-19 did not directly impact their behaviour towards the internet
- 65% said that they had spent more time on the internet during the lockdown period
- 66.25% said that they did not find their online experience during the COVID-19 outbreak stressful
- 86.25% reported they did not experience online bullying
- 66.3% did not experience stress during their online experience during COVID-19 as stressful
- 88.3% did not experience peer pressure to change their digital behaviours and attitudes

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These were two different questions, and I have reworded the 66.3% statement to better reflect the differences in the two statements.

3. The impact of Hunga Ha'apai Hunga Tonga volcanic eruption on Tongan youth
 - 96.3% had no communication after the volcanic eruption
 - 83.75% of the respondents said they were not able to communicate with the people they usually communicated with
 - 33.3% had used telephones to communicate with people after the eruption
 - 51.2% said that their use of the internet has been impacted by the volcanic eruption internet shutdown
 - 60% stated that their behaviour towards the internet has changed

1. Background

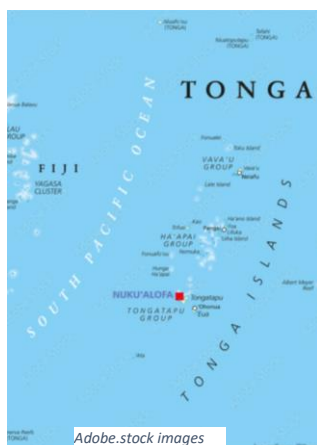
1.1 Background to the study

This research was commissioned by ABC International Development (ABCID) and carried out by Tupou Tertiary Institute Research & Training Centre, which is the research arm for Tupou Tertiary Institute located in Nuku'alofa, Tongatapu.

The study aimed to bridge the knowledge gap in understanding digital engagement of youth in Tonga and how the COVID-19 Pandemic, as well as the Hunga Ha'apai Hunga Tonga volcanic eruption has affected young people in Tonga.

One of the questions asked about a series of videos which were part of a Girls Online (GO!) Project, which had been part of an ABCID project conducted in Vanuatu and Tonga, which aims to empower young women to engage online safely and meaningfully (ABCID, 2022).

1.2 Tonga



Tonga is an archipelago of 172 of coral and volcanic islands, of which 36 are inhabited. It has an estimated population of 100,179 people, with an annual growth rate of -0.1 (Tonga Department of Statistics, 2022). According to the 2016 census (results from the 2021 census are still provisional data and yet to be officially released), life expectancy for females is 74.6 years and 69 years for males while the infant death rate is 8 per 1000 live births. Sixtysix per cent of the total population, according to the provisional 2021 population census, is below the age of 34, clearly indicating that Tonga continues its trend as a youth-bulge country. Twenty-five percent of the total population is between the age group of 15 to 29 years old (Tonga Department of Statistics, 2022) which were the age range, from 18 to

29 years old, of Tongan youths who participated in this survey.

The country is divided into six main island groups, Tongatapu, Vava'u, Ha'apai, 'Eua, Niua Toputapu and Niua Fo'ou. The latter two island groups, the most remote northern outer islands, are usually grouped together as the "Ongo Niua" or "The two Niuas". The population density per island group for Tongatapu is 283, for Vava'u, 117, for Ha'apai, 52, 'Eua, 56 and "Ongo Niua", 16 (Tonga Department of Statistics, 2022). Nuku'alofa, the capital, is located in Tongatapu and the area of "Greater Nuku'alofa" has the population of 34,142 people (Tonga Department of Statistics, 2022).

An International Fund for Agricultural Development (IFAD, nd) report on Tonga described the island as predominantly an agricultural country with 88% of its population living in rural areas and dependent mainly on agriculture and fisheries. Most are smallholder farmers practicing a mix of subsistence farming and cash crop production, growing root crops which provide food security, employment and income.

Commented [EW2]: 'Ungatea said: "I have just noticed one thing, that my in-text referencing to Tonga's recent Census is INCONSISTENT an INCORRECT in some parts. In some references I refer to it as (Tonga Department of Statistics, 2021) and some I have referring to it as (Tonga Department of Statistics, 2022). The latter is the CORRECT citation because the census was published in October, 2022. Will you be able to check for consistency in that matter?"

The report stated that Tonga's economy is fragile although it has low poverty rates and high standards of education and health. People living in the remote islands are economically challenged and employment opportunities are limited and therefore there is a constant flow of migration, mostly to New Zealand and Australia. About 25% of households in Tonga live below the basic needs poverty line. Women are particularly vulnerable to poverty but their contribution to labour is essential to family subsistence. The report exposed that there is a decline in the rural population due to migration and lack of initiatives for young people to remain in rural areas and this means that farmer population is aging which will lead to labour shortages, which has implications for food self-sufficiency in the long-term (IFAD, nd).

Tonga is extremely vulnerable to natural disasters. According to the World Risk Index in 2021, Tonga is third highest disaster risk country in the world, with Vanuatu ranked first and Solomon Islands ranked second. Tonga has experienced three extremely destructive category five cyclones, a few less powerful ones, a drought, a massive volcanic eruption and a tsunami, in the last seven years. These natural disasters have huge detrimental economic impacts. Cyclone Gita in 2018 is stated to have the damage equivalent of 39% of the country's GDP while initial assessments of the January 2022 volcanic eruption show about 3% damages of the GDP in the agricultural sector alone (Latu-Sanft, 2022).

1.3 Hunga Ha'apai Hunga Tonga Volcanic eruption

Tonga experienced a massive volcanic eruption on January 15th, 2022. It was the largest recorded volcanic eruption since the eruption of Krakatoa in 1883 (OCHA, 2022, Jan) and was one of the most explosive in the 21st century. According to volcanologists worldwide, this kind of event happens once every 900 years (DW, 2022). The volcanic eruption created a Tsunami which wiped out the entire island of Mango in the outer islands of Ha'apai, affecting nearby islands as well as the villages at the coastal areas of Nuku'alofa and western side of Tongatapu and the western coastal areas of 'Eua. Eighty four per cent of the population on Tongatapu, Ha'apai and 'Eua were affected, especially by ashfall and approximately 3,000 people were displaced in the immediate aftermath. Most returned to their communities, although families evacuated from the badly affected islands of Ha'apai, have remained on Tongatapu and have been given lands by the government for relocation (OCHA, 2022).



The volcanic eruption damaged the undersea internet cable which lay near this volcanic eruption sea area (Bateman, 2022). As a result of the extensive damage to the internet cable, there was a breakdown in all communications with the outside world for about two to three days. Within the Tongan local communities, there was only one radio station that was working during these very challenging times. There was an online blackout for approximately five days, and then there was intermittent weak connections for the next few weeks until the Tongan government negotiated with Kasifiki Communications company and local communications companies were able to use their satellites.

After five weeks of limited access, the internet cable was fixed but only for the main island of Tongatapu.

When this report was written, the underwater internet cable connection to the northern outer islands was yet to be fixed. The outer islands of Vava'u and Ha'apai are still using Elon Musk satellite terminals equipment, donated by the billionaire businessman Elon Musk to the Tonga government as support for the volcanic eruption recovery efforts (NDTV, 2022).

1.4 COVID-19 in Tonga

On the 21st of March, 2020, Tonga's then Prime Minister, Pohiva Tu'i'onetoa declared a State of Emergency for Tonga to help the country prepare for COVID-19. Although the country had not yet received a COVID-19 case, on the 23rd of March, 2020, Tonga closed its international borders because of the Global Pandemic and only one international flight arrived in Tonga every week from then onwards. All Tongan citizens and emergency officials arriving in Tonga had to go through a 14 day quarantine period. Nightclubs, bars and kava clubs were closed and public gatherings were restricted to 20 indoors and 40 outdoors. The State of Emergency declaration was followed by a national lockdown for two weeks from the 29th of March to 12th April (WHO, 2021). Tonga's Ministry of Health started the national COVID-19 vaccine roll out on Thursday 15 April, 2021 and continued with an extensive vaccination campaign which resulted. On the 27th October, the first case of COVID-19 found in Tonga was reported, and found in a returning Tongan. Before the case was reported, only 35% of the population had had their first vaccination. By the end of October, 62% of the vaccinated age had had their second dose and 88% had had their first dose. The government announced a seven-day lockdown in Tongatapu, which is the main island, following the same restrictions for the 2020 March-April lockdown (WHO, 2021).

COVID-19 community outbreak cases were found in February, 2022, two weeks after Tonga underwent the massive underwater volcanic eruption on the 15th of January. When these community cases of COVID-19 were confirmed, a national emergency period was announced by the Government of Tonga, with two weeks of hard lockdown followed by a series of "orange" code restrictions and curfews

All schools were closed down from February 2022 and tertiary institutes as well as secondary schools were opened in May 2022 followed by opening of early childhood centres as well as primary schools on Monday 06 June 2022.

Education was severely affected during this period. UNICEF (2022) calculated that due to COVID-19, over 32,000 Tongan Children lost over approximately 510 hours each of in-person learning as a result of the 17-week lockdown and the recent natural disasters. The Ministry of Health and Ministry of Education partnering with local NGOs staff conducted site visits to secondary schools and tertiary institutes to ensure that COVID-19 notices were implemented by schools before they could open. During the period of school close down, the Ministry of Education offered classes via radio programs and television programs and also tried to establish online learning tools, such as Moodle, for senior secondary school students. Teachers in secondary schools were asked to prepare

photocopied notes for students and to find ways of distributing these notes while adhering to the COVID-19 restrictions. There was no data collected on whether students could follow these notes and do the exercises by themselves. There had been no recorded specialised trainings for staff to conduct educational programs via radio and television. Online learning tools were problematic because the majority of students had difficulty accessing the internet (mostly because of the costs) as well as not possessing appropriate equipment, such as personal laptops or computers) to be able to effectively use online tools.

Tonga's economic situation, according to the International Monetary Fund Mission Concluding Statement (2022, May 13), has been severely affected by the volcanic eruption and the COVID-19 outbreak in 2022. Inflation rose, the fiscal balance switched to a deficit, short term growth is subject to large uncertainties, the balance of risks is tilted to the downside, the medium-term outlook is weak and Tonga is in high risk of debt distress.

1.4 Online Engagement in Tonga

Tonga passed the Electronic Communication Abuse Offences Act in 2020, which regulates electronic communication abuse in Tonga. The Act is focused on preventing abuse and harm through postings using electronic communications.

