

ABOVE AND BEYOND

AN EXPLORATION OF THE CULTURE, BEHAVIOURS
AND ATTITUDES OF NEW ZEALAND'S MOUNTAINEERING
COMMUNITY TOWARDS AVALANCHE SAFETY

2023



OUTDOOR SAFETY
NEW ZEALAND MOUNTAIN
SAFETY COUNCIL



research
NEW ZEALAND
Rangahau Aotearoa





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“The process of spending time in the mountains and making decisions to climb and ski whilst keeping yourself and your partners safe is sometimes a complicated process. But really, it’s a refreshingly simple goal in the sense that all I aim to do is arrive home safe. Moving through the hills under your own power and trying to keep yourself safe is a rich and mentally nourishing endeavor with fewer abstract worries than city life.”

– RESEARCH PARTICIPANT

PHOTO: Mt Alymer at the head of Tasman Glacier, Taichiro Naka

INTRODUCTION

Kia ora and welcome to this insights report.

Over the following pages we will present to you the key findings of our latest research project – An exploration of the culture, behaviours and attitudes of New Zealand’s mountaineering community towards avalanche safety. We are excited to share this with you!

After many months of hard work, we would like to sincerely thank everyone who has played a part in the research project and this publication. From the organisations who partnered with us to support the concept and share the survey, to the external advisory panel, the mountaineers who were willing to sit down with us and share their stories of avalanche involvements, through to the hundreds of mountaineers who completed the survey - we thank you. This has truly been a collaborative effort.

The New Zealand mountaineering community may be small, but it is one full of rich history and deep passion. Mountaineering is interwoven into the fabric of our country’s history. From Māori using passes to move through the mountain ranges, to more modern-day heroics such as Sir Edmund Hillary, the mountains of Aotearoa are part of our identity.

The NZ Mountain Safety Council (MSC) has analysed and reflected on avalanche incident data (see a small summary of this over the page). Our findings have naturally raised some questions – why are mountaineers in New Zealand so overly represented in avalanche fatalities? There could be many explanations for this. Some reasons may be environmental; our mountains are dynamic, our weather is constantly changing and thus our snowpack never remains the same for long. There may also be human-centric reasons, such as the growth in mountaineering participation (anecdotally, confirming this through actual participation data remains challenging) and historically some mountaineers and mountaineering philosophies have been slower to adopt avalanche risk management techniques compared with other backcountry snow sports activities. Each of these points are possible contributing factors.

Rather than sit still, MSC decided to embark on a body of work to try and understand more about the element we know the least about, the human factors. Specifically the attitudes, behaviours and ultimately the mountaineering community culture towards avalanche safety.

Exploring the attitudes and behaviours of any community or group of people is a sensitive matter. Our hope is that these findings will provide the platform for a healthy conversation and reflection, paving the way for improved mountaineering specific avalanche safety in NZ, and perhaps other parts of the world.

As you read through this publication, we have no doubt that some of the findings will surprise you, some might challenge your thinking, and others will likely confirm what you thought or expected to see. We encourage you to reflect on your own mountaineering practices and more widely about the mountaineering community you are part of, and your role within it. Towards the end you will see MSC has already mapped out some recommendations for the mountaineering community, for training providers and for ourselves as an organisation.

Enjoy the read. Enjoy the reflection. And most critically, keep enjoying the mountains.

The MSC Team.

CONTEXTUAL INSIGHTS

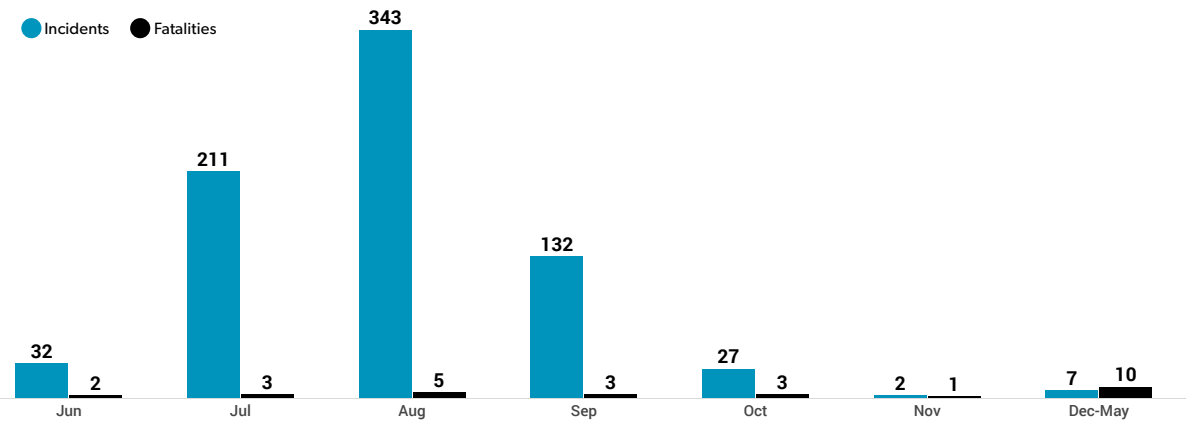
Between 1999 and 2018, 27 people in NZ died in an avalanche. Nineteen of these people (70%) were mountaineering. This high proportion is out of step with what is seen overseas in North America and Europe, where the percentage of mountaineering fatalities is typically much lower.

Furthermore, in the 20 years between 1999-2018, there were 742 reported avalanche incidents in NZ across all forms of recreational and commercial backcountry activities. Of these, only a small number **were reported** by mountaineers (25, or 3.4%).

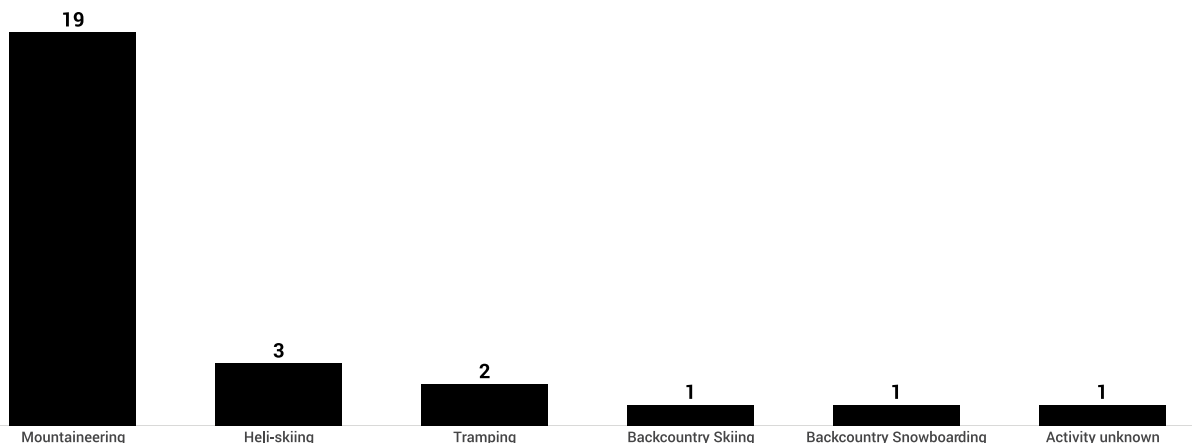
Analysis of these 742 reported avalanches indicates that most of them occurred during winter months, but a large proportion of the fatalities occurred during spring and summer, the prime mountaineering season.

Combined, these findings present a compelling picture and raise some key questions...

MONTHLY REPORTED AVALANCHE INCIDENTS AND FATALITIES



AVALANCHE FATALITIES BY ACTIVITY



QUESTIONS

WHY DO MOUNTAINEERS MAKE UP SUCH A HIGH PROPORTION OF AVALANCHE FATALITIES IN NEW ZEALAND?

Since 1999, almost all reported avalanche incidents involving mountaineers have been fatal. By comparison, backcountry skiing/snowboarding recorded 380 incidents during this period with only two fatalities. This situation raises some obvious questions, such as 'Is there a reporting issue?' and even if there is a reporting bias with non-fatal incidents (which there certainly is not with fatalities), why does this happen?

There are undoubtedly practical reasons for the disproportionate representation of mountaineers in fatalities, such as the nature of the terrain, weather and conditions, and possible participation differences. However, do these reasons really explain all of the difference compared to activities like backcountry skiing/snowboarding? Could there be other factors at play here, such as a behavioural, attitudinal or cultural component within the mountaineering community towards avalanche safety?

As MSC sought to answer and better understand, these complex questions, it became apparent that the human factors contributing to this complex equation were totally unknown. No one had ever explored the attitudes, behaviours and cultural considerations of the New Zealand mountaineering community.

Without this knowledge, how could we begin to understand why mountaineers were so overwhelmingly represented in avalanche fatalities? And so, this research project was born.

RESEARCH OBJECTIVES

THE PRIMARY OBJECTIVES OF THIS RESEARCH WERE TO:

1. Develop a clear understanding relating to the 'attitude and behaviour of the New Zealand mountaineering community towards avalanche dangers and avalanche safety' in order to answer the fundamental question...

'is there a cultural issue within the NZ mountaineering community that could be contributing to avalanche related safety incidents?'

2. Use the findings to collaboratively design solutions improving avalanche incident prevention specifically targeting the NZ mountaineering community.



METHODOLOGY & RESPONSES

QUALITATIVE INTERVIEWS

Prior to developing the survey, we conducted individual in-depth interviews with two groups of recreational mountaineers between 5th June and 24th August 2021; this included five mountaineers who had been involved in an avalanche and four mountaineers who had not.

The qualitative information gathered from these interviews was used to design an online questionnaire. When this was in a final draft form, we tested the questionnaire with a range of people including some of those who had been part of the qualitative interviews, external reference panel members and MSC staff.

EXTERNAL REFERENCE PANEL

Throughout the research we utilised expert advice and input from an external reference panel. This consisted of six professional and recreational mountaineers, academics and researchers. The panel members provided invaluable advice and guidance, and were an excellent sounding board for the researchers.

The panel included: Jaz Morris, Ben Corcoran, Grant Statham, Kay Haughey, Anna Keeling and Pascal Haegeli.

ETHICS

Ethics approval for the research was obtained from the New Zealand Ethics Committee on 18 June 2021 (NZEC Application 2021-25).

SURVEY BIASES

There is likely a response bias favoring people who have access to the internet (online survey only), who use social media and who are members of mountaineering clubs and membership organisations.

Surveys of this type are often preferentially completed by people with higher levels of avalanche awareness and interest in further developing their risk management skills.

ONLINE SURVEY

THE SURVEY WAS LAUNCHED ON 22 NOVEMBER 2021 AND CLOSED ON 18 FEBRUARY 2022.

The survey was conducted online. It was incentivised, and promoted to the mountaineering community through multiple different channels, including via:

- » Mountaineering clubs and relevant membership bodies
- » Mountaineering, climbing and tramping social media pages and groups
- » NZ Mountain Safety Council and NZ Avalanche Advisory networks and contact lists

A total of **779 responses** were received.

Of the total responses, 11% (or 86) identified themselves as a 'professional guide'.

The findings included in this presentation are based on the 89% (or 691) 'non-guides'.

There is no accurate record of the total size of the mountaineering community in NZ, or accurate understanding of the total NZ based annual mountaineering participation. However, the researchers and external advisory panel are confident that this sample size is large enough to be considered viable. It is not necessarily representative, for the reasons outlined in Survey Biases, but it does provide sufficient insight and is the best available information. It is currently impossible for us to know if the sample is representative of the entire mountaineering community.

Due to question routing or respondents skipping some questions, not every question was answered by all respondents. This is indicated where relevant.

SUPPORTING RESEARCH PARTNERS



WHO COMPLETED THE SURVEY?

HERE'S A SNAPSHOT OF KEY CHARACTERISTICS OF THOSE WHO COMPLETED THE SURVEY...

- » A wide cross-section in terms of the **number of years mountaineering**
- » Over three-quarters identified themselves as being **male**
- » Nearly half identify themselves as being at an **intermediate mountaineering level**
- » Most said they do up to **five mountaineering trips a year**
- » Most said they belong to a **club or member organisation**

However, the mountaineering community is diverse and consists of many different types of people.

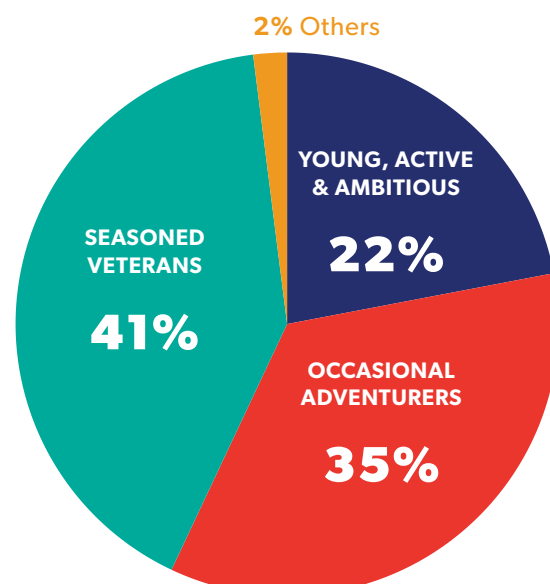
NOT ALL MOUNTAINEERS WHO COMPLETED THE SURVEY ARE THE SAME

If we look at common patterns in the responses to the following four questions...

- » Their **years of mountaineering experience**
- » Their **self-reported experience level**
- » The **number of trips** they do per year on average.
- » Their **age**

We are able to identify three distinct groups of recreational mountaineers in New Zealand, which we call mountaineering personas.

- » **Young, Active & Ambitious**
- » **Occasional Adventurers**
- » **Seasoned Veterans**





**YOUNG, ACTIVE
& AMBITIOUS**



**OCCASIONAL
ADVENTURERS**



**SEASONED
VETERANS**



**ALL
RESPONDENTS**

HOW WE WILL PRESENT THE RESULTS

As we explore the survey findings, we will look at the overall combined results for **all respondents**, and identify where they differ between the three **distinct personas**. As we do this, it's helpful to have the characteristics of each persona in mind.

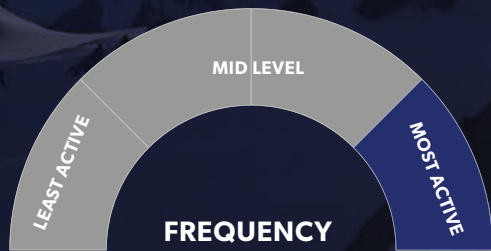
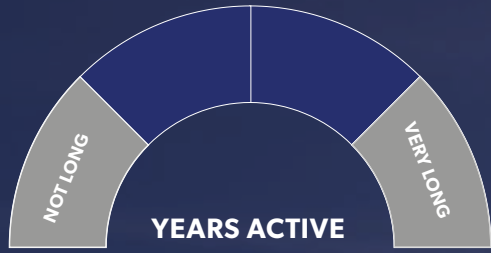
Note: Where findings for the personas are not shown, this is because the results do not differ greatly between them.