Internet traffic is mainly dominated by social media according to Mr. Samiuela Fonua, the Chairman of Tonga Cable Limited, the Tongan government owned company responsible for the underwater internet cable. He explained that in the month of August 2022, the internet traffic for Facebook and Google was 62.7% and 60.9% for September (personal communication, Oct 18 2022). He said that this percentage fluctuates but social media continues to consistently dominate most of the internet traffic.

Internet access in Tonga is a costly activity for Tongan families because both TCC and Digicel, the main internet provider businesses in Tonga, charge \$65 for 35 gigabytes as an average costing. Although there is lack of research if families in Tonga find this costing affordable, researchers' experience during the Covid-19 period when there was a low-rate of student involvement when they were asked to use Zoom or other educational internet platforms, suggests that families in Tonga most likely cannot afford this costing.

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2. Methodology

The *purpose* of this research project was to understand digital engagement of young people in Tonga and the impact of the COVID-19 pandemic and the volcanic eruption, on this engagement. The research focused on assessing cyber behaviours within the ecosystem of psychosocial, health, education, and vocational COVID-19 impacts. The study was carried out in September 2022, one month after Tonga's international borders were opened.



Staff researchers' training workshop

One of the key aims of Tupou Tertiary Institute's research and training centre is to involve TTI staff and students in actual research projects, as this will give them opportunities to build their research skills, especially in the data gathering process. In addition, staff and student researchers learn a lot about the focus areas of the research and therefore their awareness of

those issues increases and this can provide direct and indirect ways of disseminating information about the research topic.



Training of student researchers for data collection

For this research, the two staff researchers and ten

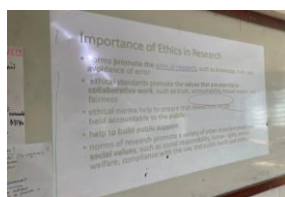


Training of student researchers

student researchers were from TTI's School of Information and Technology (SOIT). TTI Research Centre invited SOIT staff to participate, not only because they had been involved in prior research

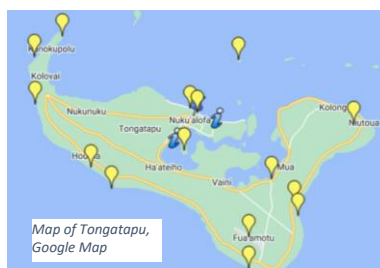
conducted by the centre, but because as the topic of the research was about young people's digital engagement, it was felt that it was most appropriate to involve SOIT staff and students in this research so they can learn how their peers from the communities felt about digital engagement. This model builds the research capacity of both TTI staff and students.

TTI staff researchers met with the ABCID research team via Zoom for a training session in terms of the research tools to be used, which were surveys and interviews. The TTI staff research team reviewed and translated survey and interview questions, consent forms and other necessary documents. The survey and interview questions were similar to those used by the ABCID research team in a similar study conducted in Vanuatu in March 2022 (personal communication, August 12, 2022).



The TTI staff research team also planned for the training of the student researchers as well as the mapping out the logistics needed for the research, such as the selection of districts and villages where the surveys will be conducted.

The study was conducted on the main island of Tongatapu because of time constraints and because it holds approximately 70% of Tonga's total population. The survey was to cover respondents from four main district areas in Tongatapu; *Vahe Kolo* (Urban district), *Vahe loto* (Central District), *Vahe Hihifo* (Western district) and *Vahe Hahake* (Eastern District). Although there was only a small number of surveys, the distribution of the surveys considered the proportion of population in each district.



Student researcher conducting survey in village; Photo credit: [redacted]

40 surveys were conducted in the Greater Urban area of Nuku'alofa, because it has the largest population percentage in Tongatapu, with 20 surveys for each of the two main areas of the Greater, Kolomotu'a and Kolofo'ou. There were 12 surveys conducted in the Eastern district, 10 surveys in the Central District and 8 surveys in Western district. In each district there is a group of villages and respondents were from each village within that district. Each student researcher conducted eight surveys and two interviews. Student researchers were conducted their surveys and follow up interviews in the districts where they lived because of their familiarity with the villages in that district.

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There were 3 main research questions:

1. How do young people engage online?
 - a. what platform/s are used?
 - b. what is the frequency and duration of usage
 - c. what is the purpose of engagement
 - d. how do they access the internet
 - e. have they watched the *Puatonga GO! TalkShow*
2. Has the COVID-19 Pandemic changed youth digital behaviours, attitudes, experiences? (e.g., through the impact of school closures, mental health strain, family financial stress) changed youth digital behaviours and attitudes?
3. What has been the impact of the volcanic eruption on Tongan youth



Student researcher conducting survey in village. Photo credit: Uasi Kohinoa.

The study collected qualitative and quantitative data, using the following methodology:

1. *Face-to-face survey*– TTI Research and Training Centre staff team trained ten students from TTI's School of Information Technology who conducted eighty surveys.
2. *Follow-up interviews* with twenty participants who had completed the e-survey
Language: To ensure optimal access and communication, the survey and all interviews and discussions were carried out in the Tongan language.

The data collection resulted in a total of 80 collected face-to-face survey respondents and 20 follow-up interviews. All responses were entered into the TTI data collection records.

There were 47 females and 37 males included 3 different age groups, ranging from a minimum age of 18 to a maximum age of 29.

2.1 Limitations of the study

The study was conducted face to face in September and this could happen because the COVID-19 restrictions were lifted in August 2022. Student researchers were allowed to enter people's homes because of the lifted COVID-19 restrictions.

The survey and interview questions were translated into Tongan so that the people surveyed and interviewed in the Tongan communities could read and understand the survey and questions and participate as best as they could.

There were subtleties in the translation that could have affected the meaning, such as the translation into Tongan of the words “direct impact” in Section 3, question “d”, “Did COVID-19 *directly* impact your online behaviour or attitude?”. There is no real distinction in Tongan thinking between direct and indirect impact, so the translation simply used “uesia” which is the word for “affect/impact” so the answers respondents had may not have focused on “direct impact”, because of this linguistic and cultural difference.

The youth that were part of the study were more educated than the general population and did not include people with diverse sexual orientation.



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The proposed change to the sentence has been made.

3. Results

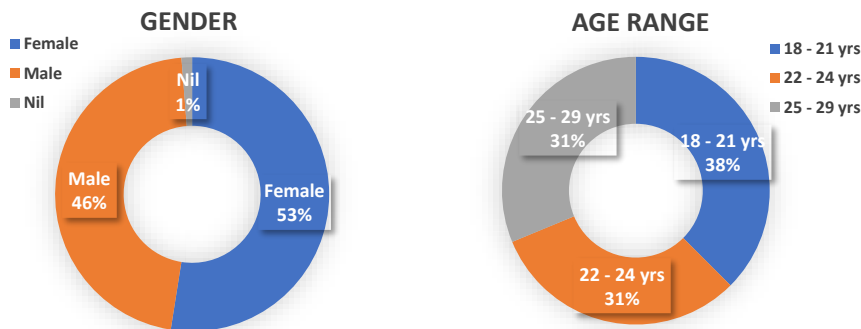
3.1 Survey Results

The survey results are divided into 4 main categories: demographics, online engagement, and the impact of COVID-19 on online engagement, direct and indirect.

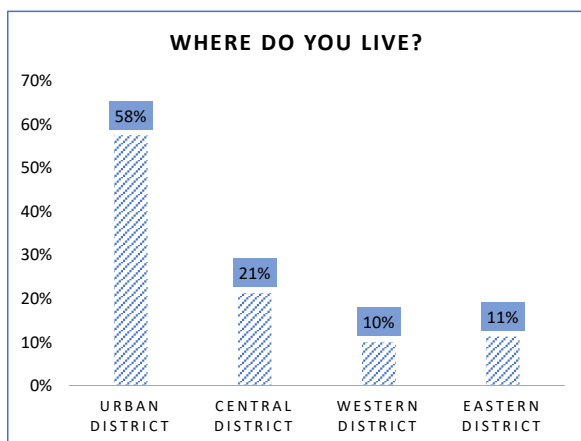
3.1.1 Demographics

In terms of *age*, the study only included young people between the ages of 18 and 29. Of the 100 respondents, 30 (38%) were 18 to 22 years old, 25 (31%) were between 22 and 24 years, and 25 (31%) were between 25 to 29 years.

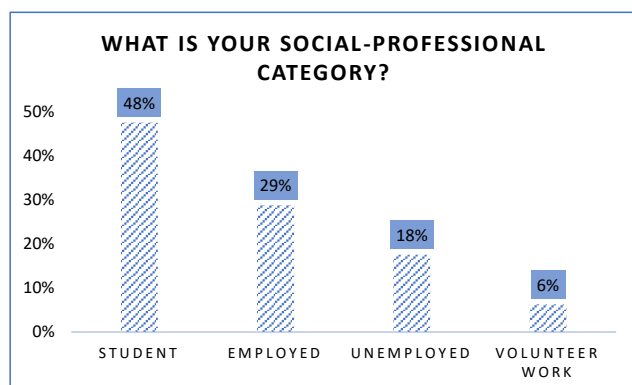
With regard to *gender*, 52.5 % were female and 47.5% were male.



The survey participants were from the four main districts of the main island of Tongatapu. 57 % of respondents were from the urban and densely populated area of “*Vahe Kolo*”, (Central District) which includes the main urban area of Nuku’alofa and its suburbs, 21.25% from “*Vahe Loto*”, the Central District in the middle of Tongatapu, 11.25% from the “*Vahe Hahake*” the Eastern District and 8.75% from the least populated villages of “*Vahe Hihifo*”, the Western district. The survey had respondents from all main villages of these districts.



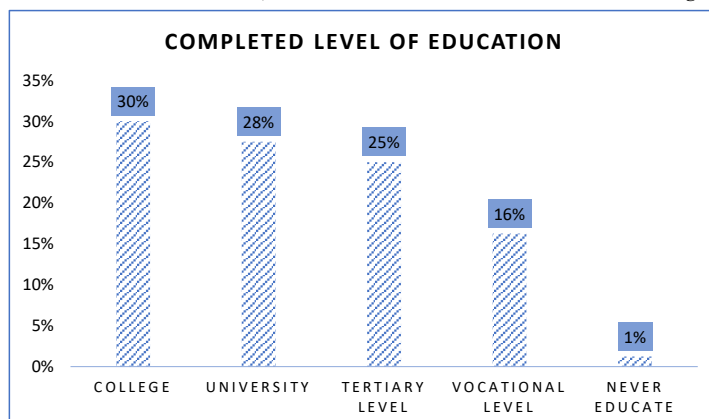
Looking at their social-professional category, 48% were students, 29% were employed, 18% were unemployed and 6% were engaged in volunteer work. The number of students who were respondents is an over-representation of the overall 5% of the population which are currently enrolled in higher education (Tonga Department of Statistics, 2022).



With regard to *education* 30% of the respondents had completed secondary education, 28% were engaged in universities, 25% were engaged in other tertiary institutes, 16% engaged in technical or vocational institutes and only 1% stated that they had not conducted any studying of any kind.

The provisional results from the 2021 census shows that 19% of Tongans have completed secondary education (Tonga Department of Statistics, 2022).

When respondents were asked if COVID-19 directly changed their thoughts, attitudes and behaviours towards their use of the internet, 46.25% stated that COVID-19 had changed their thoughts, attitudes and behaviour in using the internet while 53.75% stated that it did not. When asked if COVID-19, had indirectly changed their thoughts and attitudes and use of the internet, 65% said yes it did and 35% said COVID-19 did not change their thoughts, attitudes and use of the internet.

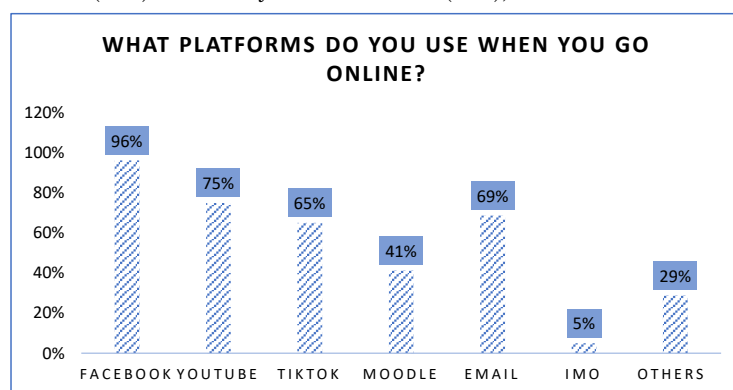


86.3% of respondents stated that they did not have any disabilities while 13.7% stated that they had some disability. This is quite a large percentage of disabilities in comparison to the 5.7% national percentage of disabilities for Tonga (Tonga Department of Statistics, 2022).

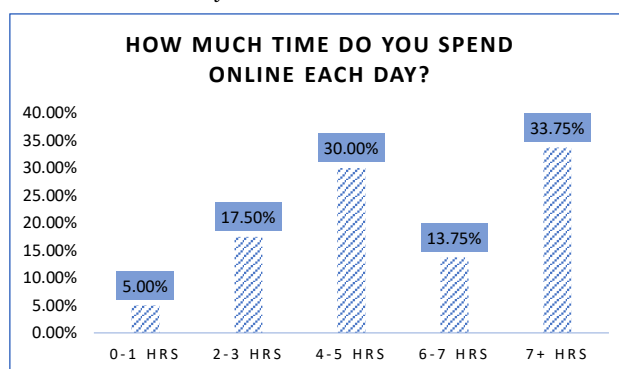
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3.1.2 Online engagement

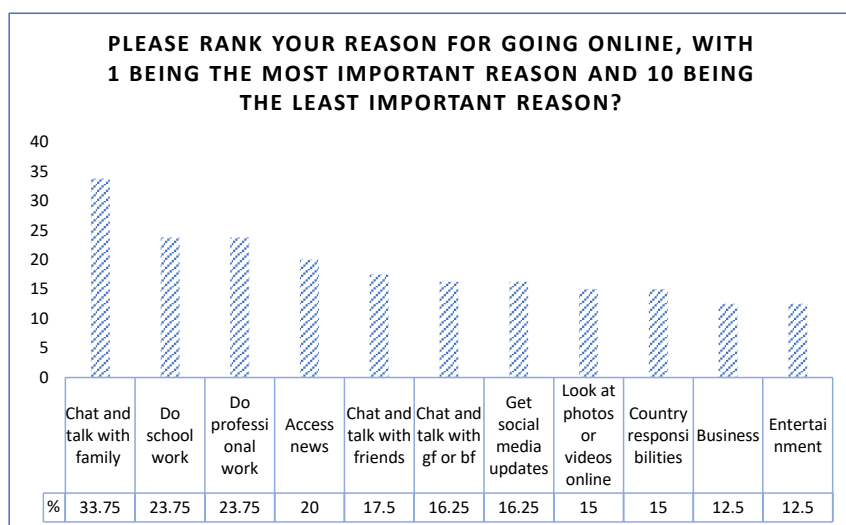
In the area of online engagement, respondents were first asked *what platforms or sites* they used when going online, checking all that applied. The results showed that Facebook was used most often (96%). Facebook was followed by YouTube (75%), email access sites (69%), TikTok was next (65%) followed by Student Moodle (41%), then other social media such as Instagram (8.75%) and Imo (5%), which was same usage as Google scholar (5%).



Next, respondents were asked *how many hours* they think they spent online on a daily basis. 33.75% of the respondents stated that they were online for more than 7 hours. 30% said that they spend 4 to 5 hours online and 17.5% said they were online for only 2 to 3 hours. 13.75% said they spend between 6 to 7 hours, and only 5% said they were online one hour or less daily.

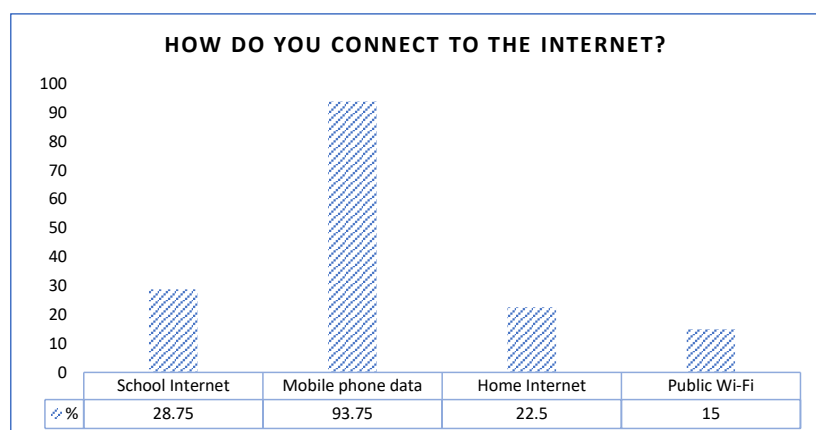


When asked *why they go online*, the most highly ranked reason were to talk with friends or family (33.75%). The two most second highly ranked reasons, with 23.75% respectively, were for conducting school work and doing professional work. This was followed by news (20%), talking to friends (17.50) and talking to boyfriend or girlfriend was ranked the same with news (16.25%). The next three in ranking were looking at photos or videos online (15%) which was the same as for conducting cultural activities (15%), lastly for entertainment and for use of business.



Next, respondents were asked *how people connected to the internet*. The majority (93.5%) of respondents indicated that they used mobile data connections, 28.75% stated that they used the school internet and 22.5% used home internet with only 15% indicating that they connected through places with free internet.

Respondents were then asked whether they had watched the Puatonga GO! talk show on the internet and a majority of 87.5% said that they had not heard nor watched the show while only 12.5% stated that they had. When those who stated that they heard the show were asked if the program had raised their awareness of how to use the internet, especially inappropriate usage of internet, they stated that yes this program had helped them better understand how to use the internet, to be more wary of using inappropriate behaviour in the internet, and to think again when using the internet.



3.1.3 Impact of COVID-19 on digital behavior, attitude and experience.

In the third section of the survey, the respondents were asked about the impact of COVID-19 in relation to schools closing, mental health, and financial stress. It also explored if digital engagement, face-to-face interaction, online bullying, and the overall experience of online engagement were affected.

Schools in Tonga were closed for only about 2 weeks in March 2020 when the State of Emergency was first declared, and social distancing, hygiene, and other protection measures were put into place. Schools were closed again for 2 months following the first community outbreak in February 2022.

During the lockdown times in 2022, the Ministry of Education gave radio and television programs for primary and secondary students and attempts were made to move some aspects of senior high school to online tools. Tertiary institutes also tried to move online; whether all were successful in this transition, is another matter.

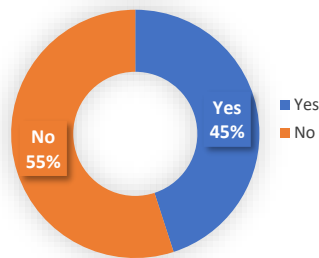
Respondents were asked *if the school closures negatively affected them*. Overall, 45% said that there was a negative impact and 55% said there was not. However, from the 55% of Tongan youths who stated that school closures did not have a negative impact on them, 34% declared that they were not studying. Therefore, although there were only two choices posed by this question, the results showed there were actually three groups: 45% who were currently studying who stated that there were negative aspects and the second group of 36.25% who stated that their education was not affected and then there was 18.75% which the question did not apply to them, as they were not studying during this time. Therefore, for those who did attend educational institutes, nearly twice as many students felt that school closures had a negative impact on their work.

The students who stated that there were no negative impacts gave their reasons as they had more time to concentrate on their studies, they had good internet connection in their homes, that they were able to utilize learning tools given to them by Ministry of Education, such as Moodle sites.

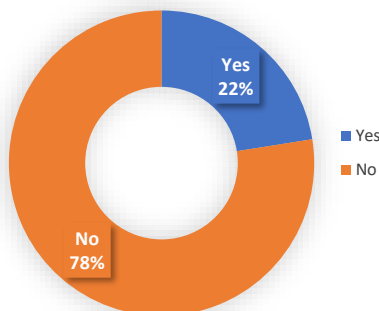
Of the respondents who stated that there were negative impacts, their reasons included: staying at home meant that they did not get to do much of their studies, they had no access to computers, lacked knowledge about educational internet platforms such as Moodle to effectively engage, preferred face to face interactions with tutors, or were easily distracted by using the internet. There was lots of work but they did not have adequate support at home and felt that the COVID-19 lockdowns meant loss of time for teachers to cover material in face to face teaching interactions.