YOUNG, ACTIVE AND AMBITIOUS

AT 22% THEY MAKE UP THE SMALLEST PROPORTION OF OUR SAMPLE

- » **YEARS ACTIVE:** 'mid-level', active for longer than '**Occasional Adventurers**' but not as long as '**Seasoned Veterans**'
- » **SELF-PERCEIVED EXPERIENCE LEVEL:** Intermediate to Advanced
- » **COMFORT GRADES:** climb the highest grades, but there's a broad spread amongst them above grade 2
- » **FREQUENCY:** they are the most active climbers, usually between 6 and 15 trips per year
- » **AGE:** they are the youngest
- » **GENDER:** overwhelmingly male
- » **CLUBS:** more likely to be members of NZ Alpine Team, Canterbury Mountaineering Club or Expedition Climbers Club, least likely to be part of a tramping club
- » **CLIMBING PARTNERS:** most likely to be as experienced as they are
- » **OVERSEAS EXPERIENCE:** the majority of this persona have climbed overseas
- » **DOMESTIC RESIDENCE:** overwhelmingly South Island
- » **TRAINING:** 82% have completed some type of formal avalanche training





OCCASIONAL ADVENTURERS

THEY MAKE UP 35% OF RESPONDENTS

- » **YEARS ACTIVE:** 'the shortest', they've spent the least amount of time mountaineering
- » **SELF-PERCEIVED EXPERIENCE LEVEL:** Beginner to Intermediate
- » **COMFORT GRADES:** climb the lowest grades of all personas, typically grade 1 - 3
- » **FREQUENCY:** On average, 1 to 5 climbs/trips a year
- » **AGE:** they are slightly older than 'Young, Active and Ambitious', but younger than 'Seasoned Veterans'
- » **GENDER:** primarily male, but they have the highest proportion of females
- » **CLUBS:** least likely to belong to a club
- » **CLIMBING PARTNERS:** most likely to go on trips with people as experienced as they are, or more experienced than they are (such as mentors)
- » **OVERSEAS EXPERIENCE:** the majority have only NZ mountaineering experience
- » **DOMESTIC RESIDENCE:** of the three personas, highest proportion of people based in the North Island, but still majority are South Island based
- » **TRAINING:** 66% have completed some type of formal avalanche training

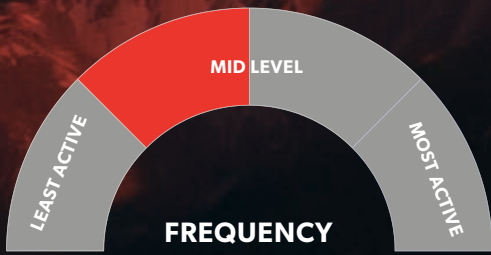
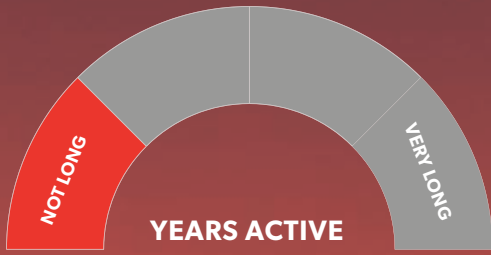


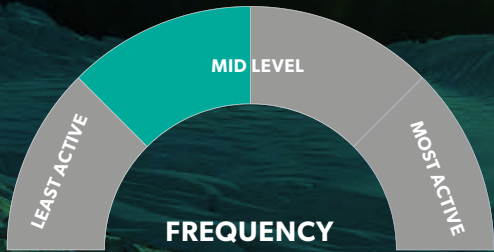
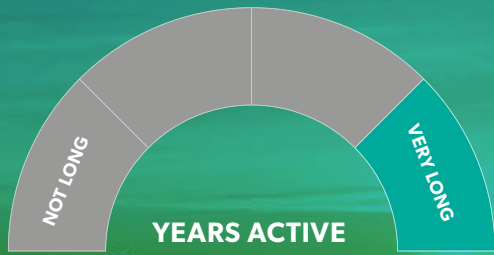
PHOTO: Approaching Sefton Biv; Sealy Range in the background, Rob Frost



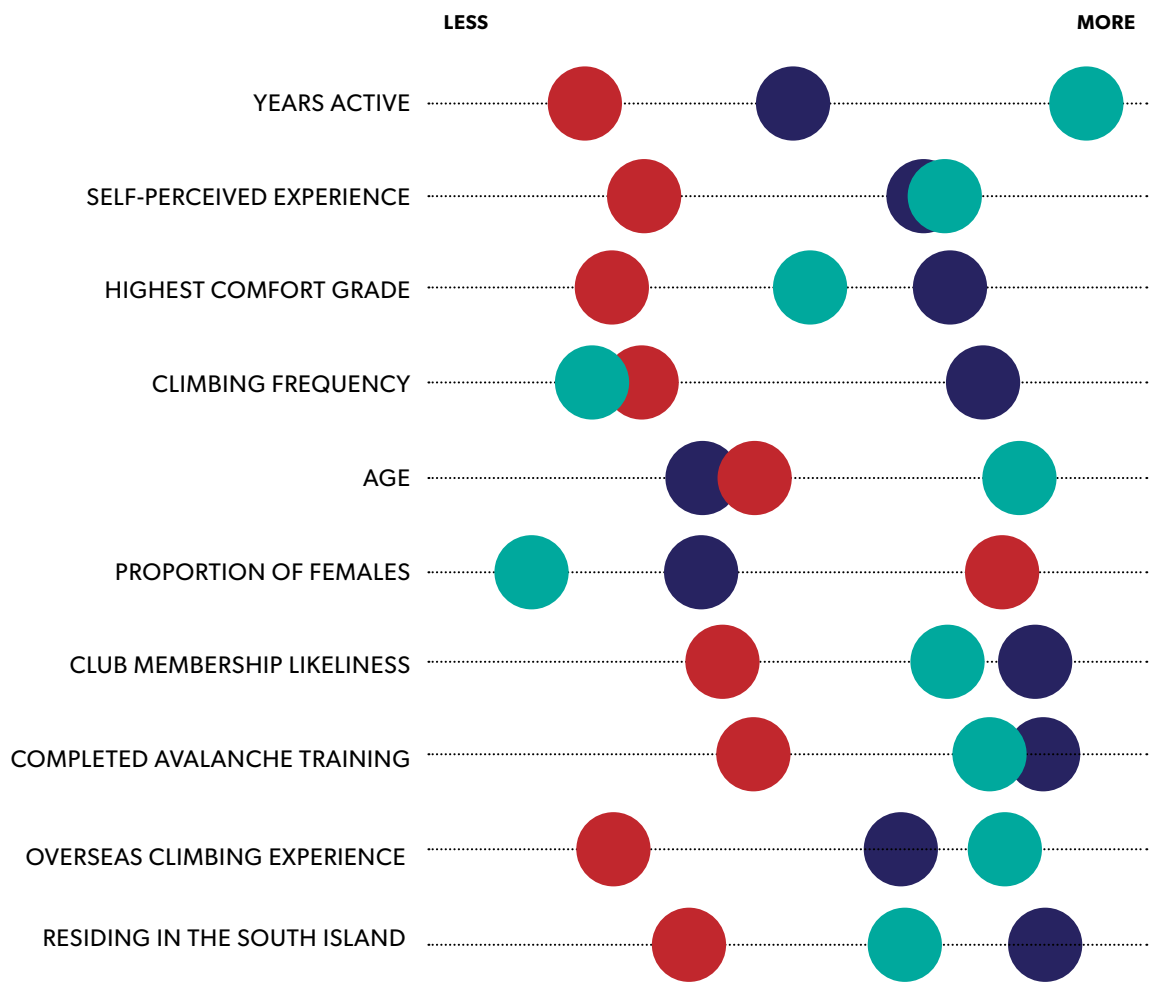
SEASONED VETERANS

AT 45% THEY ARE THE MOST PREVALENT PERSON IN OUR SAMPLE

- » **YEARS ACTIVE:** they've spent the longest amount of time mountaineering
- » **SELF-PERCEIVED EXPERIENCE LEVEL:** Intermediate to Advanced
- » **COMFORT GRADES:** like 'Young, Active and Ambitious' (high grades), but with a wider spread as they have people at both the lower and upper ends
- » **FREQUENCY:** On average, 1 to 5 climbs/trips a year, much like 'Occasional Adventurers'
- » **AGE:** they are the oldest persona
- » **GENDER:** Primarily male, they have the smallest proportion of females
- » **CLUB:** most likely to be members of NZ Alpine Club
- » **CLIMBING PARTNERS:** most likely to go on trips with people as experienced as they are, least likely to go with someone more experienced than them
- » **OVERSEAS EXPERIENCE:** more overseas experience than the other personas
- » **DOMESTIC RESIDENCE:** overwhelmingly South Island
- » **TRAINING:** 79% have completed some type of formal avalanche training



A BRIEF COMPARISON OF OUR THREE PERSONAS



The position of each dot is indicative only and meant to show a simple relationship between each of the personas.



**YOUNG, ACTIVE
& AMBITIOUS**



**OCCASIONAL
ADVENTURERS**



**SEASONED
VETERANS**

WHILE THE PERSONAS HAVE THEIR DISTINCT DIFFERENCES, THEY ALSO HAVE SOME SIMILARITIES...

- » There are several reasons why they started mountaineering, with **'natural progression from another activity' (75%)** and **'drawn to the mountains' (65%)** being the most common.
- » Overall, **overnight tramping (82%)** and **outdoor rock climbing (59%)** were by far the most common activities that led them to mountaineering. **Skiing/snowboarding** (in & out bounds) were also common pathways.
- » Their **self-perceived experience level** was primarily based on how many climbs/trips they had done previously.
- » There is a **high NZ Alpine Club** membership throughout all three personas.


Over the following pages we will explore a range of topics and survey findings in detail.



PHOTO: NZAA Public Observation, Brewster Glacier, M.S Whittaker



PHILOSOPHIES, MOTIVATIONS & PLANNING



“I guess my approach is to keep myself and my partners safe whilst challenging my fitness, skills, and knowledge against nature and the mountain. I don’t ever feel like I’ve “won” or conquered something. Rather been able to achieve this goal in a way which makes me feel competent, accomplished, and complete rather than “dominant”. I love that feeling of being in the hills.”

– RESEARCH PARTICIPANT

PHILOSOPHIES, MOTIVATIONS & PLANNING

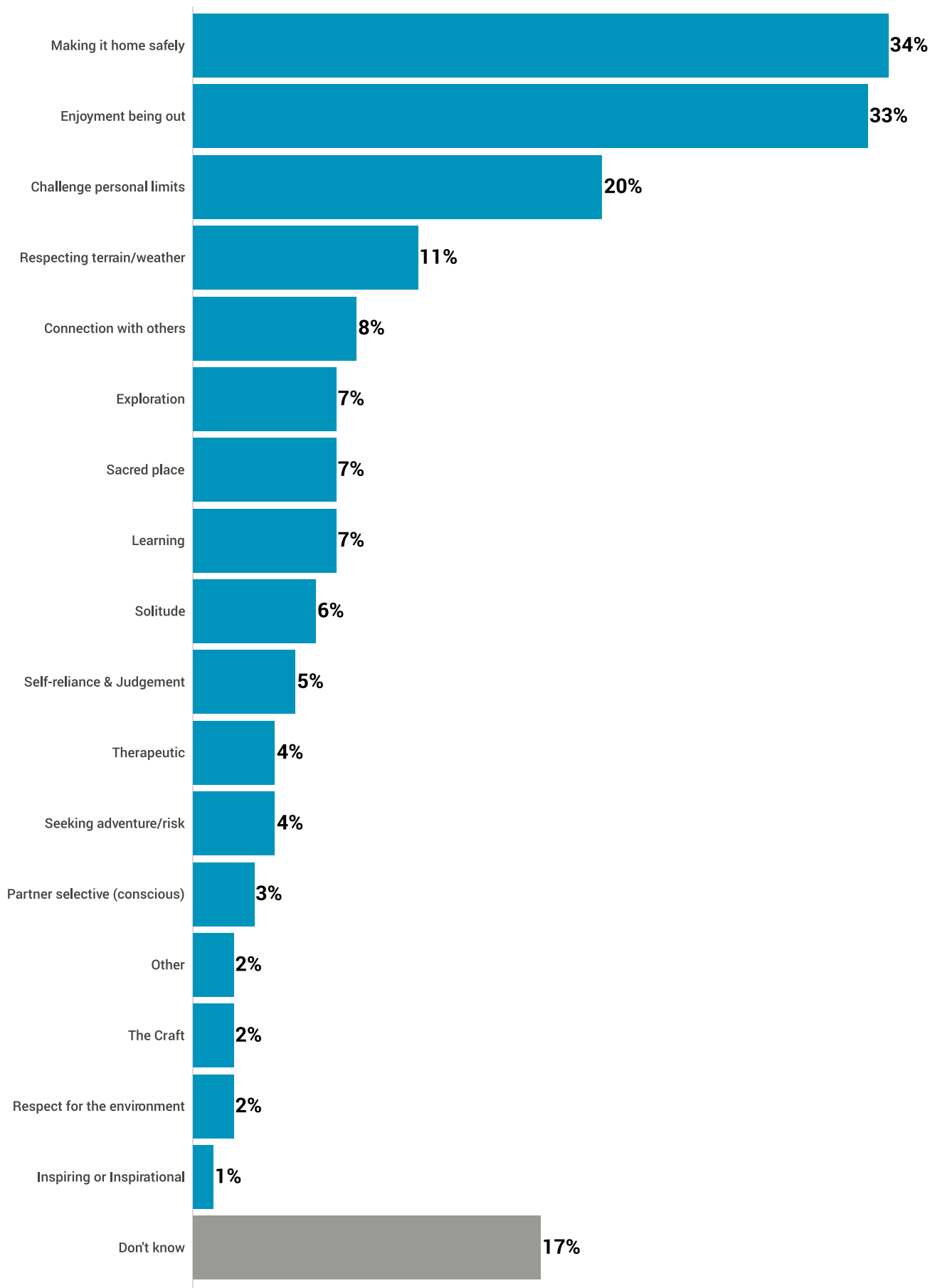
FOR MOST MOUNTAINEERS, THEIR ‘APPROACH AND PERSONAL PHILOSOPHY’ IS BASED ON MAKING IT HOME SAFELY AND ENJOYING THEMSELVES

Respondents were asked to describe their ‘approach and personal philosophy to mountaineering’.

Their response to this open-ended free text question has been coded and **20%** or more mentioned these three dominant themes:

- » **Make it home safely (34%)**, with **11%** specifically saying, **Respect the consequences of the terrain/ weather**
- » **Enjoy being out there (33%)**
- » An opportunity to **challenge/test personal limits (20%)**.

Each respondent’s description of their ‘approach and philosophy to mountaineering’ could have as little as one and as many as three themes coded to it. As a result, the percentages to the right add up to more than 100%.



N=691

Q12. *IN YOUR OWN WORDS, HOW WOULD YOU DESCRIBE YOUR APPROACH AND PERSONAL PHILOSOPHY TO MOUNTAINEERING?*

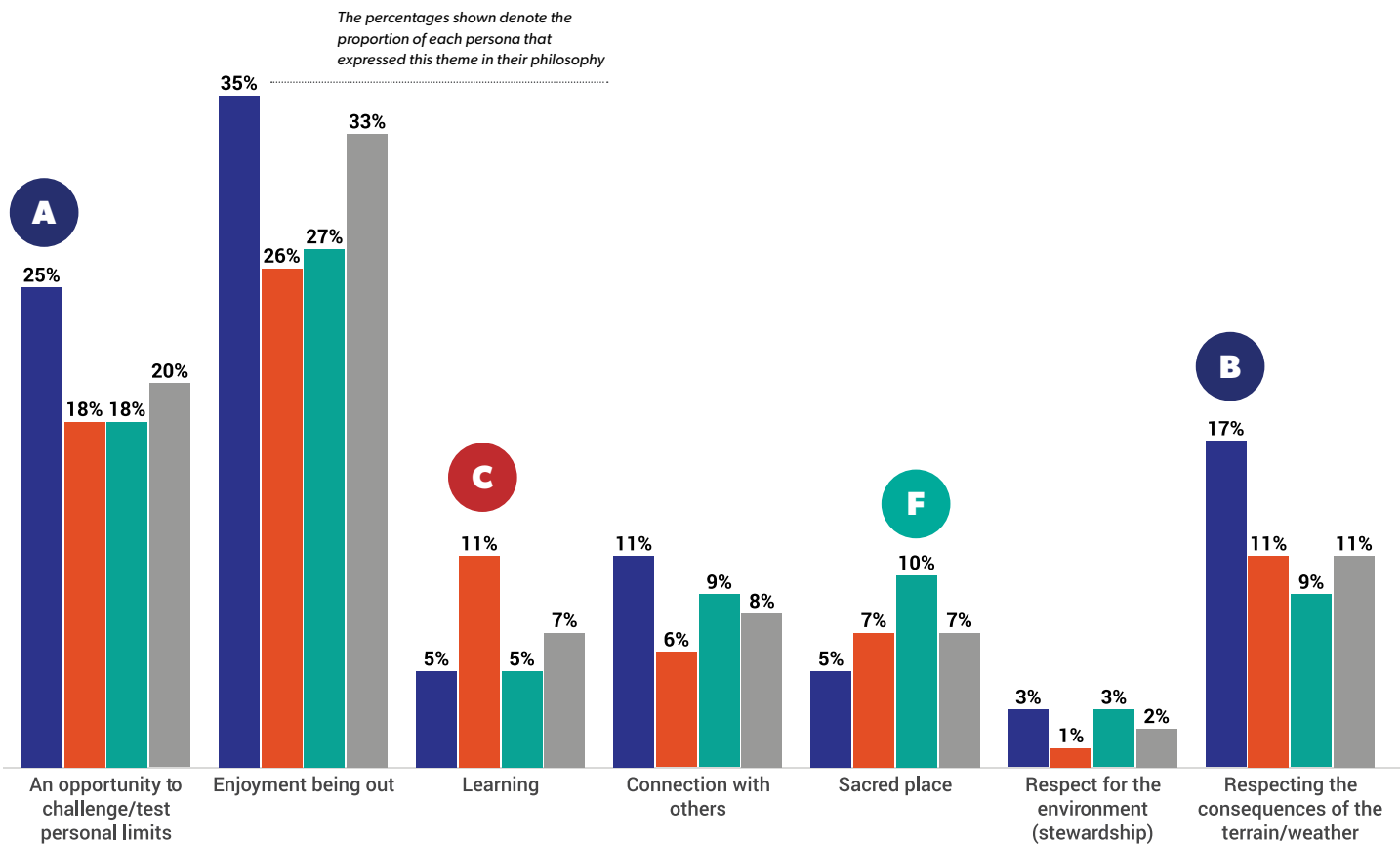


WHEN WE LOOK AT THE 'APPROACH AND PERSONAL PHILOSOPHY' OF EACH PERSONA, WE SEE SOME INTERESTING DIFFERENCES

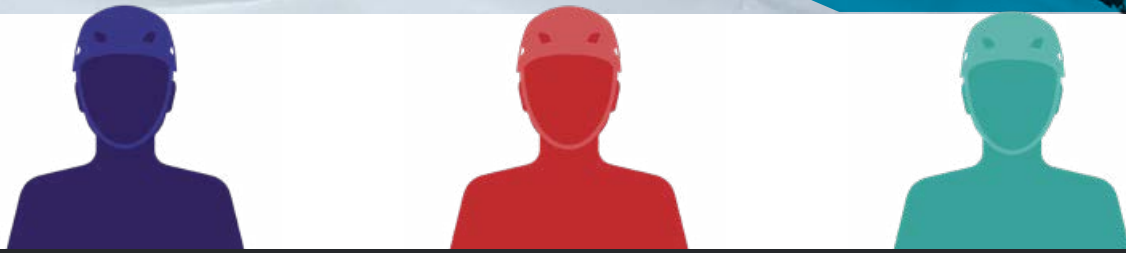
As an example, 'Young, Active and Ambitious' had a higher percentage of people indicating that their approach and personal philosophy included 'an opportunity to challenge/test personal limits'.

If we briefly think about the characteristics of 'Young, Active and Ambitious', this aligns well.

Understanding these varying philosophies is important as they will play a role in impacting attitudes and behaviours relating to decision-making, risk taking and overall avalanche safety.



N=691



A. Most likely to express themes relating to - **An opportunity to challenge /test personal limits**

B. Most likely to express themes relating to - **Respecting the consequences of the terrain/ weather**

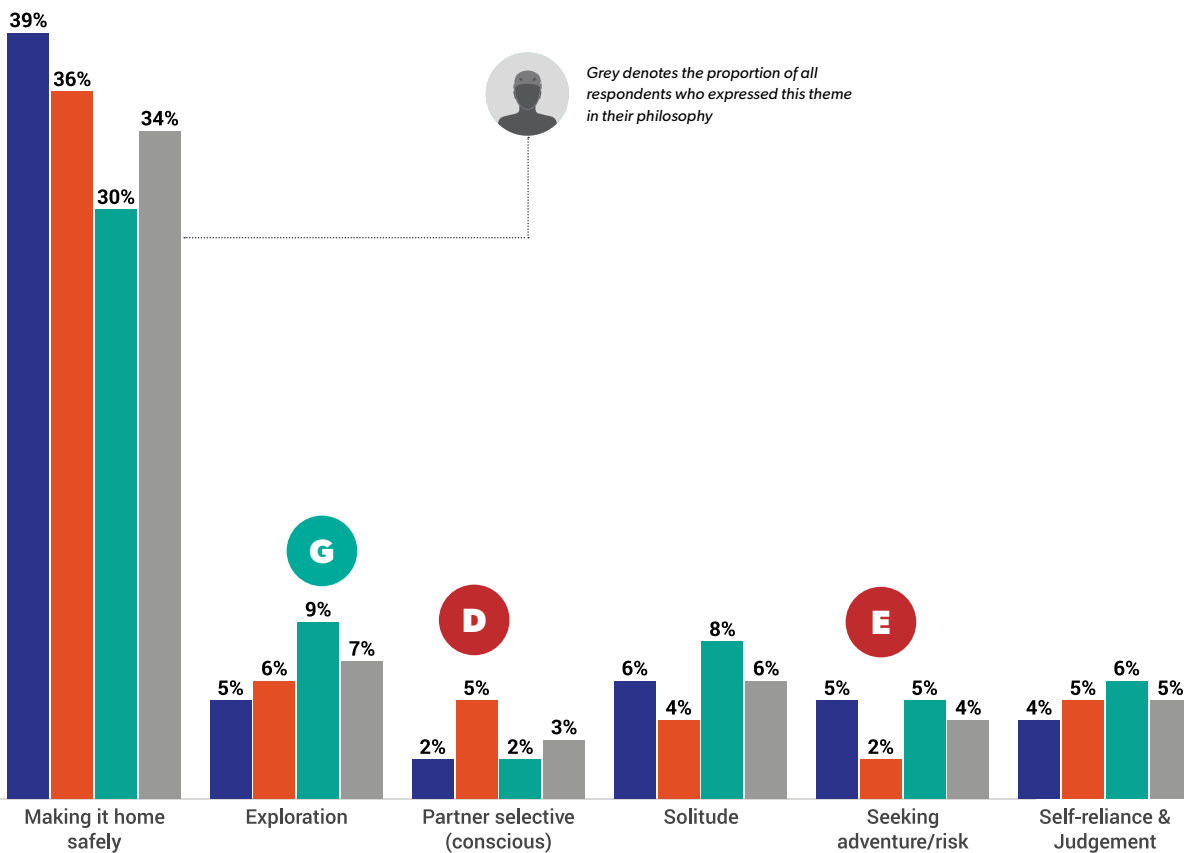
C. Most likely to express themes relating to - **Learning**

D. Most likely to express themes relating to - **Partner selective (conscious)**

E. Least likely to express themes relating to - **Seeking adventure/risk**

F. Most likely to express themes relating to - **Sacred place**

G. Most likely to express themes relating to - **Exploration**



“For me, mountaineering is about spending time in the mountain environment. It can be easy ridge trips or scrambling through to winter climbing ... it’s being out there that matters. As I’ve gotten older the objectives seem to matter less. I find the whole process mentally and physically refreshing.”

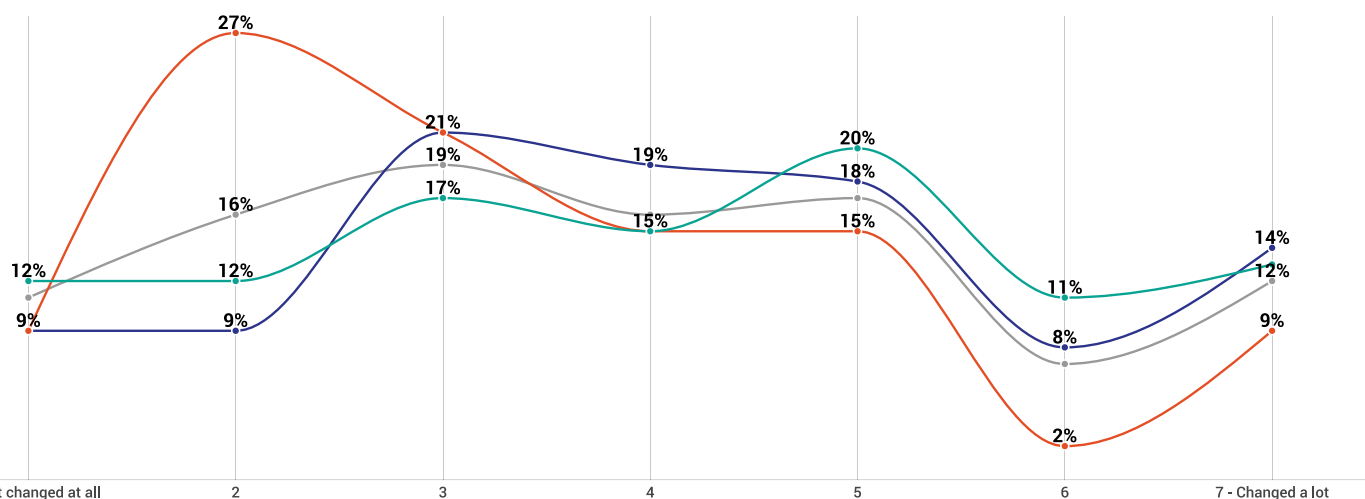
– RESEARCH PARTICIPANT

MANY RESPONDENTS INDICATED THAT THEIR ‘APPROACH AND PERSONAL PHILOSOPHY’ TO MOUNTAINEERING HAD CHANGED.

20% indicated that their approach and philosophy had changed significantly (6-7 on the below scale).

At the other extreme, **27%** said it had changed very little, if at all (1-2 on the scale).

The extent of change was measured on a scale (‘not changed at all’ to ‘changed a lot’), so this means that the balance (**54%**) represents mountaineers whose approach changed to varying degrees within these extremes.



PROPORTION OF THOSE WHO COMPLETED Q12. N=572

In general, based on what we know about their personas, it appears that the more mountaineering experience one has (either years climbing or frequency) the more likely they are to have changed their philosophy. This may be a case of climbers “maturing” or developing over time.

Q13. TO WHAT EXTENT, IF AT ALL, WOULD YOU SAY YOUR APPROACH AND PERSONAL PHILOSOPHY TO MOUNTAINEERING HAS CHANGED OVER TIME?



AND WHEN ASKED HOW THEIR APPROACH AND PHILOSOPHY HAD CHANGED...

There appears to be three key **'directions of change'**, with mountaineers mainly saying they have become:

- » ... more **safety** conscious **(52%)**
- » ... more focused on **enjoying** the mountains **(50%)**
- » ... placing greater value on spending **time with friends** in the mountains **(36%)**.

So, by implication, this means that they may have become less focused on achieving objectives, or their focus on objectives hasn't changed, but they have become more safety conscious when doing so.

ONLY THOSE WHO ANSWERED 4-7 ON THE PREVIOUS QUESTION (Q13) WERE ASKED THIS QUESTION. N=302

Q14. *HOW MUCH DO EACH OF THE FOLLOWING HELP TO EXPLAIN WHY YOUR APPROACH AND PERSONAL PHILOSOPHY TO MOUNTAINEERING HAS CHANGED?*

THE FACTORS CONTRIBUTING TO THIS CHANGE MOSTLY HAVE TO DO WITH PERSONAL EXPERIENCE

When asked about the main drivers of this change, **32% of respondents highlighted personal experience**, more than any other reason. However, also important as 'drivers' are:

- » Increasing family commitments **(22%)**
- » Growing older and becoming less physically able **(21%)**
- » A mountaineering event that happened to someone I knew (e.g., a serious injury, an avalanche) **(18%)**
- » Increasing work commitments **(17%)**

Q15. *TO WHAT EXTENT HAVE THE FOLLOWING REASONS CONTRIBUTED TO THE CHANGES IN YOUR APPROACH AND PERSONAL PHILOSOPHY TO MOUNTAINEERING?*

HOW AND WHY HAVE THEIR PHILOSOPHIES TOWARDS MOUNTAINEERING CHANGED?

Keep in mind that there was quite a broad spread of responses when asked if their personal philosophy had changed over time, with some saying it hadn't changed at all and others saying it had changed a lot. Here we explore factors that have influenced that change for each persona.