When respondents were asked if their mental health was affected by lockdown, 77.5% stated that it did not and 22.5% stated that it did.

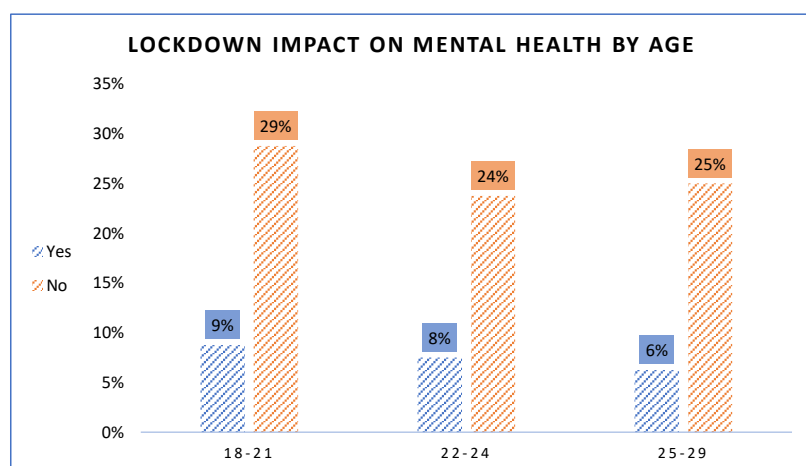
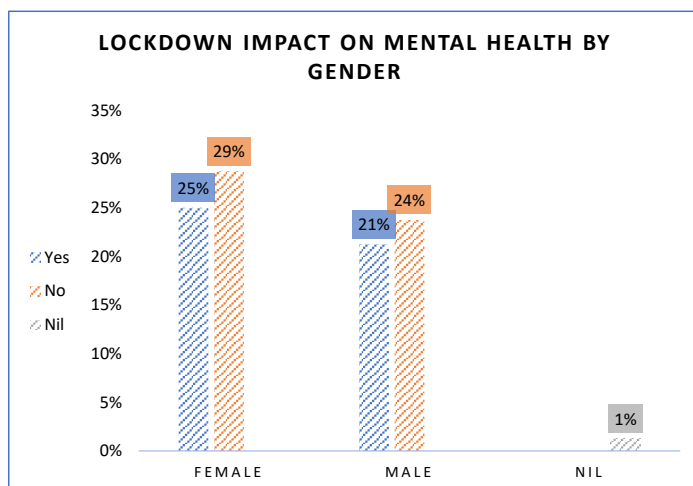
DID THE SCHOOL CLOSURES NEGATIVELY AFFECT YOU?



DID THE LOCKDOWN IMPACT YOUR MENTAL HEALTH?



There were no significant differences between how males and females thought of the impact of COVID-19 on their mental health, with both males and females strongly indicating that they did not feel that their mental health was impacted by COVID-19.



Although 18 – 21 year olds were the most likely (29%) to state that their mental health was not impacted, the same trend appears in the two other, older age groups.

The young people who stated that their mental health had been affected felt that staying at home and not being able to go anywhere was very unhealthy, that they felt a range of emotions such as feeling imprisoned, fearful, stressed, confused, did not know what to do, could not contact close relatives living overseas, could not study by themselves at home, easily distracted when studying at home and were not able to concentrate well.

They commented that staying at home meant using the phone all the time and not doing any real work.

“lahi taimi ki he me'anoa'ia, kae 'ikai tokanga ki he ako, uesia taimi ako” (a lot of time wasted in doing tasks that were not useful and did not concentrate on my studies)

“puputu'u fakakaukau boring doing the same thing everytime” (my mind was full of confusion and [I was] very bored doing the same thing every time)

However, the majority of youth that stated their mental health was not affected, felt that this had been a positive time to spend with family, it was a good time to have a rest, a stress-free time, watching movies or rest time, that it was a good time to focus on home tasks,

“Oku 'ikai uesia au 'e he lockdown, 'oku tokoni ke u rest ke sai 'eku fakakaukau mo e 'atamai” (I am not affected by the lockdown, it helped my mind have a good rest)

“Ne ma'u faingamalie ke mālōlō faka'atamai pea feohi mo e fāmili” (It was a wonderful opportunity to rest my mind and connect with my family)

“Oku hoko pe nofo 'i 'api ke feohi mo e fāmili, talanoa mo kinautolu pea lelei e me'a kotoa” (*Staying at home is a great time to stay with family and talk to them and things are fine*)

Respondents were asked if he or she or their family was affected financially or economically by COVID-19, 64% stated they were affected and 34% stated that they had not been impacted financially. Respondents who had indicated that they had been financially affected stated that the lockdown times severely affected their financial status. Banks were closed and they had no access to cash. They had specific and increasing needs during lockdown times but could not find the finances to meet those needs, some had small family businesses such as selling of crops and because the market was closed, that meant that this financial income was no longer viable for that. Some stated that even though some of the family members had employment, they were scared because they may get COVID-19 and therefore did not go to work and therefore did not get any payment.

Those who stated that they had not been impacted financially said that they had been well supported by welfare groups, others said that they could go to the bush and ocean for food and that their overseas relatives helped them a lot during this time. Others stated that they were still able to work and had some financial income during this time.

Respondents were asked about *the impact of COVID-19 on online engagement* and when asked if they thought that COVID-19 directly changed their behavior, attitude, or experience online, 68.75% stated that it did not and 32.25% stated that it did. Researchers feel that the translation of this question may have resulted in a slightly different interpretation of this question by respondents. The English words “direct impact” do not have a literal translation in the Tongan language, so the question in Tongan was worded as “Did COVID-19 impact your behaviour and thoughts about the internet?” (*Na'e uesia nai 'e COVID-19 ho'o 'ulungaanga pe tō'onga fakakaukau ki he*

'initaneti?). From respondents answers to the open-ended question of why they have said yes or no in QF4.4, respondents seemed to have interpreted the question in a longitudinal manner, as in has COVID-19 affected your general thoughts and experience of the internet?, because for the majority who replied “no” seems to have interpreted that COVID-19 has really not *significantly* impacted their behaviour and ideas about their use of the internet.

Commented [JB8]: This is very interesting!

The majority of this group which felt that COVID-19 did not have any impact on their behaviour stated that their only change was because they had less money for internet, they had more time with their family members (alluding to lock-down time), so they used the internet less. Respondents who did state that COVID-19 impacted their behaviour and thoughts about the internet, stated that they used more internet because they were using more internet educational platforms for their learning from home, such as Zoom and Moodle.

For the respondents who felt that that their behaviour, attitude and experience were directly impacted by COVID-19, they said that they used more of the internet to search more information about COVID-19, its impact and consequence, and because they had to spend a lot of time at home, they felt lonely when they could not connect, such as using videocalls with friends and relatives overseas.

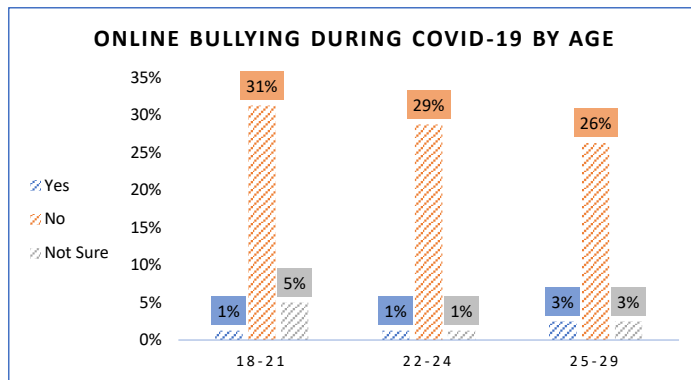
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Respondents were asked if they had spent more time on the internet during the lockdown period and 65% said yes they had and 35% said they had not. When respondents said that they had a lot of free time during the lockdown period, they spent their time on the internet playing video games, watching movies, using social media such as Facebook to communicate with relatives, family and friends. They said that they used more internet for educational purposes such as completing assignments in Moodle, as well as those who worked were required to use internet to work from home.

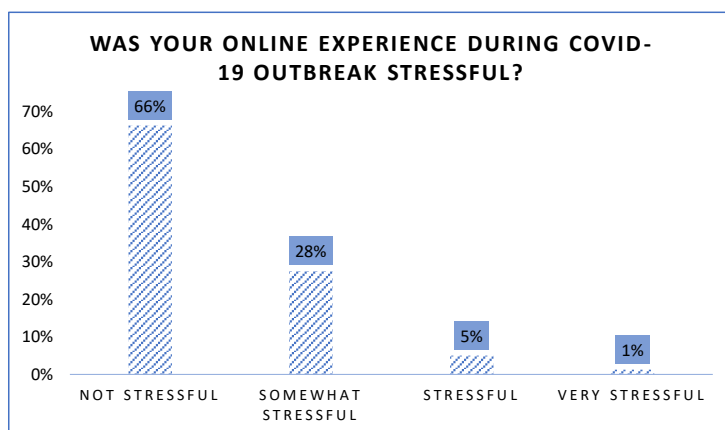
Respondents who stated that they had not spent more time on the internet said that they had other chores to do at home to help their family, had to complete assignments, spent relaxed time, and that there was no money to buy internet access.

When respondents were asked if they experienced *online bullying* during COVID-19, 86.25% reported they did not, 5% said they did not and 8.75% were unsure.