YOUNG, ACTIVE & AMBITIOUS



OCCASIONAL ADVENTURER



SEASONED VETERAN

DOES NOT EXPLAIN WHY AT ALL

HELPS TO EXPLAIN A LOT

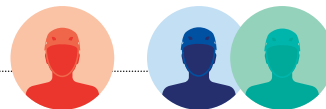


Orange shows statistically significant difference between personas

I have become more focused on achieving climbing objectives and goals



I have become more focused on enjoying the mountains



I have become more safety conscious



I have placed greater value on spending time with friends in the mountains



I have felt more pressured to complete climbs on my tick-list



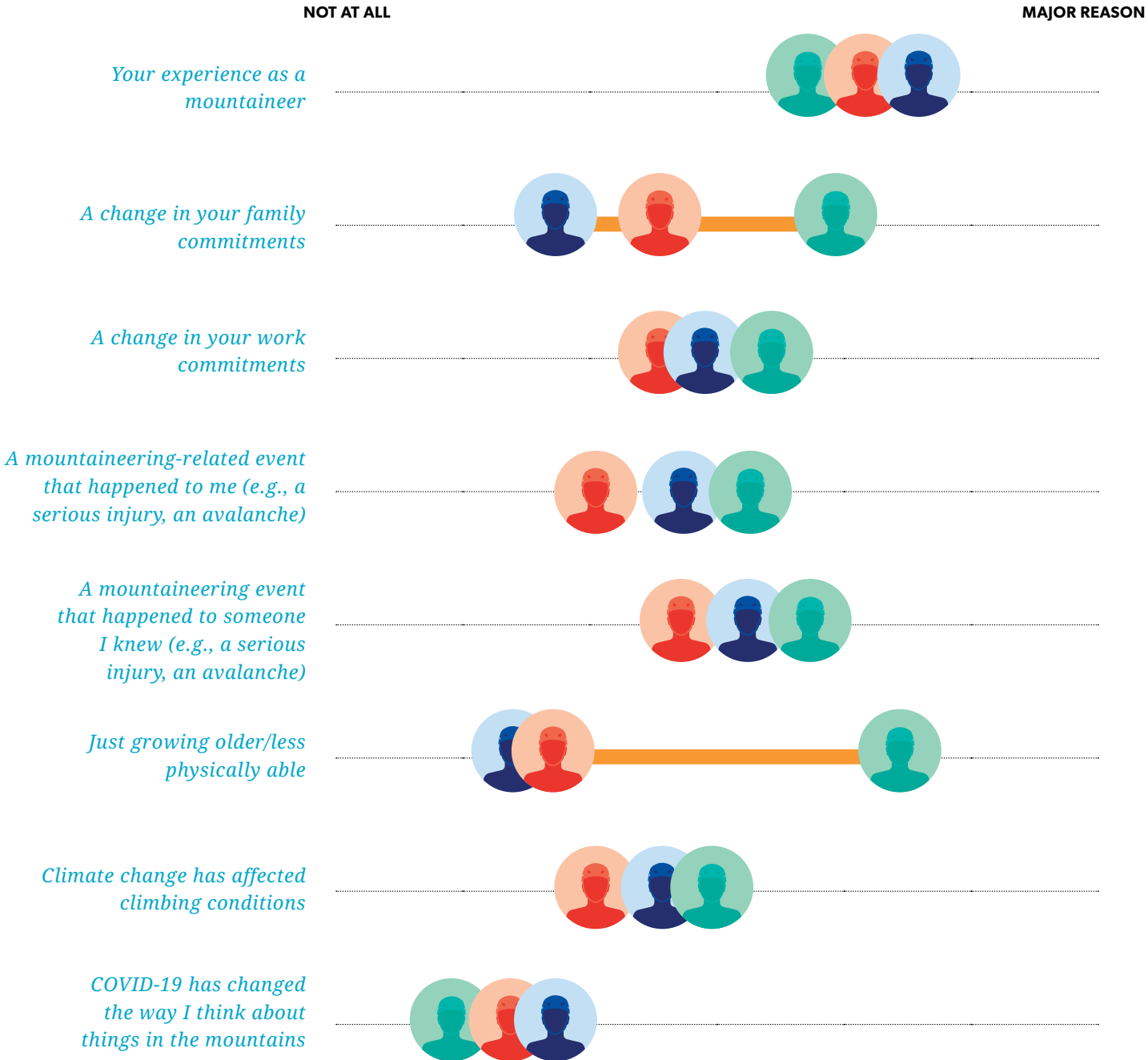
Q14. HOW MUCH DO EACH OF THE FOLLOWING HELP TO EXPLAIN WHY YOUR APPROACH AND PERSONAL PHILOSOPHY TO MOUNTAINEERING HAS CHANGED?



PHOTO: West Hoe Pass, Explorer Glacier, Westland, Nathan Watson

HAVE LIFE EVENTS CONTRIBUTED TO CHANGING MOUNTAINEERING PHILOSOPHIES?

Overall, we can see a clear sign that climbers' philosophies have changed due to personal factors, such as their experience, more than external ones like climate change or world events.



Q15. TO WHAT EXTENT HAVE THE FOLLOWING REASONS CONTRIBUTED TO THE CHANGES IN YOUR APPROACH AND PERSONAL PHILOSOPHY TO MOUNTAINEERING?



WHAT MOTIVATES THEM?

After being asked about their 'approach and personal philosophy to mountaineering', respondents were presented with a list of possible 'motivations' and asked to rate how relevant each was to them personally.

Two key motivational themes emerged:

- » 'Having an enjoyable day out...'
 - in the mountains, regardless of my objective' (**77% rated this highly**) and
 - with friends' (**68%**).
- » 'Managing challenges'
 - 'Managing the challenges that I come across' (**56%**),
 - 'Overcoming the challenges of being in the mountains' (**44%**) and
 - 'Developing my skills' (**56%**).

Motivations less frequently mentioned were:

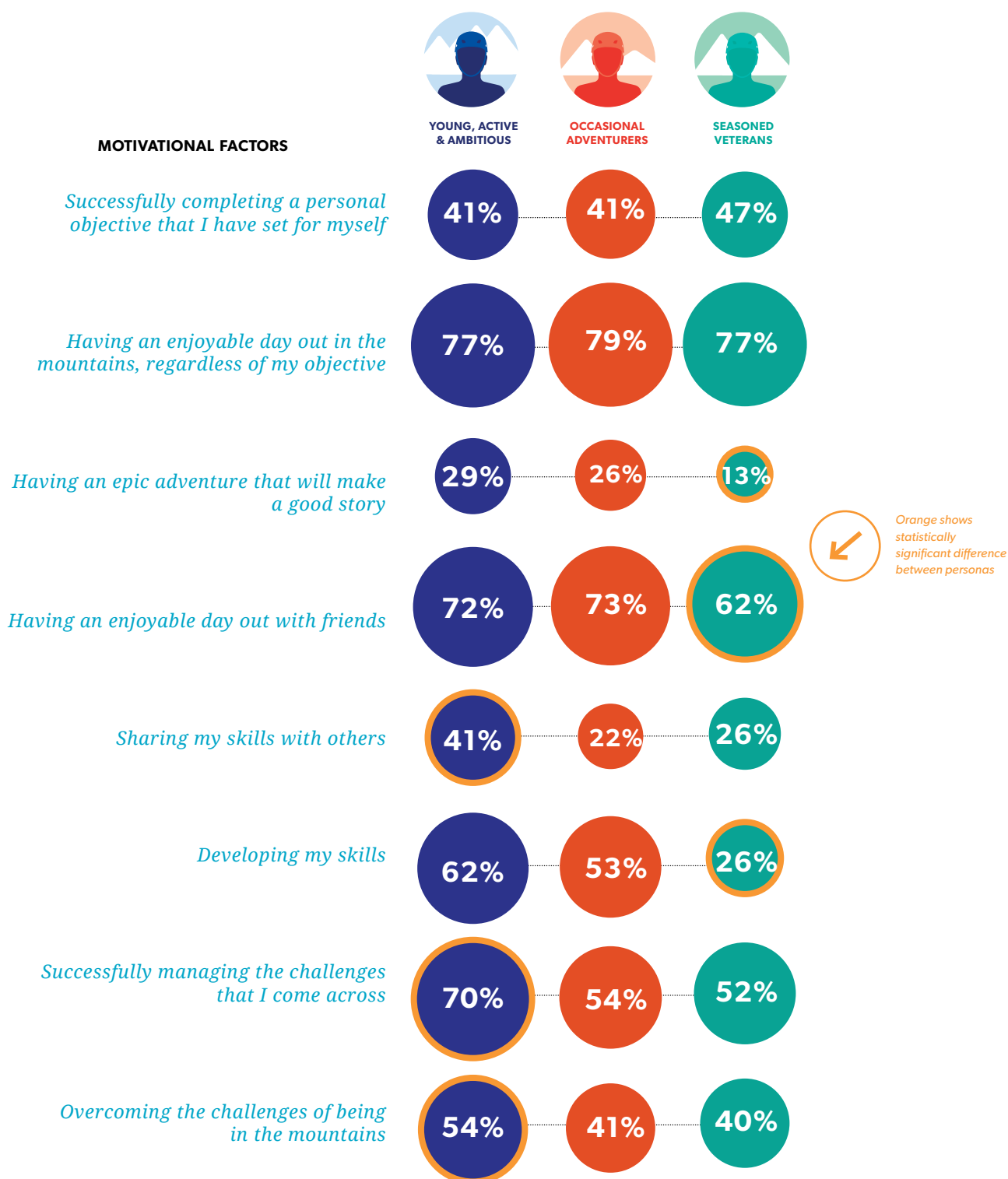
- » 'Successfully completing a personal objective that I have set for myself' (e.g., reaching a summit or completing a particular route) (**39%**).
- » 'Having an **epic adventure** that will make a good story' (**21%**).

These findings appear to mirror their approach and personal philosophy.

Q16. AS A MOUNTAINEER, WHAT MOTIVATES YOU?

DO MOTIVATIONS DIFFER FOR EACH PERSONA?

Understanding what motivates mountaineers is important, because motivations influence behaviours such as decision-making and risk taking. The diagram below shows the percentage of respondents who strongly and very strongly agree (6 or 7, on a 7-point scale) with each motivational factor.





ENJOYING THE MOUNTAINS AND MAKING IT HOME SAFELY ARE BOTH KEY THEMES FOR MOTIVATION AND PERSONAL PHILOSOPHY. ARE THESE REFLECTED IN TRIP PLANNING AND PREPARATION?

If we look at what is prioritised when planning a trip ...

- » ... we find that the **forecasted weather and snowpack conditions (84%)** and skill level (themselves or their partners, 78% and 80% respectively) are the most frequently identified.

This priority about the skill level of the people they climb with is interesting given only **3%** of respondents mentioned a theme of 'partner selective' in their personal philosophy. This may suggest that mountaineers are thinking beyond motivational factors when planning a trip.

- » However, **21%** of respondents still indicated 'Achieving a personal objective like reaching the summit or climbing a particular route'.

Q18. *HOW MUCH DO YOU PRIORITISE EACH OF THESE FACTORS, WHEN DECIDING ON THE RECREATIONAL TRIP YOU WILL DO?*



PHOTO: Glacier Peak, Malcolm McRae

WHEN THE WEATHER FORECAST WAS FACTORED INTO THEIR PLANNING...

Most agreed that these two statements described them 'a lot':

- » When the weather forecast is suboptimal, I usually **adjust my trip** plans and find an objective that is more likely going to be suited to the expected weather conditions **(75%)**.
- » When the weather forecast is suboptimal, I'm **prepared to wait** for a suitable weather window so I can continue with my original objective **(71%)**.

As opposed to:

- » **8%** agreeing a lot with the statement, 'A suboptimal weather forecast typically **does not deter me** from attempting a trip if it looks like there is still some chance of success'.

Q24. HOW MUCH WOULD YOU SAY EACH OF THE FOLLOWING STATEMENTS DESCRIBES YOUR APPROACH TO DECISION MAKING ON A RECREATIONAL TRIP?

MOST MOUNTAINEERS CONSIDER THEMSELVES TO BE REASONABLY CAREFUL PLANNERS...

- » **94%** either described their approach to planning as 'planning in great detail' **(44%)** or planning by 'making lists but not going overboard' **(50%)**.
- » No one answered, 'I don't do any forward planning or organising, I just go', and only **1%** said they 'let others do the organising and do what they tell me'.

Q19. THINKING ABOUT WHAT YOU DO BEFORE YOU DEPART ON A RECREATIONAL TRIP. WHICH ONE OF THE FOLLOWING BEST DESCRIBES WHAT HAPPENS WHEN YOU GO ON A TRIP?

“Mountains and any alpine environment deserve the highest amount of respect when we are invited to climb them. We can challenge ourselves and push our own comfort zones to attain great personal achievements, and euphoria from reaching a summit, but should always be aware that the mountain, and the natural elements surrounding it can always be more powerful than we are, no matter how prepared we choose to be. Knowing when to back down is critical to human survival and the ongoing fulfillment and enjoyment that the mountains can provide us as mountaineers.”

– RESEARCH PARTICIPANT

WHILE THEY'RE OUT ON THEIR TRIP, ARE THEY CONSCIOUSLY AND DELIBERATELY MONITORING CONDITIONS?

- » **83%** stated they **always continuously monitor conditions** while they're on a trip
- » **7%** stated they monitor conditions at **predetermined points/cruxes/times** while on their trip
- » **9%** stated they monitor conditions **from time to time, but not in a predetermined way**
- » No one answered 'never'.

Q22. *AND TO WHAT EXTENT DO YOU ACTIVELY (CONSCIOUSLY AND DELIBERATELY) MONITOR CONDITIONS TO INFORM YOUR DECISION-MAKING WHILE YOU'RE ON YOUR TRIP?*

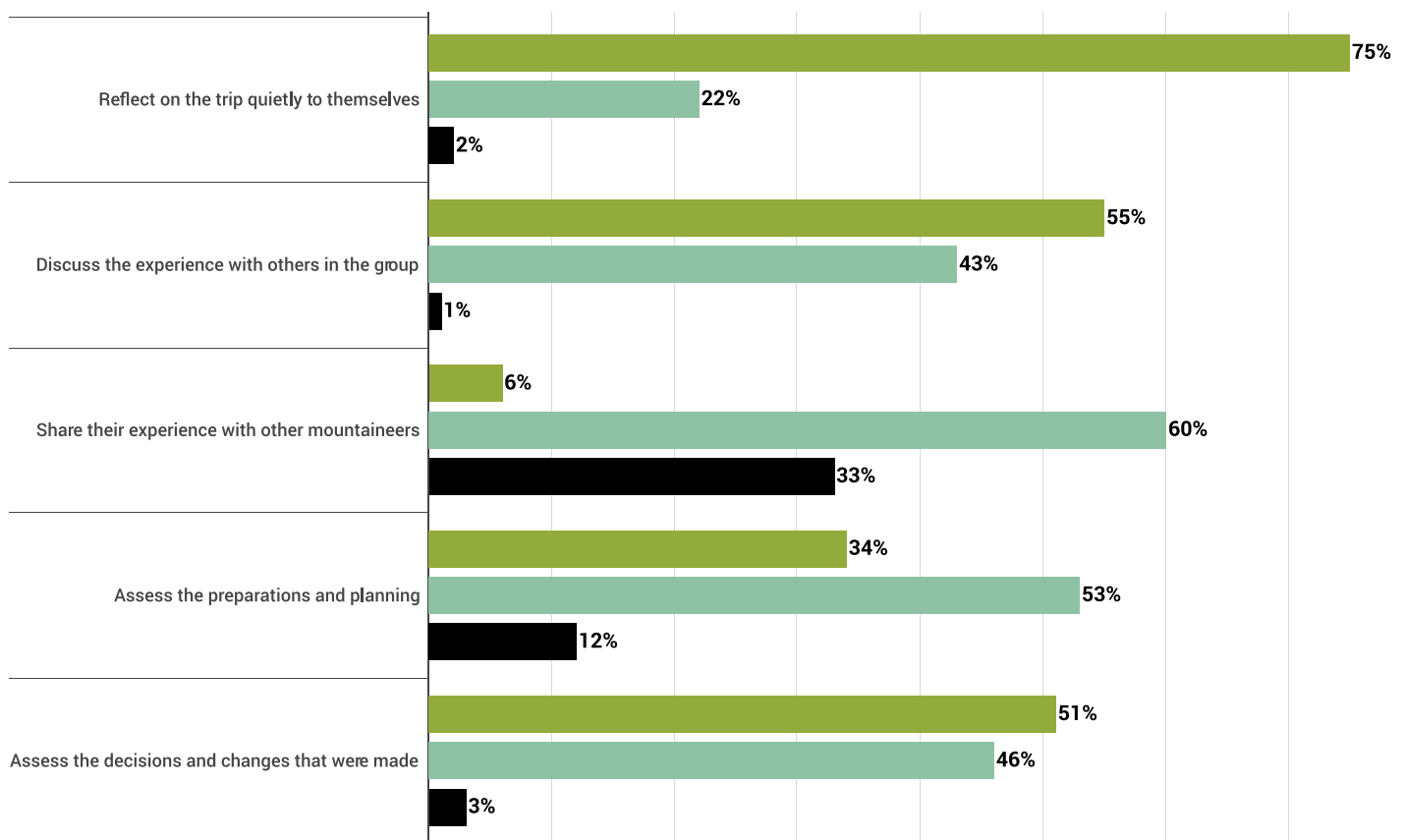


AND ON RETURN, IS THERE ANY POST-TRIP REFLECTION?