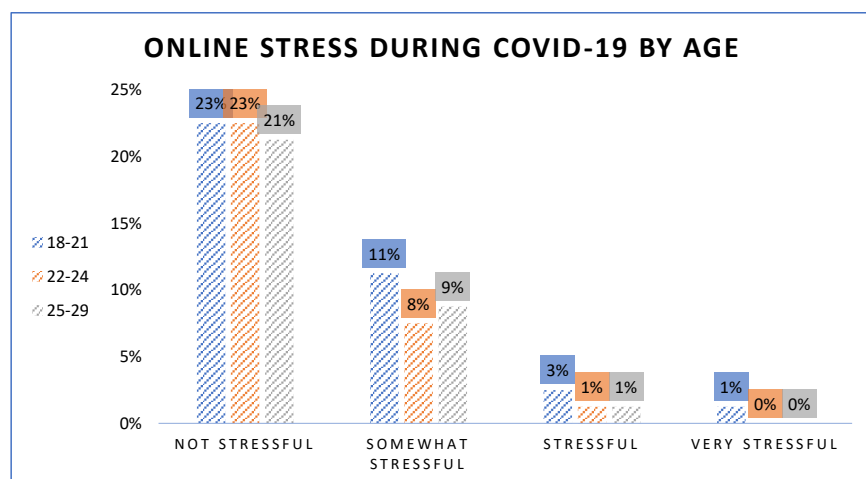
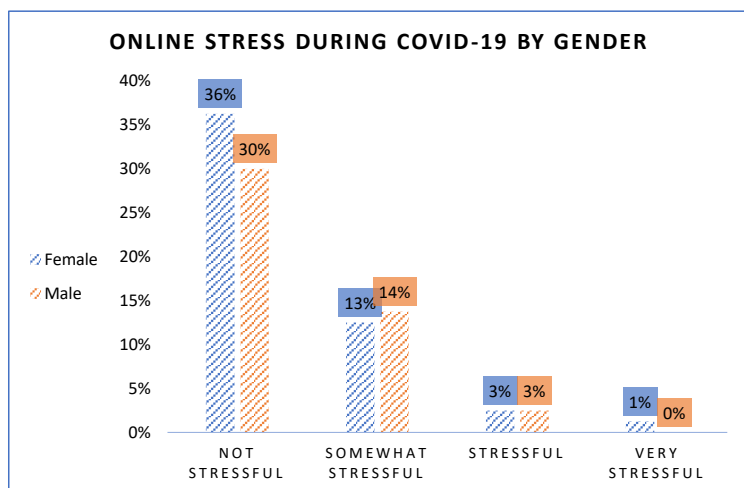
All age groups similarly felt that had not experienced online bullying during COVID-19.



Respondents were also asked *if online experience during the COVID-19 outbreak was stressful*. 66% said that they did not find it stressful, 28% said that that it was somewhat stressful, 5% said that they it was stressful and only 1% felt that it was very stressful.



There was little difference between genders in finding online engagement stressful, except that there were more women (36%) who felt it was not stressful than men (30%), meaning that perhaps males found online engagement just slightly more stressful than females. There were no significant differences by age division, as all three age groups reflected the general trend that they did not find online engagement stressful.



Respondents were also asked if they experienced peer pressure to change their thoughts and behaviour about using the internet, 86.25% stated that they did not and 13.75% stated that they did experience peer pressure to change their thoughts and behaviour about using the internet. Of the respondents who stated that they did not experience peer pressure to change their internet behaviour and said that their friends provided positive support, some stated that they did not have that many friends to communicate with as they spent most of their time with family members, and that their internet was not working. There were a group of respondents who stated that due to COVID-19, they were not seeing their friends in person, therefore, they did not feel pressured to use the internet, or they experienced less pressure to use the internet. This may be an interesting

point about the importance of face to face interactions between Tongan peers (that they are under more pressure to do something when they see each other all the time).

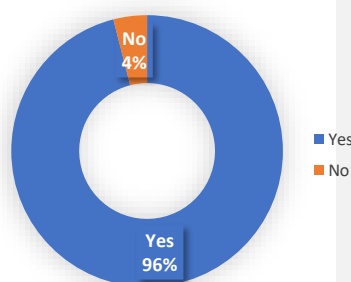
Respondents who indicated that they did experience some peer pressure for their internet behaviour to change, gave their reasons which included that their friends had some strange, untruthful ideas about COVID-19 and that they ended up believing these friends, sometimes because they had not seen these friends for a while they were under pressure to sort of show acquiescent to their friends beliefs, that their friends tried but managed to resist.

3.2 Impact of Hunga Ha'apai Hunga Tonga Volcanic Eruption in January, 2022

Respondents were also asked about the impact of the volcanic eruption in January 2022 on their internet usage.

When they were asked how the volcanic eruption in January impacted their ability to use the internet, 77 (96%) respondents stated that the cable was damaged and they had no access to any form of communication. It was confusing and quite boring to some of these respondents. Only three respondents (4%) stated that they were not affected, one because he was overseas during that time, the other was because he worked in his local farm and does not use the internet that much anyway and one just stated that it did not affect them.

DID THE VOLCANIC ERUPTION IMPACT YOUR ABILITY TO USE THE INTERNET?



When asked if, whether straight after the volcanic eruption period, they were able to communicate with the people they usually communicated with, 84% of the respondents said they could not and 16% said they still could.

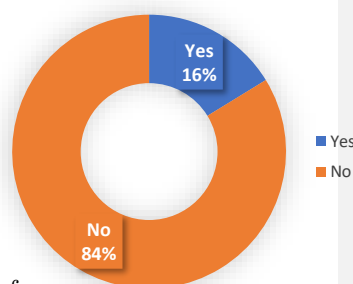
Respondents were then asked how they communicated with the people they usually communicated with using the internet, the majority of them (33%) had used their telephones (23%) to phone or to text (10%) relatives or friends. 28% said that they had no communication with the people they usually communicated with, and 12.5% said that they went and visited these people in person, 7.5% said that they used radio announcement and 2.5% said they used the satellite wifi that was temporarily installed to facilitate initial communications outside of Tonga when the internet fibre cable was damaged. 5% did not given any reasons.

Respondents were asked if their internet usage had been affected by this internet shutdown because of the volcanic eruption. 51.25% said yes they had been affected and 48.75% said that their internet usage has not been affected.

The reasons given by those who had said yes that they had been affected, included:

- They can reduce their usage of the internet, reduce the number of hours spent on the internet and saw that they can do other chores, such as reading their bible
- Not to overly rely on the internet, because it will not be there all the time
- Seeing that they can spend more time with family at home
- Increase use of internet so that one is aware of international events
- Aware that there were other forms of communication, not just the internet

WERE YOU ABLE TO COMMUNICATE DURING THE ERUPTION PERIOD?



The reasons given by those who said that their internet usage had not been affected, included:

- Since the internet was back, respondents went back to how they had used it before the volcanic eruption.

Finally, respondents were asked if the volcanic eruption has changed their priorities in their behaviours towards the internet, 60% stated that yes, while 40% stated that they have not changed their internet usage. The reasons of those who stated that yes their internet priorities and internet behaviours have changed was that:

- They better understood
 - that it was wise to increase more time with family, to spend more time with God
 - to reduce use of the internet such as watching movies and Facebook
 - to use the internet wisely such as using it only for communication with family
 - to be a more critical user of the internet understanding that there are both lies and truth in the internet
 - international events
 - educational tools for e-learning

Respondents who felt that they have not changed, gave their reasons as unable to change their internet usage habits. Some stated that they had been small internet users, so that's why they indicated that their behaviour has not been changed because they continue to use only small amount of the internet.

3.3 Results from Follow-up Interviews

There were 20 follow-up face to face interviews conducted among respondents who had agreed to be part of follow up **interviews**.

The interview questions consisted of four main parts, which were: online engagement, security when using the internet, accessing internet information about COVID-19 and mental health.

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3.4 Online engagement

The first section of the interviews was about interviewees' use of the internet. Respondents were asked if they felt that they had changed their use of the internet during the COVID-19 period, 60% said that they had not changed their internet use while 40% said that they had changed. The main reason given by those that had not changed their internet usage, was because they went back to their normal use of the internet, that even before COVID-19 they had balanced their internet time with home duties and a few indicated that they used the internet in a quite limited way.

For those who said they had changed their use of the internet during COVID-19, all of them indicated that they had increased their use of the internet since COVID-19, and that they had not known how to use the internet well but were now using the internet more competently, with one stating that they were using social media more as a result.

As discussed earlier, schools in Tonga were closed in February 2022 for COVID for four months until May 2022. When asked if online engagement helped them with school work, work or socially, 85% of the respondents said yes. The reasons they cited for helping them with school work included helping them with their research, completing assessments and using accessing Moodle. Only two respondents said that online engagement did not help them with their school work, but one of them stated that it was because they were not studying and the other person said that they did not usually use the internet that much.

When asked if their use of the internet helped them with their professional work, slightly more than half of the respondents noted that it helped them to do their work online, such as emailing, accessing work databases and communicating with their employers. Those who indicated that their internet usage did not help them, stated that they were not professionally employed, that they worked at home and did not use that much internet.

Nineteen out of twenty respondents said that the online engagement helped them to stay connected socially and they were able to communicate with their family, relatives and friends through the social media such as Facebook messenger.

Just slightly more than half of the respondents acknowledged that online engagement was distracting:

- *Taimi malolo ko ia e ngāue, ko e tangutu pe he neti, hanga hake ku óva taimi mālōlō ia 'aku he taimi tuku mai ke fai ai e mālōlō.* (When it is break time during

work, I engage with the internet and then realise that one has gone over the break time)

- *Io ko e taimi lahi oku fa'a tohoaki'i au he neti keu siofaiva mo e Facebook kae si'isi'i pe taimi ako ia* (yes, a lot of times the internet makes me watch movies and Facebook and have little time for studying)

Slightly under half of the respondents did not feel that they were distracted by their online engagement because they knew that there were other priorities for them, and that they concentrated on their work which earned them the income to support their families.

When asked if they paid for their own telephone card and/or data, 70% said that they did not pay for this expense themselves and only 30% indicated that they paid for this internet data themselves. The majority who did not pay for their internet expense were asked who paid, and their answers included family living overseas, parents, or friends. This group was also asked whether they felt that this expense was a large part of their expense budget. More than half of this group stated no, with 40% stating that internet expense were not a large part of their budget.

Respondents who stated that they did pay for internet access themselves, were asked if they knew how much they spend on internet data, per month. The answers ranged from \$5 to \$200 dollars per month spent on internet data, with an average of \$TOP44 monthly.

3.5 Security

When they were asked if they knew of any ways of keeping safe while using the internet, 50% said they did and the other half said they did not. Those who felt that they did know of ways of keeping safe while using the internet gave the following reasons:

- Keep away from false advertisements and don't give out any such information on the internet
- Careful of using social media (not to share personal photos or information)
- To use the internet appropriately
- Download antivirus

When asked how they knew about these safe ways, they responded that they were studying Information Technology, they knew about these ways from school, from the internet itself, and had also watched television programs which had discussed these safe ways.

The respondents were then asked if these "safe ways" help them. Half of this group stated that yes, these safe ways have helped them.

Respondents were also asked what they thought were the greatest dangers to Tongan youth in their use of the internet. Their answers included:

- *when the internet is inappropriately and disrespectfully used, it leads to taki hala'i 'a e to'utupu, tohi mo e motu'a mali, nofo mei he ako, li'aki 'a e ako kae hola mo e kaume'a* (distracting young people, such as a young woman writing to a married man in the internet and then leaving school to run away with this man)

- *expose ki he pornography, ngaue'aki hala'i 'imisi 'a e kakaikehe (identity theft) fraud, fe'aveaki 'a e ngaahi video moe imisi 'Ikai taau*
- *cyber bullying*
- *young people are mentally affected*
- *Lava pe kenau tō ki he palopalema hangē koe tuli mei he ako, fa'u e ngaahi peesi loi he initaneti pea faitā o tukupake he 'initaneti ta'efaka'apa'apa.*
- *Causes social friction when two persons sends posts to each other.*
- *Maú nimaa kinautolu ó íkai toe lava énautolu fai ha ngaue, íkai toe tokanga kai e níhi, fakatata ki he kau PUBG níhi kau leka íkai toe tokanga kai nautolu*
- ***They are captured and cannot do any other work, some don't pay attention to eating, for example the PUBG, some of them they do not pay attention to eating***
-

Commented [EW11]: translation?

3.6 COVID-19 Information

When asked if online engagement was a good way to receive accurate and reliable information about COVID-19, COVID-19 symptoms, COVID-19 vaccinations, government reports on the spread of COVID-19, only 60% said yes. Their reasons included that:

- *Na'e tokoni ki he ma'u fakamatala fekau'aki mo e covid, mo e founa faka'ehi'ehi mei he mahaki koviti* (It helped to give explanations about COVID-19 and ways to prevent the spread of COVID-19).
- *Oku tokoni lahi 'aupito 'a e ngaahi ongoongo mei he Potungāue Mo'ui hono update e ngaahi faka'ilonga oe COVID-19* (The news update from Ministry of Health really helped)
- *Na'e ma'u ai e ongoongo fekau'aki mo e COVID- 19* (We received from the internet news about COVID-19)
- *Me'a oku 'i ai ngaahi kakai poto 'i muli mo e ngaahi article pē* (...there are informed people from overseas and other news articles as well)

The 40% of the interviewees who disagreed that online engagement was a good way to receive accurate and reliable information about COVID-19, reasoned that:

- *lahi 'a e 'ū ongoongo loi na'e post 'i he 'initaneti pea 'oku 'ikai fala'anga mo mo'oni* (plenty of false information posted in the internet, which was unreliable)
- *toe stress (mafasia) pea confuse* (caused confusion and stress)
- *Ikai falala'anga fakamatala* (gave unreliable information)

When asked what they found confusing in the online reports or posts about COVID-19, interviewees stated that the following issues:

- vaccination rates, whether vaccinations were to be trusted, medical doctors arguments about importance of vaccinations,
 - origins of COVID-19
 - updating of COVID-19 situations
 - not knowing which information was accurate and which ones were false
- Four persons commented that they did not find anything confusing.

One of the key elements that created confusion for the Tongan public was that Pentecostal church leaders came out on social media to actively campaign against vaccinations, pushing forward conspiracy theories that COVID-19 was a United Nations campaign to rule the world, that there was some secret wish to rule the world. Ministry of Health had to actively address these claims whenever they would have their daily or weekly press conference, in trying to combat the church leaders who were against vaccinations and pressuring their church members not to be part of the national vaccination programs.

3.7 Mental Health

(16) In the final part, interviewees were asked how COVID-19 had impacted their mental health. The reasons which those that indicated that their mental health were impacted included:

- *Na'e 'ikai ke fu'u 'i ai ha'ane uesia meimei ko e hoha'a pe ko e 'kai lava ngaue ma'u'anga mo'ui ai e fāmili* (I wasn't really impacted except just worried about how we can sustain our family's livelihood).
- *Fakatupu manavahe mo lahi ange ilifia sio ki mamani lahi e mate ae kakai* (caused a lot of fear when I saw the great number of deaths globally)
- *Launga e kakai he lahi e nofo ma'u mo e ngaahi faka'ilonga ae koviti* (people complained about staying in their homes)
- *Lahi e hoha'a a e fonua ki he koviti* (a lot of anxiety in the country about COVID-19)
- *'Ikai lava o fakahoko lelei 'eku ako he tapuni 'a e ako* (could not do my educational work when institutes were closed)

Four respondents stated that their mental health was not affected and one interviewee stated that they felt both negative and positive impact. On one hand they felt stressed about the globally rate of deaths but on the other hand, there was quite a lot of time spent at home just resting.

Interviewees were asked if COVID-19 had made them feel depressed, lonely, anxious. Seven respondents said they experienced all three state of minds: one person stated that they had felt depressed and anxious, two respondents stated that they experienced only anxiety, two other respondents stated that they experienced feeling lonely only and one respondent said they felt depressed. Overall, 13 persons (65%) expressed that they had experienced feeling either depressed, loneliness or anxiety. Thirty four percent of the interviewees stated that they had not felt any of these emotions.

When the interviewees were asked if they could provide some examples of how they dealt with feelings of depression, loneliness and anxiety, they stated the following:

- *fakataha 'i he lotu mo 'eku famili, sio faiva mo e fanongo fasi, ngaue'aki ke download e ngaahi faiva ke te sio 'o hanganoa ai* (was part of family prayers, watched movies and listened to music, downloaded movies and watched movies to pass time)
- *fakamalohisino mo e fai 'eku ngaue faka'api* (did physical exercise and did tasks at home)
- *hū kitu'a ke ma'u ha 'ea mokomoko mo fo'ou* (went outside to get fresh air)

Commented [EW12]: (Show here result of vaccination trends for Tonga in 2020 – 2022). We have been trying to get these figures from Ministry of Health with little success. If we are able to receive this by next Monday, I will send, by otherwise. There seems to be an internal confusion of which figures should be released publicly. The only other statement that we can state, is precisely that. "Researchers have tried in the past two months to get formal release of this data from the Ministry of Health without success".

Interviewees were asked when the internet blackout happened after the volcanic eruption in January, and how this affected their ability to engage with friends/family. All interviews expressed that they had no communication with friends or family during the internet blackout.

4. Discussion

This research was conducted to understand how young people in Tonga, between the ages of 18 – 29 years old, engaged with the internet during the COVID-19 period and also during the Hunga Ha’apai Hunga Tonga massive underwater volcanic eruption in January 2022, which was a one of the most explosive in the 21st century according to volcanists worldwide (DW, 2022).

This study found that 99% of young people in Tonga who participated in this study used the social media platform Facebook, and approximately 62.5% spend approximately four to seven hours or more on the internet every day. They also frequently accessed Google and email sites. They used the internet mostly for socializing with friends and family, which fits with the internet traffic data recorded by the Cables & Wireless company, who monitor the internet access provided the underwater internet cable. Follow up interviews stated that all, except for one, used online engagement to stay connected with family, relatives and friends using social media, such as facebook messenger.

They used the internet also for their school work and doing some professional work. Most (93.5%) of the young people surveyed used their mobiles to connect to the internet. Data from the follow-up interviews backed these findings. Interviewees who were students stated that online engagement helped them with their school work; , or professional work, if they were employed. Students stated that online tools supported their research, accessing online educational platforms, such as Moodle and generally with their assessments. Professional workers stated that online tools helped them in communication (use of emails) as well as accessing work databases.

Slightly more than half of the interviewees also stated that that they found online engagement distracting to their studies, saying that they tended to go online to watch movies or go onto social media sites which then meant they had less time to conduct their studies.

Most of the young people in this study, 87.5%, had not heard of the Puatonga GO! talkshow but the number of youths who had heard of the program felt that they had learnt a lot from the program, especially in thinking about what appropriate items to be posted in the internet and what were inappropriate items. The accessibility of young people in Tonga, to the Puatonga GO! talkshow therefore needs to be carefully reconsidered and perhaps devise a stronger communication strategy so that more Tongan youths can access this program.

When Tongan youth were asked about the impact of COVID-19 on their lives, Tongan young people agreed that COVID-19 negatively impacted their school work, although 77.5% stated that COVID-19 did not affect their mental health. More than half, 65%, of the youth involved in the study stated that their families’ financial situation was impacted. Interview data showed, however, that a majority of Tongan youth, 70% did not pay for their online expenses, which was paid by relatives or friends. This is a reflection

of the Tongan strongly practiced cultural behaviour of remittances, in which relatives or families overseas financially support relatives and families in Tonga. This cultural behaviour of remittances may have buffered many families from experiencing extreme difficulties during COVID-19. As the COVID-19 period immediately followed the volcanic eruption, Tonga had received huge support in terms of food and domestic need supplies from Tongan communities living outside of Tonga.

Almost 69% of the youth stated that the COVID-19 situation did not affect their digital engagement behaviours and attitudes. Results from the follow up interviews showed a similar trend, with 60% of interviewees stating that they had not changed their digital behaviours and attitudes.

A similar per centage (65%) of the youth had increased their internet usage during COVID-19 and 66.3% did not find their online experience during COVID-19 times stressful. Most (86.3%) of the Tongan youths did not experience online bullying. Sixty six per cent of the young people did not find online experience during COVID-19 period as stressful, with only 27% saying they felt somewhat stressful and most of them (86.3%) stated that they did not experience peer pressure to change their digital behaviours and attitudes.

Data from interviews showed that half of the young people were aware of how to use the internet safely while the other half did not. Those who were aware were either students or had been exposed to programs which taught these things. Young people who were interviewed showed keen awareness of the dangers of the internet, citing negative impacts such as exposure to pornography, distracting students, causing social problems such as separation and divorces, identity theft and so on.

There should be greater awareness raising activities for young people in Tonga, focusing on the Cyberbullying Act 2020, which clearly shows what are inappropriate digital behaviour, which can lead to illegal offences. Such awareness will ensure that there is greater understanding of what is acceptable and unacceptable attitude and behaviours towards digital engagement, especially on social media platforms.

More young people (60%) felt that the internet provided accurate and reliable information about COVID-19. This could have been because a lot of the press conferences during COVID-19 released by the Ministry of Health had consistently used social media sites to disseminate information. Nevertheless, interviewees recognized that there had also been confusing messages about COVID-19.