The type of post-trip reflection mountaineers use varies greatly. Most commonly mountaineers are ‘reflecting on the trip quietly to themselves’ (75%). However, interestingly 22% only sometimes do this.

More formal reflection styles, such as ‘assessing the preparation and planning’ and ‘assessing decisions or changes that were made’ are performed less frequently. Although in saying this, it is possible these two topics are part of ones reflection ‘quietly to themselves’. Surprisingly, a third of respondents said they never share their experience with other mountaineers.

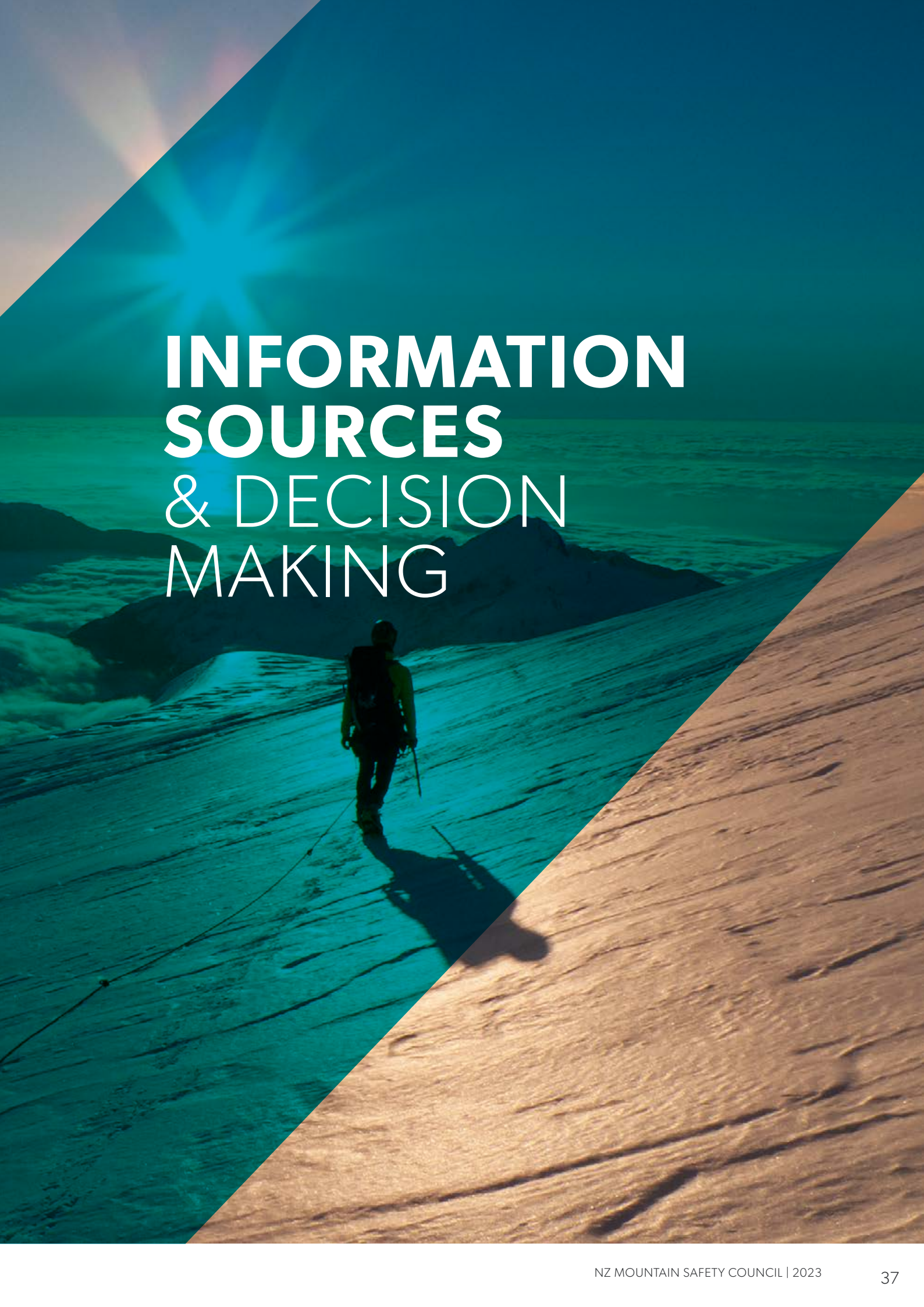
● Always ● Sometimes ● Never



Q23. WHEN YOU RETURN FROM YOUR MOUNTAINEERING TRIP, HOW OFTEN DO YOU TYPICALLY DO EACH OF THE FOLLOWING?



PHOTO: Balfour Neve towards Mt Tasman-Horokoau, Rob Frost

A photograph of a mountain climber on a snowy slope, overlaid with a teal gradient. The climber is in the lower center, wearing a dark jacket and a backpack, with a long shadow cast behind them. The background shows a vast, snow-covered mountain range under a clear sky. The teal overlay is a large, semi-transparent shape that covers the top and left sides of the image, creating a modern, graphic look.

INFORMATION SOURCES & DECISION MAKING



INFORMATION SOURCES & DECISION MAKING

PHOTO: Mt Alymer at the head of Tasman Glacier, Taichiro Naka

WHAT SOURCES OF INFORMATION DO THEY USE?

With so many unique sources of information available we used a pre-determined list of sources, rather than a free text response.

With this approach we established...

Most people **'always'** used the **NZ Avalanche Advisory (81%)**, and a further **14%** 'sometimes' did. Possibly of more interest, **4%** said they **'never'** used it. On the following page we break this down by our three personas.

These information sources were 'always' used; **DOC Visitor Centres (by 17%)**, Information on (local) conditions from **professional mountaineering guides (13%)**, Experienced **recreational mountaineers (13%)**, **social media groups/pages (7%)**, **friends and family (14%)** and **mountaineering club members (6%)**.

Of those most 'never' used; **social media groups/pages (33%)**, Information on (local) conditions from professional mountaineering guides **(26%)** and **mountaineering club members (32%)**.

Q20. WHAT SOURCES OF INFORMATION DO YOU TYPICALLY USE FOR A RECREATIONAL TRIP?

WITH THE WEATHER IN MIND ...

The MetService website or app is 'always' used by **83%**.

Also mentioned in this regard are the NIWA Parks weather service ('always' used by **23%** of respondents) and 'other public weather source' (always used by **78%** of respondents).

When combining 'always' and 'sometimes' used, the use of 'MetService' and 'other public weather source' were almost identical with **98%** and **96%** respectively.

Worth noting here, the NIWA Parks service is very new compared to other services, so it hasn't had the same timeframe to gather users. Respondents were not asked to name the 'other' source they use.



DO THE PERSONAS USE THESE SOURCES DIFFERENTLY TO EACH OTHER?

YOUNG, ACTIVE
& AMBITIOUS



OCCASIONAL
ADVENTURERS



SEASONED
VETERANS



Least likely to use a DOC Visitor Centre (33% 'never' do)

Most likely to talk to other experienced recreational mountaineers (14% 'always' do, also most likely to be part of a mountaineering club).

Least likely to talk with a professional mountain guide about local conditions (35% 'never' do)

Least likely to talk with other mountaineering club members (34% 'never' do, also the least likely to be part of a club)

Slightly more likely to use family and friends as a source of pre-trip information (18% 'always' do).

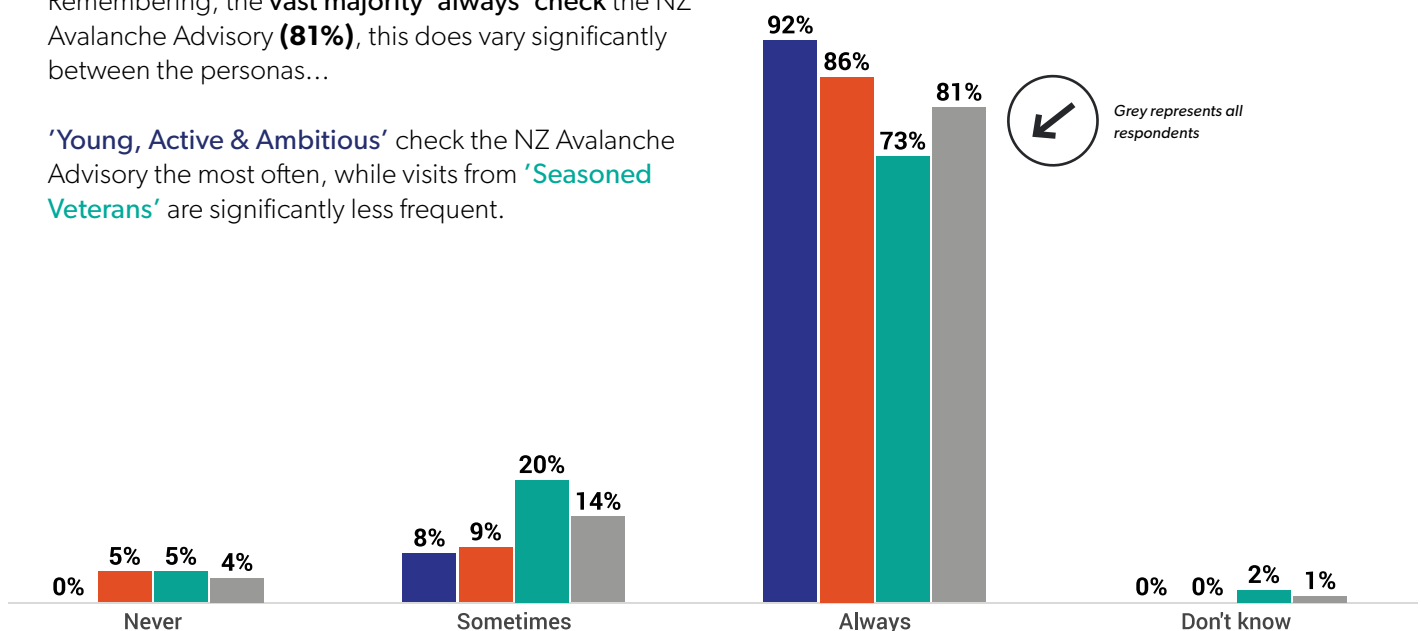
Far less likely to use social media (45% 'never' do)

Most likely to use a DOC Visitor Centre (22% 'always' do).

USING THE NZ AVALANCHE ADVISORY...

Remembering, the **vast majority 'always' check** the NZ Avalanche Advisory (**81%**), this does vary significantly between the personas...

'Young, Active & Ambitious' check the NZ Avalanche Advisory the most often, while visits from 'Seasoned Veterans' are significantly less frequent.

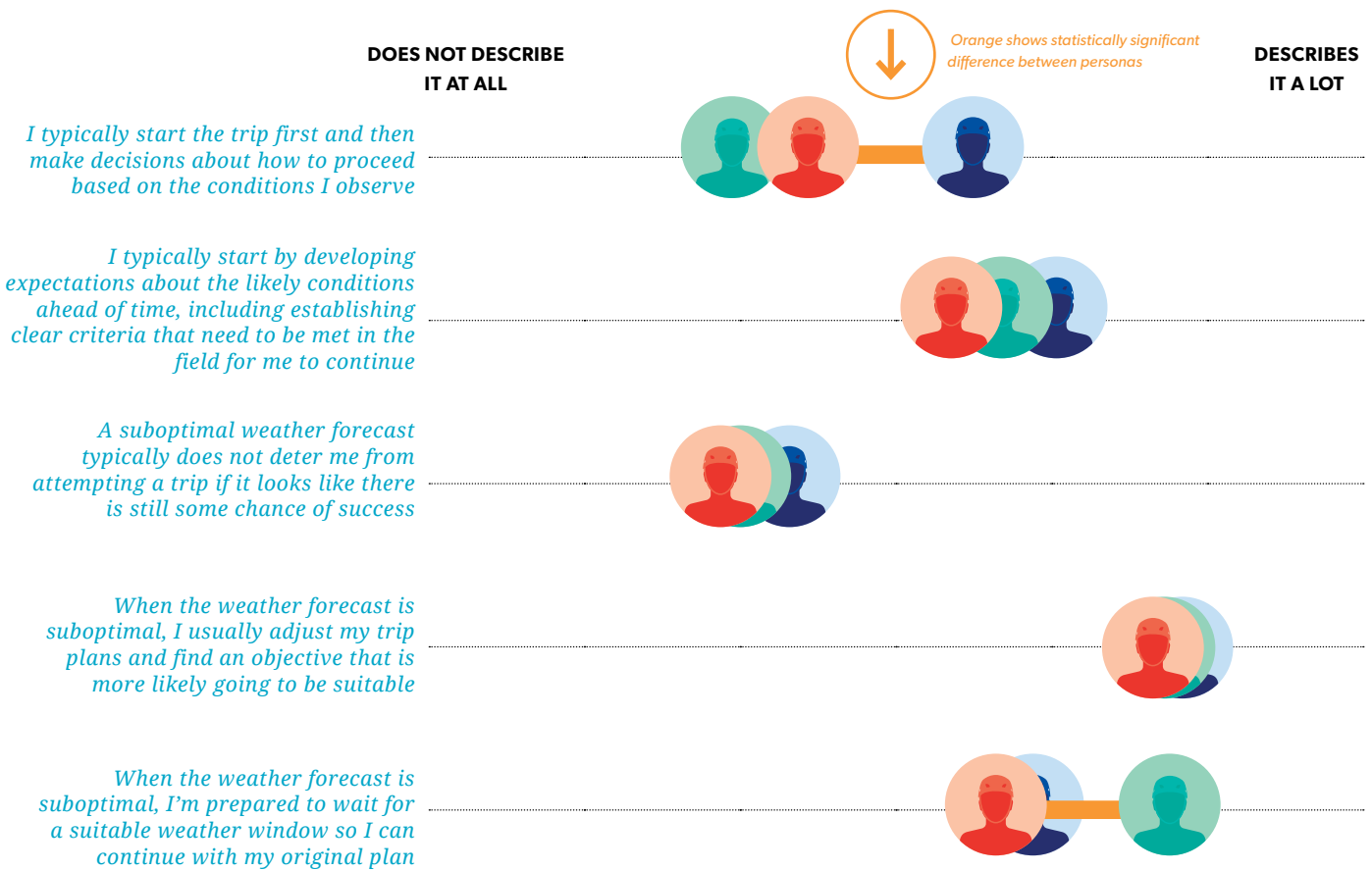


WITH RESPECT TO CONDITIONS AND THE FORECAST, WHAT TYPE OF DECISION MAKERS ARE THEY?