There needs to be some training on how young people can better analyse social media information so that they are more able to sieve fake and false news from reliable information available from social media.

After the huge Hunga Tonga Hunga Ha'apai volcanic eruption in January 15th 2022, which affected communities in Ha'apai, 'Eua and Tongatapu, a communication blackout occurred and majority of the Tongan young people (96.3%) had no communication during this blackout. About a third of the young people had used telephones only to communicate with their family members and friends and some people communicated only by visiting family and friends. Slightly more than half of the young people surveyed (51%) said that their use of the internet was impacted by the volcanic eruption and internet shutdown

and 60% stated that their behaviour and attitude towards digital engagement, has changed.

5. Conclusion

This study investigated Tongan youths' digital engagement, how COVID-19 may have affected their digital engagement as well as their digital behaviours and attitudes. In addition, it explored the impact the volcanic eruption, which occurred in January 2022, impacted Tongan youth involved in this study.

The study conducted a survey to 80 Tongan youths as well as twenty follow-up interviews selected from the survey respondents.

The research found that the youths in Tonga were actively engaged online, spending quite a significant amount of time on the internet, especially on social media platforms, although their internet costs were paid by others, which may be one of the reasons for their extensive digital engagement.

The COVID-19 pandemic did impact young people in Tonga, both positively and negatively. For students, their education during the COVID-19 times was affected. They felt that COVID-19 provided opportunities for them to engage in social platforms which lessened their study time and others felt that it was very good time to spend with family and so reduced their internet time and more time was spent with their family members. Others felt that because of COVID-19 they could spend a bit more time learning how to use the internet and increase their digital engagement.

The use of the internet for educational purposes in the future is something which needs careful planning and strategising for both educational systems as well as for community members.

However, young people in Tonga did not feel that they had been severely stressed during COVID-19, although a small number did feel that they were somewhat stressed during this time. They did not experience online bullying and did not feel pressured by their peers to change their internet behaviour and attitude. Youth in Tonga expressed some awareness of appropriate and inappropriate ways of using of the internet, basically because of some exposure in their studies or simply in their use of the internet.

The Hunga Tonga Hunga Ha'apai volcanic eruption in January 2022 had an overwhelming impact on the youths' internet engagement and also in their attitudes and behaviour towards the internet. The enormity of this natural disaster for people who lived in Tongatapu (and the severely affected areas of Ha'apai and 'Eua), is mirrored in the response of the Tongan youth.

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Appendix 1: Interview Questions Tongan Version

KONGA A - NGAUE'AKI 'O E 'INITANETI

1. 'Oku ke pehē kuo liliu ho'o tō'onga ngaue'aki 'a e 'initaneti lolotonga e COVID?

- 'Io
- 'Ikai

Kataki fakamatala'i mai ho'o 'uhinga ki ho'o tali 'i 'olunga.

Fehu'i ange ki ha taha 'o e ngaahi me'a ko 'eni 'o makatu'unga 'i he a'usia 'a e tokotaha tali:

2. Na'e tokoni 'a e 'initaneti ki ho'o ngāue fakaako?

- 'Io
- 'Ikai

Kataki fakamatala'i mai ho'o 'uhinga ki ho'o tali.

3. Na'e tokoni nai 'a e 'initaneti ki ho'o ngāue pe ngaue volenitia?

- 'Io
- 'Ikai

Kataki fakamatala'i mai ho'o 'uhinga ki ho'o tali.

4. Na'e tokoni'i koe 'e he 'initaneti ke ke kei malava pe ho'o ngaahi koneki fakasosiale?

- 'Io
- 'Ikai

Kataki fakamatala'i mai ho'o 'uhinga ki ho'o tali.

5. 'Oku hanga nai 'e he 'initaneti 'o tohoaki'i koe mei ho'o ako pe ngaue?

- 'Io
- 'Ikai

Kataki fakamatala'i mai ho'o 'uhinga ki ho'o tali.

6. 'Oku ' ke totongi pē 'ekoe ho'o kaati telefoni mo ho'o data?

- 'Io
- 'Ikai

Kapau 'oku '**ikai**, ko hai 'oku ' ne totongi ia? pea ke hiki kihe fehu'i fika 9

7. Kapau 'oku '**io** 'a e fehu'i fika 6, ko e hā ē lahi 'o e pa'anga 'oku ' ke fakamoleki 'i ho'o kaati telefoni mo ho'o data 'i he māhina.

\$_____

8. Kuo 'alu hake nai ho'o fakamole ko 'eni lolotonga e COVID?

- 'Io
- 'Ikai

9. Ke pehē ko e konga lahi ia ho'o fakamole ' fakatatau ki he lahi 'o e pa'anga 'oku 'ke ma'u?

- 'Io
- 'Ikai

KONGA E - MALU

10. 'Oku ' ke 'ilo ki ha founa ke ke malu ai lolotonga ho'o ngāue'aki ē
'initaneti?
 - 'Io □ 'Ikai*(Kapau na'e tali 'io pea 'eke toenga 'o e fehu'i 'i he Konga E, kapau na'e tali 'ikai pea hiki kihe fehu'i fika 13) Katakī ki'i fakamatala mai ange ki ho'o founa koia?*
11. Na'e anga fēfē ho'o ma'u pē 'ilo e ngaahi founa koia?
12. 'Oku tokoni nai ngaahi founa koia kiate koe?
 - 'Io
 - 'Ikai
13. 'Okū ke pehe ko e hā e ngaahi fakatu'utāmaki lahi taha ki he to'utupu 'i he 'enau ngaue'aki 'a e 'initaneti?

KONGA F - FAKAMATALA COVID-19

14. Fekau'aki mo e COVID, ke pehē na'e hoko e 'initaneti' ko ha founa lelei ke ma'u mei ai ha fakamatala totonu mo falala'anga fekau'aki mo e koviti, ngaahi faka'ilonga 'o e koviti, huhu malu'i, lipooti fakapule'anga 'i he mafola 'a COVID?
 - 'Io
 - 'Ikai
 Katakī fakamatala'i mai ho'o 'uhinga ki ho'o tali.
15. Ko e ha e me'a na'a ke ta'emahino'ia ai fekau'aki mo e ngaahi lipooti pē ngaahi fakamatala 'i he 'initaneti fekau'aki mo e COVID?

KONGA H - MO'UI LELEI FAKA'ATAMAI

16. Na'e anga fēfē hono uesia 'e he koviti ' ho'o mo'ui lelei faka'atamai?
17. Ke pehē na'a ' ke a'usia 'a e ngaahi ongo koeni, 'o hange ko e loto mafasia, ta'elata, hoha'a?
18. Katakī te ke lava 'o 'omai ha ki'i fakatātā ki he founa na'a ' ke ngaue'aki ke ke lava 'o fakafepaki'i'aki 'a e ngaahi ongo koeni?
19. 'I he taimi na'e motuhia ai 'a e 'initaneti hili e puna 'a e mo'unga afi, na'a ' ne uesia fēfē ho'o fetu'utaki mo ho ngaahi kaungame'a/famili?

Appendix 2: Interview Questions English Version

SECTION A - Online Engagement

1. Has your online engagement changed during COVID? Can you give some examples of positive change? negative change?
2. Ask either of the following based on experience of respondent:
3. Did online engagement help with your schoolwork? Ask for example?
4. Did online engagement help with your job or volunteer work? Ask for example?
5. Did online engagement help you to stay socially connected? Ask for example
6. Does online engagement distract you from your school or job work? Ask for example
7. Do you pay for your phone and data credit? If not, who does pay for it?
8. If yes, how much money do you spend on phone and data credit a month (estimate?)
9. Has this gone up during COVID? Is this a big part of your budget?

SECTION B - Staying safe

1. Do you know how to stay safe during online engagement? Tell me about your strategies?
2. How did you learn about these strategies?
3. What do you feel are the biggest dangers for young people online? Any examples or experiences?

SECTION C - COVID-19 Information

1. With regard to COVID, was online engagement a good way to receive accurate and reliable information about COVID, COVID-symptoms, COVID vaccinations, government reports on the spread of COVID?
2. What did you find most confusing about online reports or postings on COVID?

SECTION D - Mental Health

1. How has COVID impacted your mental health?
2. Has it made you feel e.g., depressed, lonely, anxious?
3. Could you provide some examples of how you dealt with those feelings?
4. When the internet blackout happened after the volcanic eruption in January, how did this affect your ability to engage with friends/family?
5. If so, how?

Appendix 3: Survey Questions Tongan Version

KONGA A - FAKAMATALA TAAUTAHA

1. Ko e hā ho ta'u motu'ā?
 - ☐ 18-21 ☐ 22-24 ☐ 25-29
2. Faka'ilonga'i mai 'a e tūkunga 'oku ke 'iai.
 - ☐ Tangata ☐ Fefine
3. 'Oku ke nofo 'i fē? _____
 - ☐ Vahe Hahake ☐ Vahe Loto ☐ Vahe Hihifo ☐ Vahe Kolo
4. 'Oku liliu 'e he COVID-19 'a ho'o fakakaukau, ho'o ngaue'aki, mo ho'o to'onga mo'ui ki he me'angāue faka'ilekitulonika?
 - 'Io
 - 'Ikai
5. Kuo liliu nai 'e he COVID-19 (eg, tāpuni 'o e ako, faingata'a'ia fakaemo'uilelei faka'atamai, mafasia fakapa'anga 'a e famili) ho'o ngaue'aki, ho'o fakakaukau mo ho'o to'onga mo'ui ki he me'angāue faka'ilekitulonika?
 - 'Io
 - 'Ikai
6. 'Oku 'i ai hao faingata'a'ia fakaēsino(disability)?
 - 'Io
 - 'Ikai
 - Lelei pe ke 'oua 'e 'asi
7. Ko e hā ho tu'unga taukei 'oku ke 'i ai 'i he taimi 'ni?
 - Ako
 - Ngaue
 - 'Ikai ma'u ngaue
 - Ngaue 'ofa
8. Kapau 'okú ke ngāue, ko e hā ho tu'ungá 'i he ngaue'anga?

9. Ko e ha e tu'unga fakamuimui ne a'u ki ai ho'o ako?
 - Lautohi si'i
 - Kolisi
 - Ako Ma'olunga ange
 - Univesiti
 - Ako Fakatekinikale
10. Ko e hā ho'o fika telefoni? _____

KONGA E - FEHU'I KI HO'O NGAUE'AKI 'A E 'INITANETI

1. Ko e ha 'a e ngaahi me'a 'oku ke faka'aonga'i 'i he taimi 'oku ke hu ai ki he 'initaneti (tiki'i kotoa ho'o tali)?
 - Facebook
 - YouTube
 - TikTok
 - Student Moodle
 - Email
 - Imo
 - Ngaahi Me'a Kehe -hiki mai heni _____
2. 'Oku ke pehe ko e houa 'e fiha 'oku ke fakamoleki 'i he 'initaneti he 'aho takitaha?
 - ☐ 0-1 ☐ 2-3 ☐ 4-5 ☐ 6-7 ☐ Laka hake he houa 7
3. Katakai 'o fakahokohoko mai ho'o ngaahi 'uhinga ki ho'o ngaue'aki 'a e 'initaneti.
 - 1 – mahu'inga taha
 - 10 – si'isi'i taha hono mahu'inga

Talanoa mo ho ngaahi kaungāme'á;	1	2	3	4	5	6	7	8	9	10
Talanoa mo e mēmipa 'o e fāmili;	1	2	3	4	5	6	7	8	9	10
Talanoa mo e ta'ahine kaume'a pē tamasi'i kaume'a;	1	2	3	4	5	6	7	8	9	10
Ma'u e ngaahi fakamatala fakamuimuitaha 'i he mitia fakasosiale;	1	2	3	4	5	6	7	8	9	10
Ma'u 'a e ongoongó;	1	2	3	4	5	6	7	8	9	10
Sio he 'initaneti 'i he 'ū fakatātā pe vitiō;	1	2	3	4	5	6	7	8	9	10
Fai e ngāue fakaakó;	1	2	3	4	5	6	7	8	9	10
Fai ha ngāue fakapalofesinale;	1	2	3	4	5	6	7	8	9	10
Ngaue'aki ki he Pisinisi;	1	2	3	4	5	6	7	8	9	10
Fakafiefia;	1	2	3	4	5	6	7	8	9	10
Ngaahi fatongia fakafonua (mali etc)	1	2	3	4	5	6	7	8	9	10

4. 'Oku ke lava fēfē 'o hū ki he 'initaneti? (tiki'i kotoa ho'o tali)
 - 'Initaneti 'i 'apiako
 - Telefoni to'oto'o fakatautaha
 - 'Initaneti 'i 'api
 - 'Initaneti ta'etotongi he ngaahi feitu'u fakapule'anga/pisinisi
 - Me'a kehe _____
5. Kuo ke 'osi sio nai 'i he polokalama **Puatonga GO!** talk show 'i he 'initaneti?
 - ☐ 'Io ☐ 'Ikai
6. Kapau 'oku ke tali **'io** ki he fehu'i 'i 'olunga, kuo tokoni nai ia ke ke 'ilo'i mo tokanga'i e ngaahi me'a 'i he 'initaneti hangē ko e 'ulungaanga ta'etaau 'i he 'initaneti?

KONGA F - OLA COVID-19

1. Kuo uesia nai koe 'e he tāpuni 'a e ngaahi ako?
 - 'Io
 - 'Ikai
 Kataki fakamatala mai 'a e 'uhinga ho'o tali 'i 'olunga?
2. Kuo uesia nai 'e he lockdown ho'o mo'ui lelei faka'atamai?
 - 'Io
 - 'Ikai
 Kataki fakamatala mai 'a e 'uhinga ho'o tali 'i 'olunga?
3. 'Oku ke uesia faka'ekonomika pē fakapa'anga nai pe ko ho famili he hoko mai 'ae COVID-19?
 - 'Io
 - 'Ikai
 Kataki fakamatala mai 'a e 'uhinga ho'o tali 'i 'olunga?
4. Na'e uesia nai 'e COVID-19 ho'o 'ulungaanga pe tō'onga fakakaukau ki he 'initaneti?
 - 'Io
 - 'Ikai
 Kataki fakamatala mai 'a e 'uhinga ho'o tali 'i 'olunga?
5. Na'a ke fakamoleki ha taimi lahi ange 'i he 'Initaneti lolotonga 'ae lockdown?
 - 'Io
 - 'Ikai
 Kataki fakamatala mai 'a e 'uhinga ho'o tali 'i 'olunga?
6. Na'e fakamamahi'i (online bully) koe 'i he 'initaneti' lolotonga ē COVID-19?
 - 'Io
 - 'Ikai
 - 'Ikai fakapapau'i
7. Na'a ' ke a'usia ha loto mafasia (stress) 'i he 'initaneti, lolotonga ē COVID 19?

☐ 'Ikai ha loto mafasia; ☐ ki'i mafasia si'isi'i pe; ☐ loto mafasia; ☐ loto mafasia lahi
8. Na'a ' ke a'usia nai ha taimi na'e feinga atu ai ho kaungame'a(peer pressure) ke ne/nau uesia 'a e anga ho'o fakakaukau pē ngaue lolotonga COVID19?
 - 'Io
 - 'Ikai
 Kataki fakamatala mai 'a e 'uhinga ho'o tali 'i 'olunga?

KONGA H - UESIA 'O E PUNA 'A HUNGATONGA HUNGAHA'APAI 'I SANUALI

1. Na'e uesia fēfē 'e he puna 'a e mo'unga afi 'i Sanuali 'a ho'o malava ke ngāue'aki 'a e 'initaneti?
2. Na'a ke lava 'o toe fetu'utaki mo e kakai 'oku ke angamaheni he fetu'utaki mo kinautolu he 'initaneti?
 - 'Io

- 'Ikai

3. Lolotonga 'a e mate 'a e 'initaneti 'i he puna 'a e mo'unga afi, na'a ke fetu'utaki fēfē mo e kakai na'a ke angamaheni he fetu'utaki mo kinautolu he 'initaneti?

4. 'Oku ke pehē kuo liliu ho'o tō'onga mo'ui faka'aonga'i e 'initaneti koe'uhi ko e fo'i mate 'a e 'initaneti 'i he uesia 'e he mo'ungaafi?

- 'Io
- 'Ikai

Kataki fakamatala mai 'a e 'uhinga ho'o tali 'i 'olunga?

5. Na'e liliu nai 'e he puna 'a e mo'unga afi 'a e ngaahi me'a 'oku ke fakamu'omu'a fekau'aki mo ho'o ngaahi tō'onga mo'ui 'i he 'initaneti pe?

- 'Io
- 'Ikai

Kataki fakamatala mai 'a e 'uhinga ho'o tali 'i 'olunga?

Muimui'i (Follow-up):

6. 'Okú ke loto fiemālie ke ke toe kau 'i ha faka'eke'eke 'amui ange?

☐ 'Io ☐ 'Ikai

Appendix 4: Survey Questions English Version

A. Demographic data

- What is your age?
 - 18-21
 - 22-24
 - 25-29
- What is your gender?
 - Male
 - female
 - gender diverse
- Where do you live?
- Has the COVID-19 Pandemic directly changed your digital behaviours, attitudes, experiences?
 - YES
 - NO
- Has the COVID-19 Pandemic indirectly (eg, impacts of school closures, mental health strain, family financial stress) changed your digital behaviours, attitudes?
 - YES
 - NO
- Do you have a disability?
 - Yes
 - No
 - Prefer not to say
- What is your social-professional status?
 - Student
 - Employed
 - Unemployed
 - Volunteer worker
- If working, what is your position title?
- What is your education level completed?
 - PRIMARY
 - SECONDARY
 - TERTIARY
 - VOCATIONAL/TECHNICAL
- What is your phone number?

B. Online engagement

- What platform do you use when you go online (check all that apply)?
 - Options: Facebook, YouTube, TikTok, Student Moodle, search engines (Google, Bing etc.), email, adult sites, Imo, Other
- How many hours do you think you spend online per day?
 - 0-1
 - 2-3
 - 4-5
 - 6-7
 - More than 7
- Please order your reasons for going online, with 1 being the most important and 10 being the least important, using the options provided below:

Talk with friends	1	2	3	4	5	6	7	8	9	10
Talk with family members	1	2	3	4	5	6	7	8	9	10
Talk with boyfriend or girlfriend	1	2	3	4	5	6	7	8	9	10
Get social media updates	1	2	3	4	5	6	7	8	9	10
Access the news	1	2	3	4	5	6	7	8	9	10
Watch photos or videos online;	1	2	3	4	5	6	7	8	9	10
Do school work	1	2	3	4	5	6	7	8	9	10
Do professional work;	1	2	3	4	5	6	7	8	9	10
Do business;	1	2	3	4	5	6	7	8	9	10
Entertainment;	1	2	3	4	5	6	7	8	9	10
cultural events (weddings etc)	1	2	3	4	5	6	7	8	9	10

- How do you access to the internet?
 - School Wi-Fi
 - Personal Mobile data
 - Home Wi-Fi
 - Public Wi-Fi online environment
 - Other
- Have you ever watched the *Puatonga GO!* talk show?
 - YES
 - NO
- If yes to the previous question, has it helped you identify and manage online issues like bullying?

C. COVID-19 Impact

1. Have school closures impacted you? If yes, how? If no, why not?
2. Have the lockdowns affected your mental health? If yes, why or how? If no, why or how not?
3. Have you or your family been affected economically or financially by COVID-19? Please elaborate.
4. Did COVID-19 directly impact your online behaviour or attitude?

YES NO

5. If yes to the previous question, how?
6. Did you spend more time online during the lockdown? Explain why or why not?
7. Did you experience online bullying during COVID-19

Yes/No/Not sure

8. Did you experience stress when online, during COVID 19?
a. No stress; b. a little stress; c. stress; d. a lot of stress
9. Did you experience peer pressure that affected how you thought or acted during COVID19?
a. Can you give examples of why/why not?

D. Impact of Volcanic Eruption in January

1. How did the volcanic eruption in January affect your ability to go online?
2. During the internet blackout that followed the eruption, how did you keep in contact with people you otherwise would have interacted with online? Could you keep in contact with these people?
3. Do you think your internet usage habits have changed at all because of the internet blackout? If yes, how? If no, why or how not?
4. Did the eruption change your priorities in relation to your online habits or have they remained the same? Please elaborate with examples

Follow-up:

1. Are you willing to participate in a follow-up phone interview?
2. If yes, what is your name?