In general, the three personas all appear to be similar decision makers when it comes to weather and conditions. However, 'Young, Active and Adventurous' identify themselves as more likely to start the trip and then make decisions about how to proceed based on conditions.

Given they climb the most often by far, this may indicate they are more likely to 'go have a look' and make calls in the field rather than pull back before the trip has started.

Conversely, seasoned veterans appear more likely to 'pull the pin' and wait for another opportunity to complete their original plan when the forecast is suboptimal. This makes sense based on how long they have been climbing and the fact that they typically have more family commitments/physical limitations associated with age.



Q24. HOW MUCH WOULD YOU SAY EACH OF THE FOLLOWING STATEMENTS DESCRIBES YOUR APPROACH TO DECISION MAKING ON A RECREATIONAL TRIP?

HOW DO THEY MAKE DECISIONS WHEN THEY'RE PART OF A GROUP?

YOUNG, ACTIVE & AMBITIOUS



OCCASIONAL ADVENTURERS



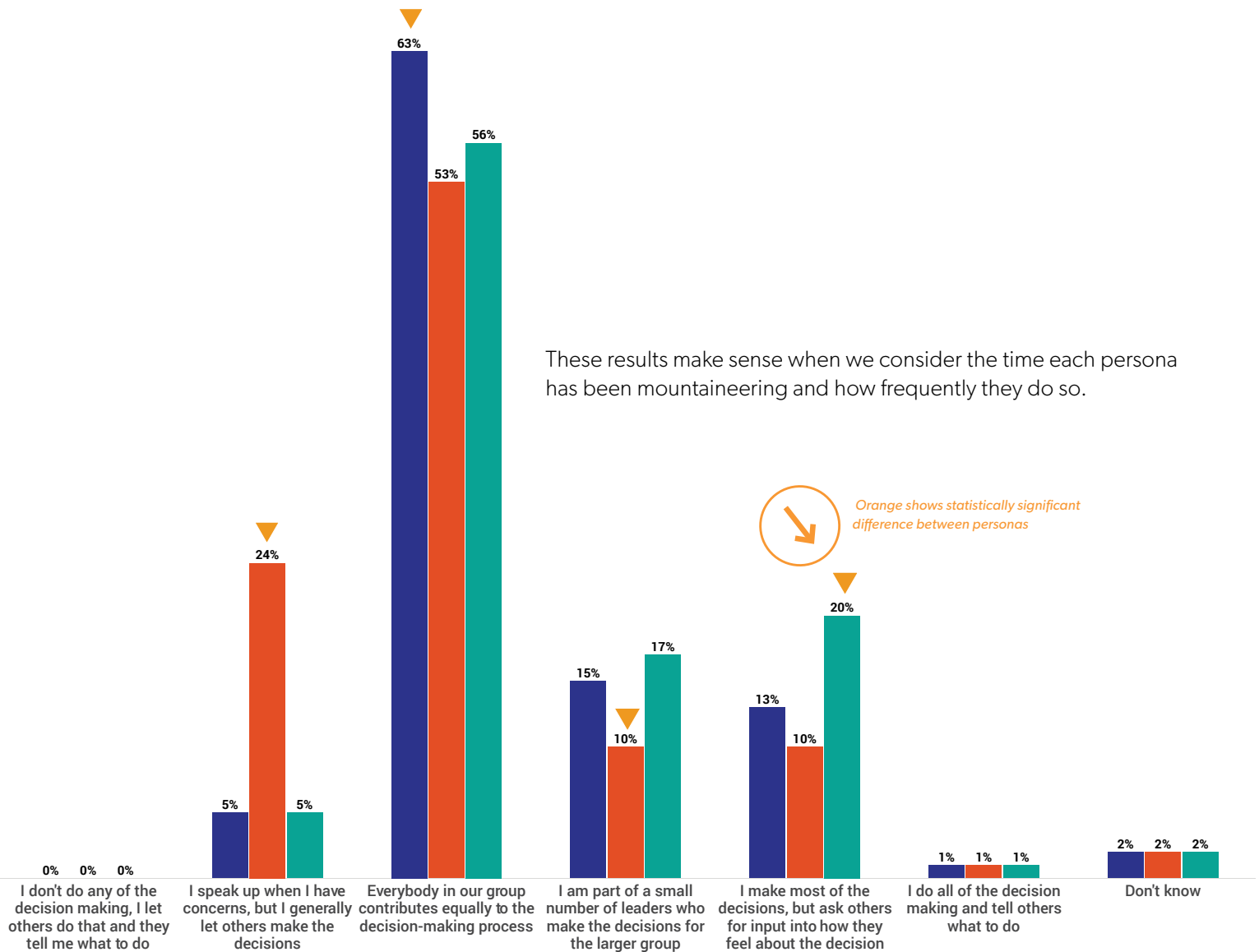
SEASONED VETERANS



Most likely to be part of a mountaineering group where **everyone is equally making decisions.**

Far more likely to **let others do the decision making for them**, but they are **comfortable speaking up if they have concerns.**

More likely to be the **leaders/decision makers**, but in doing so they're also asking others for their input.



These results make sense when we consider the time each persona has been mountaineering and how frequently they do so.

Q21. AND WHEN YOU'RE ON A RECREATIONAL MOUNTAINEERING TRIP, WITH YOUR MOST REGULAR CLIMBING PARTNER/S, WHICH ONE OF THE FOLLOWING BEST DESCRIBES YOU?

“I enjoy the challenges the mountains present and the flow state I find myself in when I move. I enjoy the comradery adventure builds between friends or a team. I also find great satisfaction in solving problems and making decisions on the fly.”

– RESEARCH PARTICIPANT





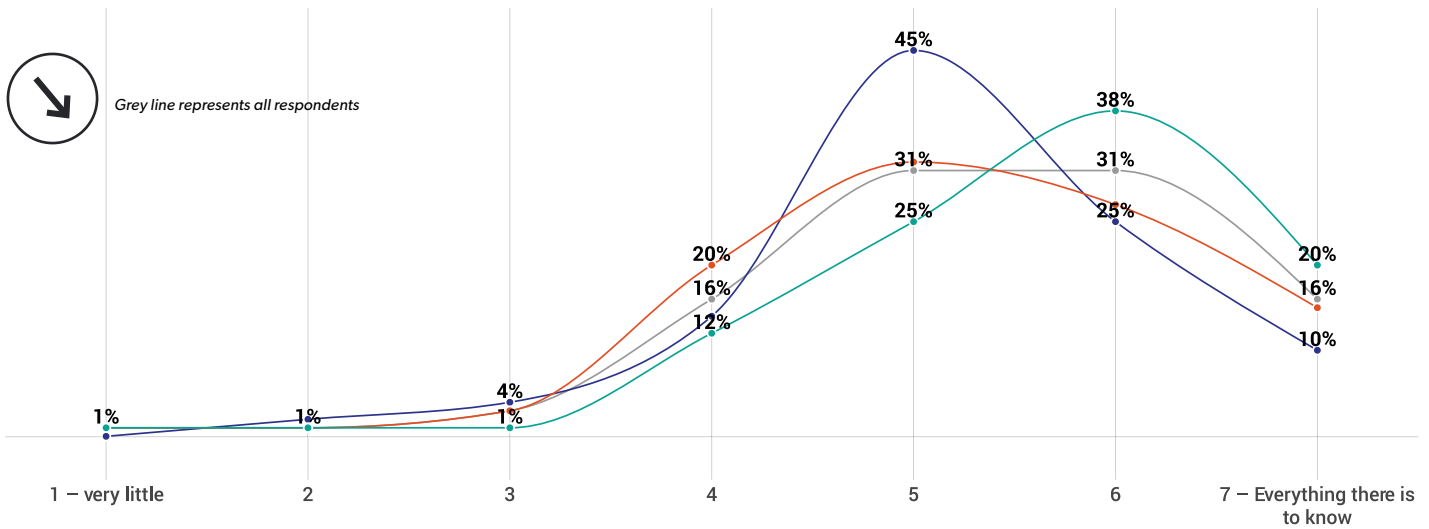
PHOTO: Pleasant Valley, Jonathan Crane



ATTITUDES & BEHAVIOURS TOWARDS AVALANCHES

HOW MUCH DO MOUNTAINEERS THINK THEY NEED TO KNOW ABOUT AVALANCHES?

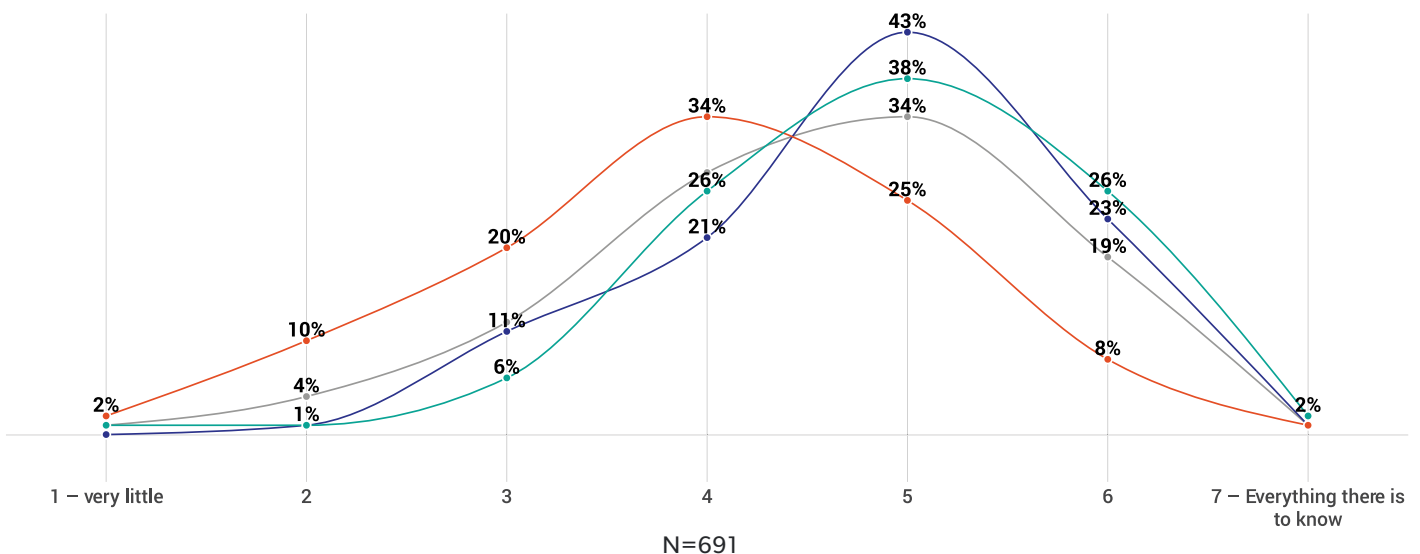
Overall, slightly less than half (**47%**) agreed that it was very important to know as much as possible about avalanches (6 or 7 on the scale below), but this varied greatly by persona.



Q25. THINKING SPECIFICALLY ABOUT AVALANCHES. HOW MUCH WOULD YOU SAY YOU NEED TO KNOW ABOUT AVALANCHES AND AVALANCHE RISK MANAGEMENT, AND WHAT CAUSES THEM, IN ORDER TO GO MOUNTAINEERING SAFELY?

AND HOW DOES THIS COMPARE TO WHAT THEY DO KNOW ABOUT AVALANCHES?

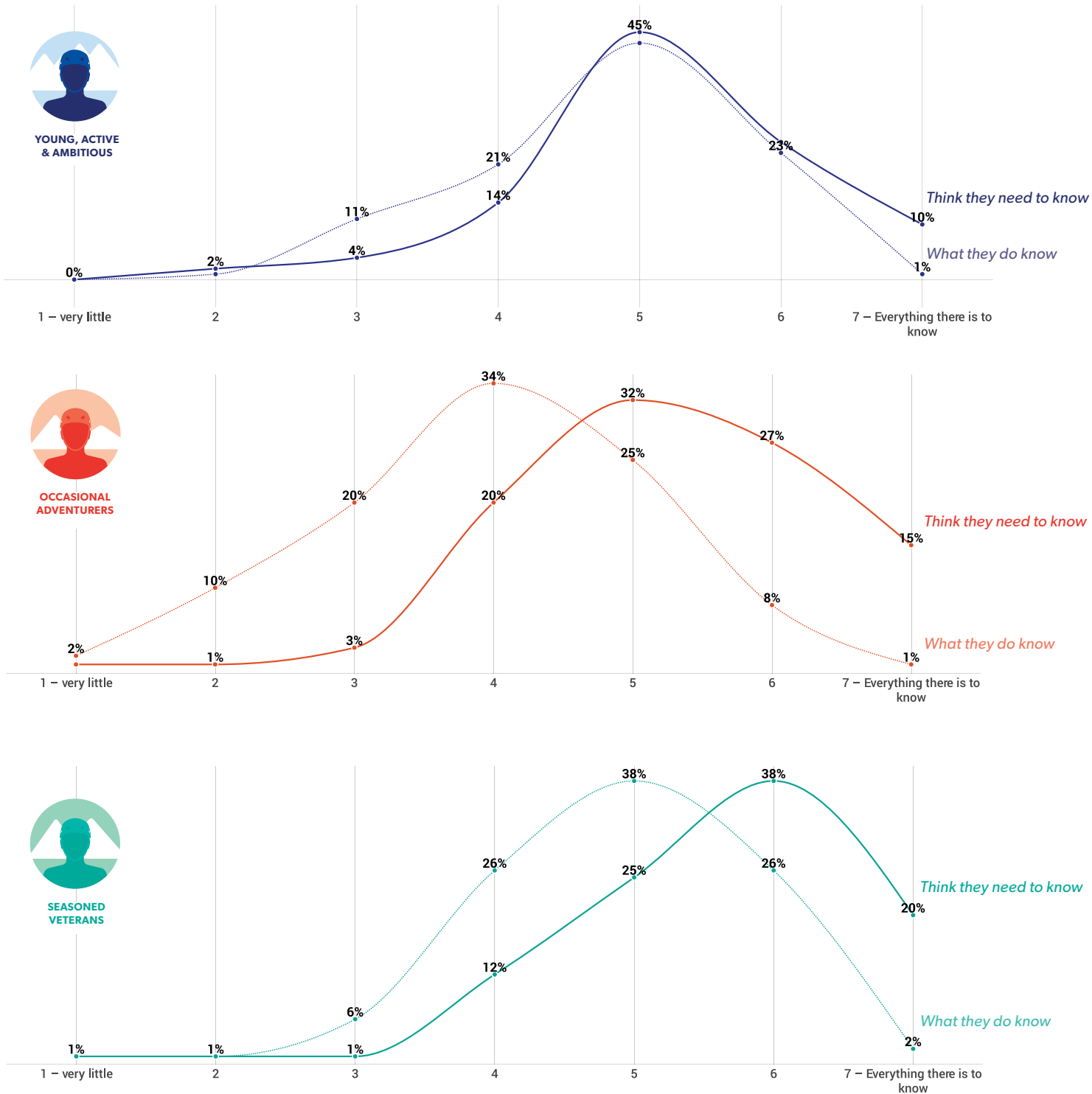
Overall, one-fifth (**20%**) said they had a comprehensive knowledge of avalanches already (6 or 7 on the scale below). Not surprisingly, most (**62%**) said their knowledge was mid-range (4 or 5 out of 7). Just like the above findings, this varied by persona. In this case, you can see the difference between 'Occasional Adventurers' and 'Young, Active and Ambitious' and 'Seasoned Veterans'.



Q26. WITH THIS IN MIND, HOW MUCH WOULD YOU SAY YOU DO KNOW ABOUT AVALANCHES AND AVALANCHE RISK MANAGEMENT, AND WHAT CAUSES THEM?

LOOKING AT EACH PERSONA

We can see that 'Young, Active and Ambitious' seem to think they know what they need to know. Whereas, with 'Occasional Adventurers' and 'Seasoned Veterans' there is an acknowledgement that they believe they need to learn more.



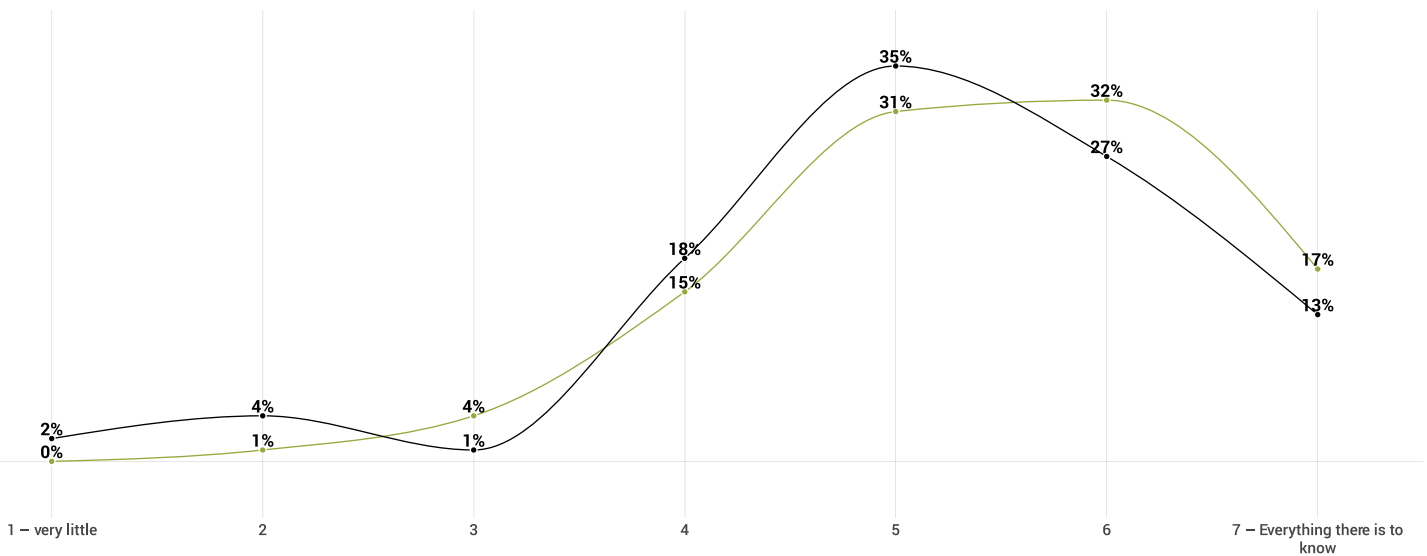


LOOKING AT THESE RESULTS BY COMPARING MOUNTAINEERS WHO'VE HAD TRAINING AND THOSE WHO HAVEN'T...

HOW MUCH THEY THINK THEY NEED TO KNOW ABOUT AVALANCHES

Here we see very little difference between those who have and have not completed training. However, those who have not completed training seem less concerned. Perhaps this is a case of training teaching us what we don't know?

● Completed training ● Not completed training



N=691

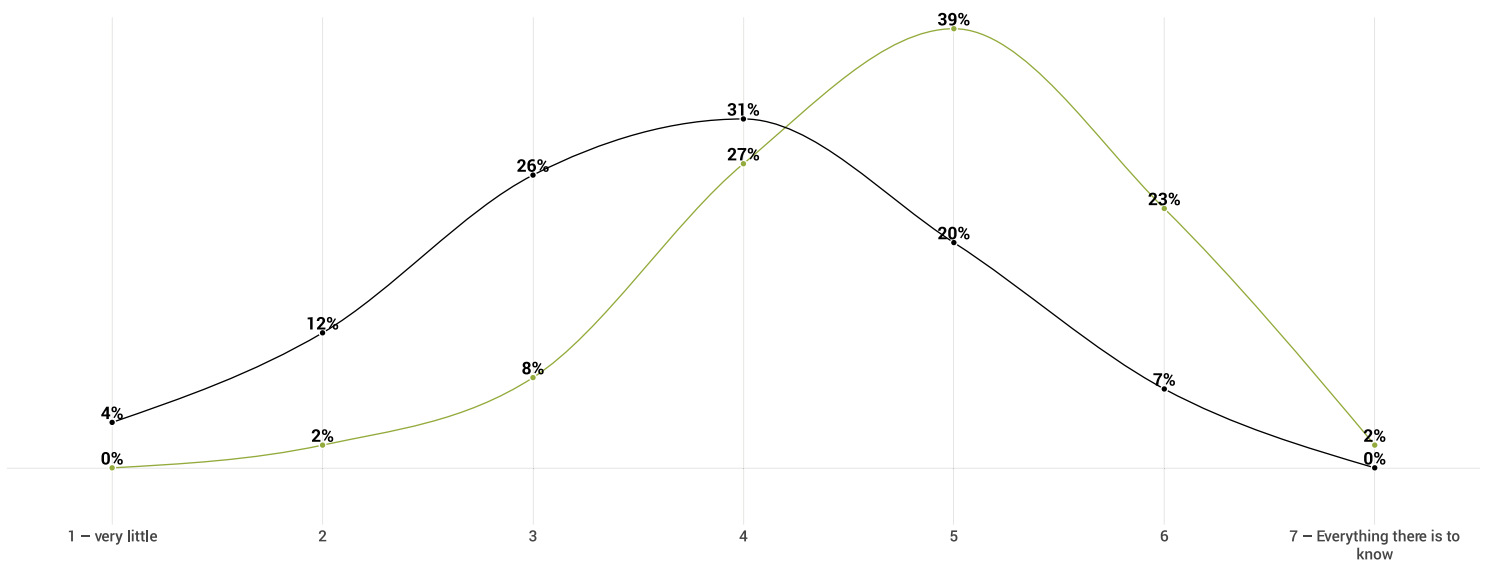


PHOTO: NZAA Public Observation Tower Ridge, Nick Shearer

HOW MUCH THEY DO KNOW ABOUT AVALANCHES

Here we see a clear difference between those with and without training. Those who have completed some form of training are self-reporting that they do know more compared to those with no training. While those without training seem to recognise they know less, they do still seem to think they know a moderate amount. Is this realistic without any formal education?

● Completed training ● Not completed training



N=691



WITH THESE RESULTS IN MIND, IS THERE AN AVALANCHE KNOWLEDGE GAP?

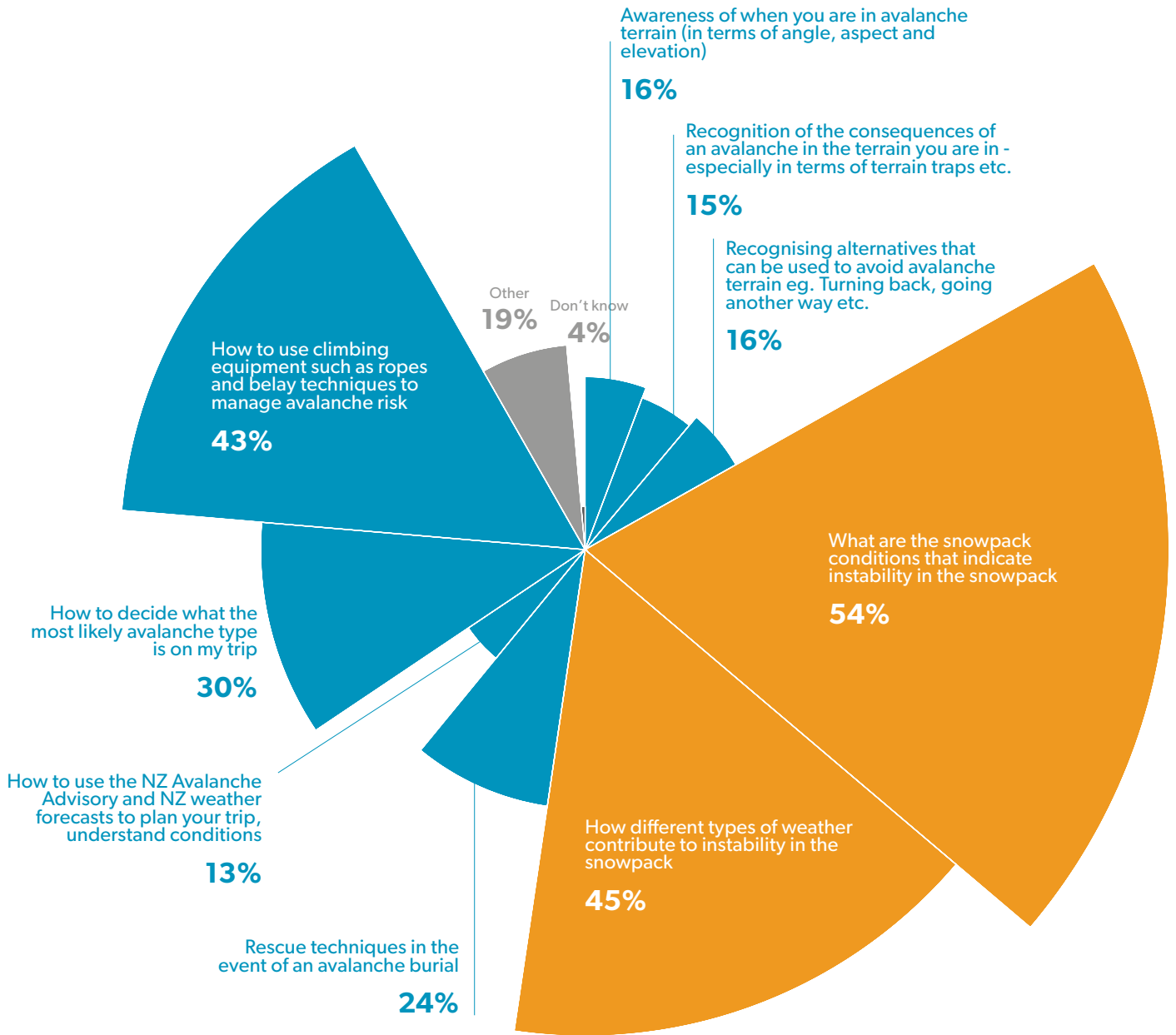
We've seen that about half (**47%**) of respondents agree that it's important to have a comprehensive understanding of avalanches, yet a much smaller amount (**20%**) said they had this level of knowledge already. **This suggests an avalanche knowledge gap exists.**

When asked about their 'knowledge gaps' with respect to avalanches, most respondents stated these were in terms of **snowpack-related matters**:

- » Snowpack conditions that indicate instability (**54%**)
- » How different weather conditions contribute to snowpack instability (**45%**).

See the following page for a detailed breakdown of knowledge gap topics.

SELF IDENTIFIED KNOWLEDGE GAPS



N=691

Q27. IN WHICH OF THE FOLLOWING AREAS DO YOU FEEL YOU HAVE A 'KNOWLEDGE GAP' ABOUT AVALANCHES?

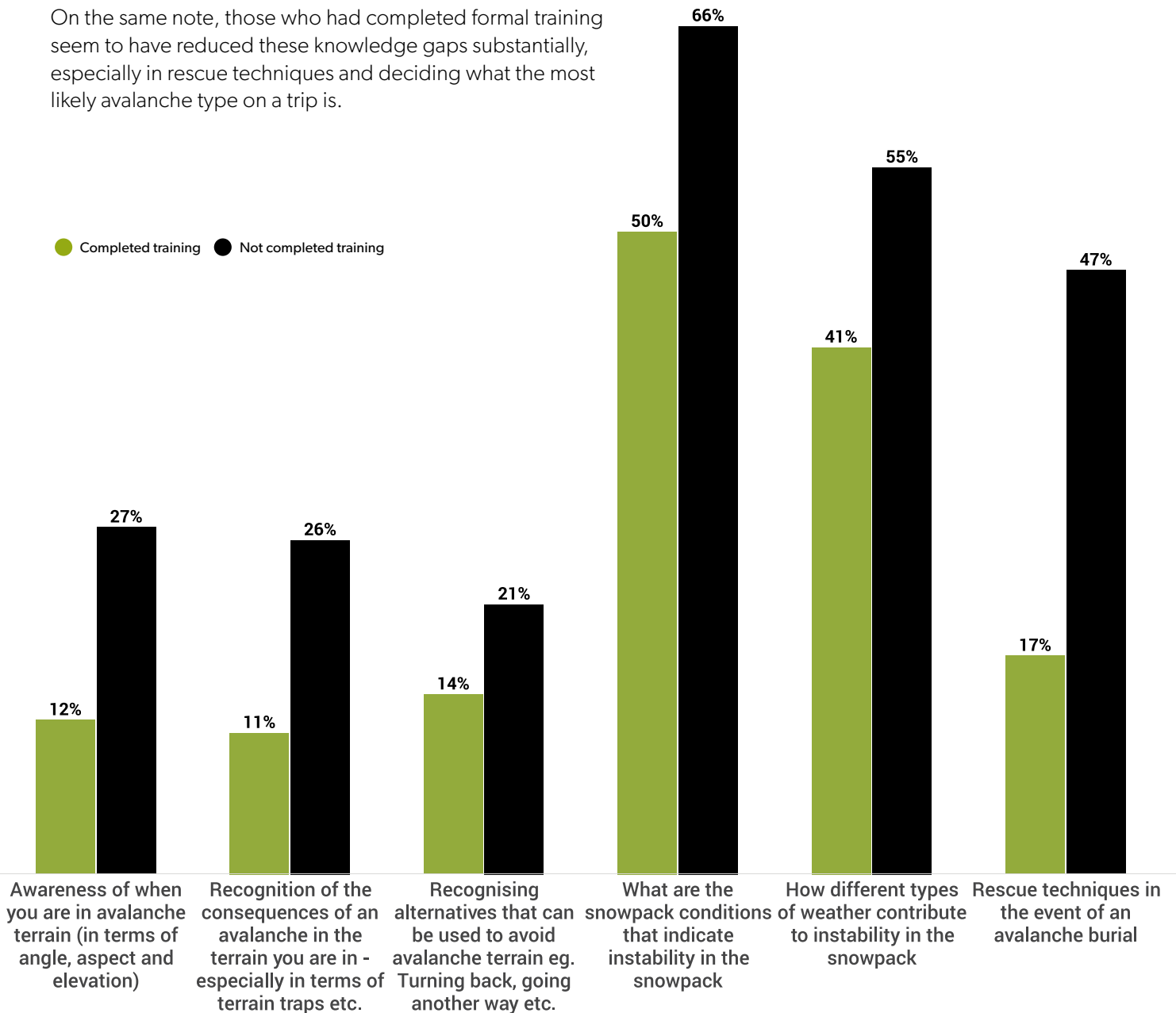


DOES PRIOR AVALANCHE TRAINING HAVE AN IMPACT ON A KNOWLEDGE GAP?

Universally, those who had not completed prior avalanche training admitted they have a greater knowledge gap than those who have completed avalanche training.

On the same note, those who had completed formal training seem to have reduced these knowledge gaps substantially, especially in rescue techniques and deciding what the most likely avalanche type on a trip is.

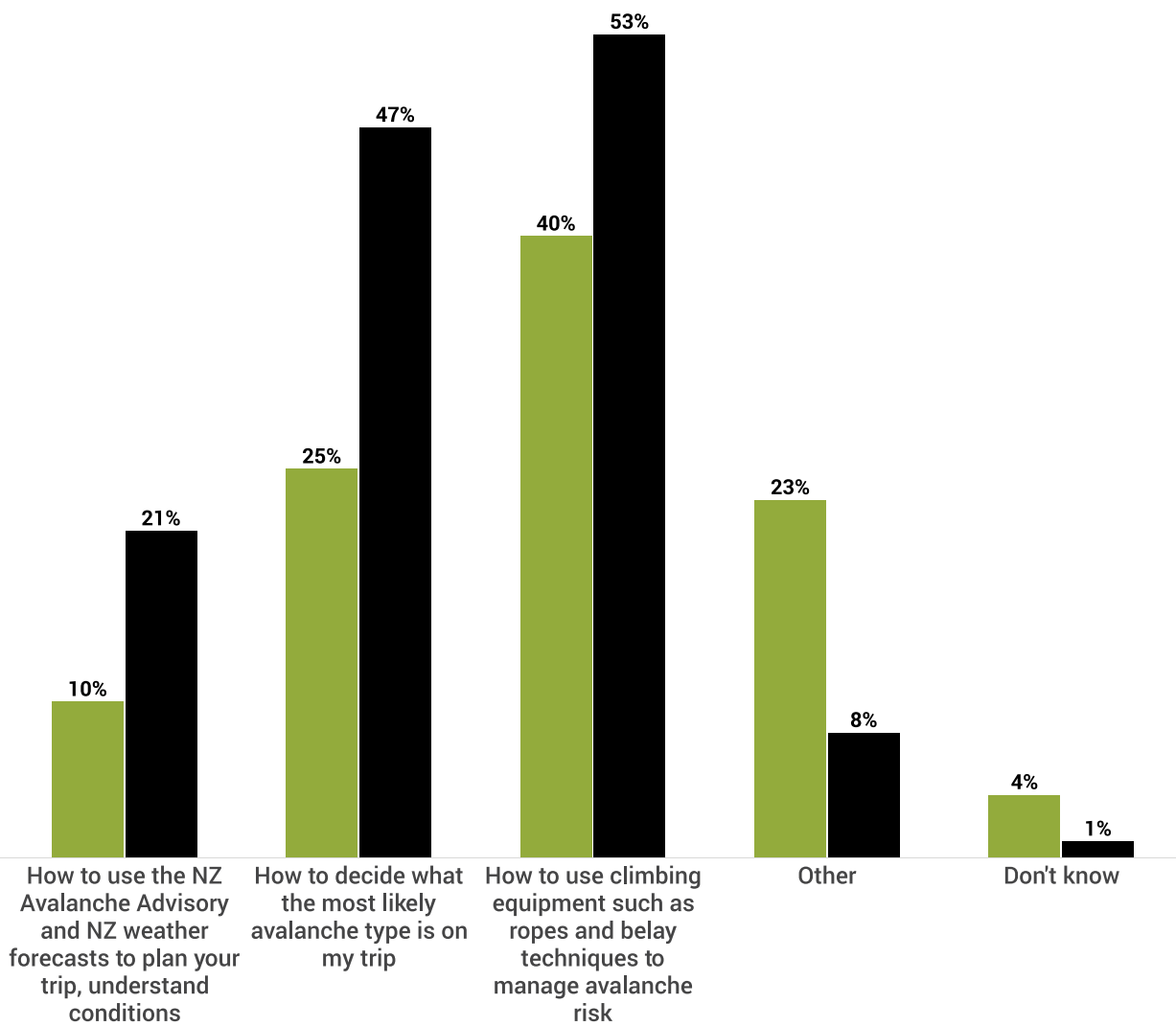
● Completed training ● Not completed training



N=691



PHOTO: NZAA Public Observation, Tongariro, Megan Dimozantos





DOES THE AVALANCHE KNOWLEDGE GAP VARY BETWEEN PERSONAS?

Each persona has knowledge gaps about avalanches, here we can see their self-reflection on where those gaps exist.

'Occasional Adventurers' identify the most knowledge gaps, whereas 'Young, Active and Ambitious' and 'Seasoned Veterans' are relatively similar. Of note, the 'other' categories are relatively large. The vast majority of these responses indicated they did not feel they had any specific knowledge gap, but most of these people stated that there is always more to learn and nobody knows everything.

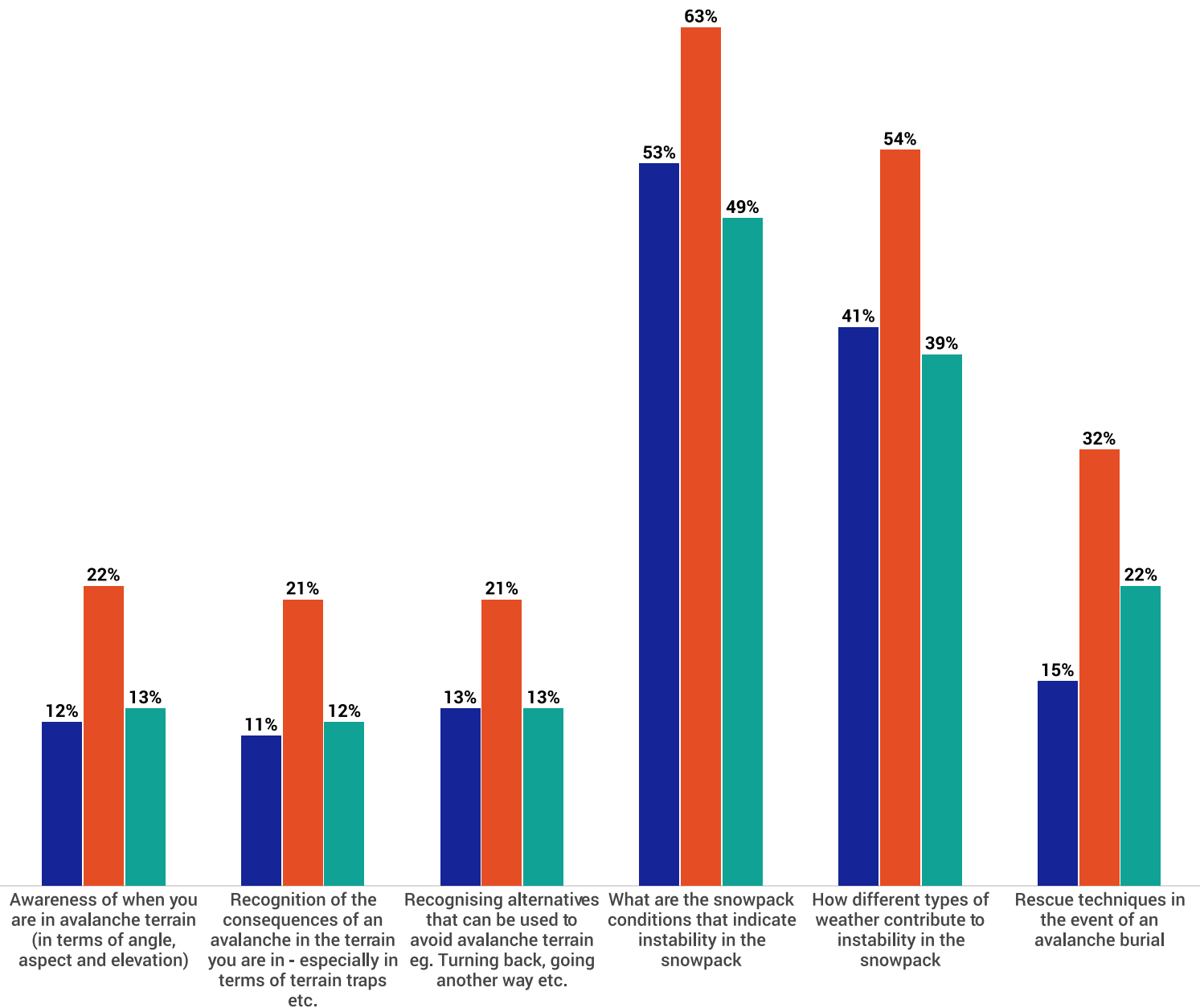




PHOTO: NZAA Public Observation, Tongariro, Aaron Tasker



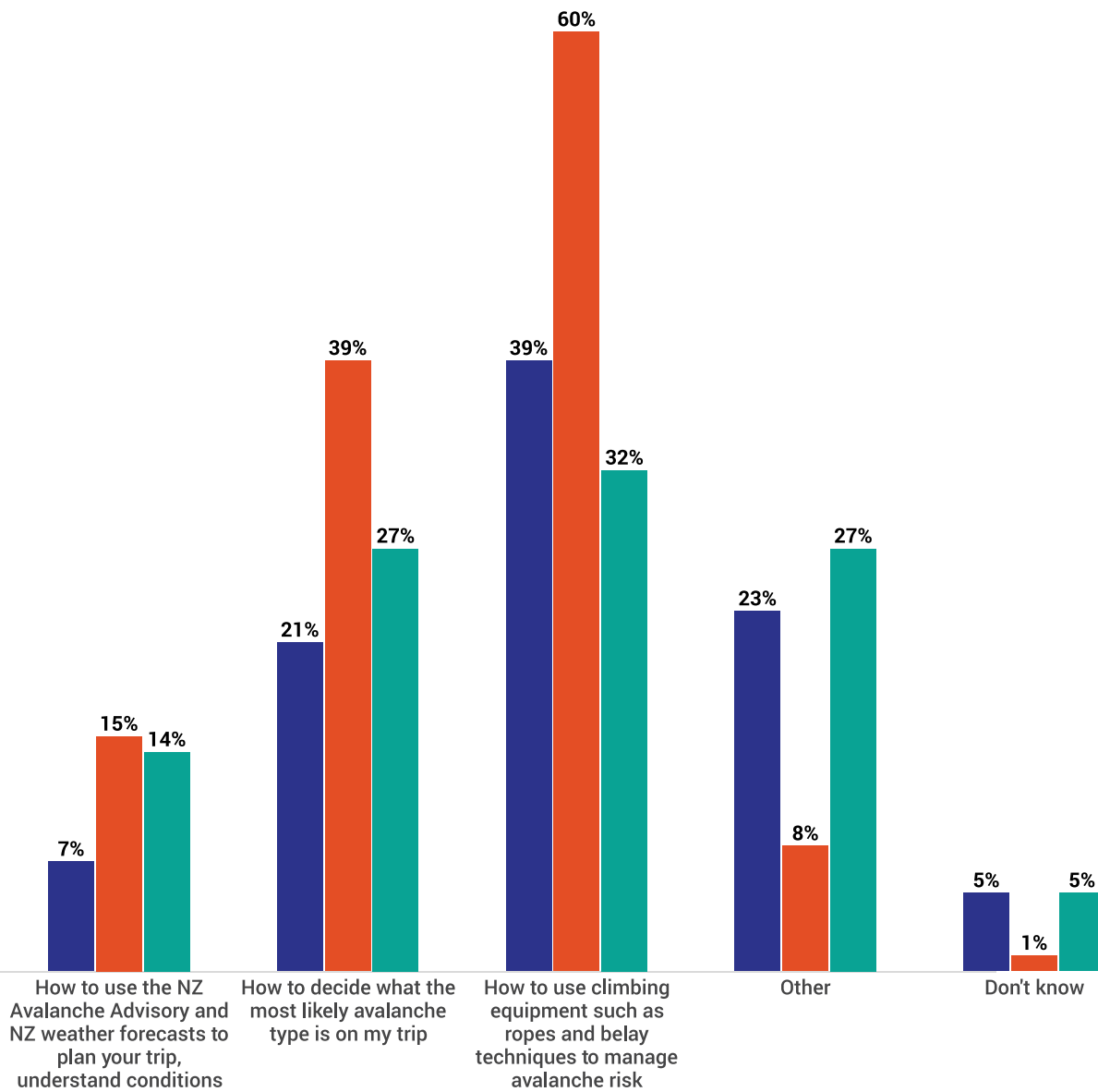
YOUNG, ACTIVE & AMBITIOUS



OCCASIONAL ADVENTURERS



SEASONED VETERANS








“Take advantage of professional training or experienced mentors for new topics where practical. Learning by trial and error can be much more expensive.”

– RESEARCH PARTICIPANT

WHAT’S THE MOST EFFECTIVE WAY TO BRIDGE THE KNOWLEDGE GAP?

Formal training was identified (**73%**) as the most useful way mountaineers had learnt about avalanches.

Additionally, the following methods were also ranked highly.

-  the NZ Avalanche Advisory (NZAA) (**63%**)
-  listening to mentors (**57%**)
-  listening to professional mountaineers (**54%**)
-  reading about avalanches (**53%**)
-  and personal experience (**50%**).

Other methods used by mountaineers to learn about avalanches, which were deemed less useful:

- » Listening to other recreational mountaineers (**38%**)
- » Social media content from official avalanche sources (**26%**)
- » Social media content from other mountaineers (**12%**)

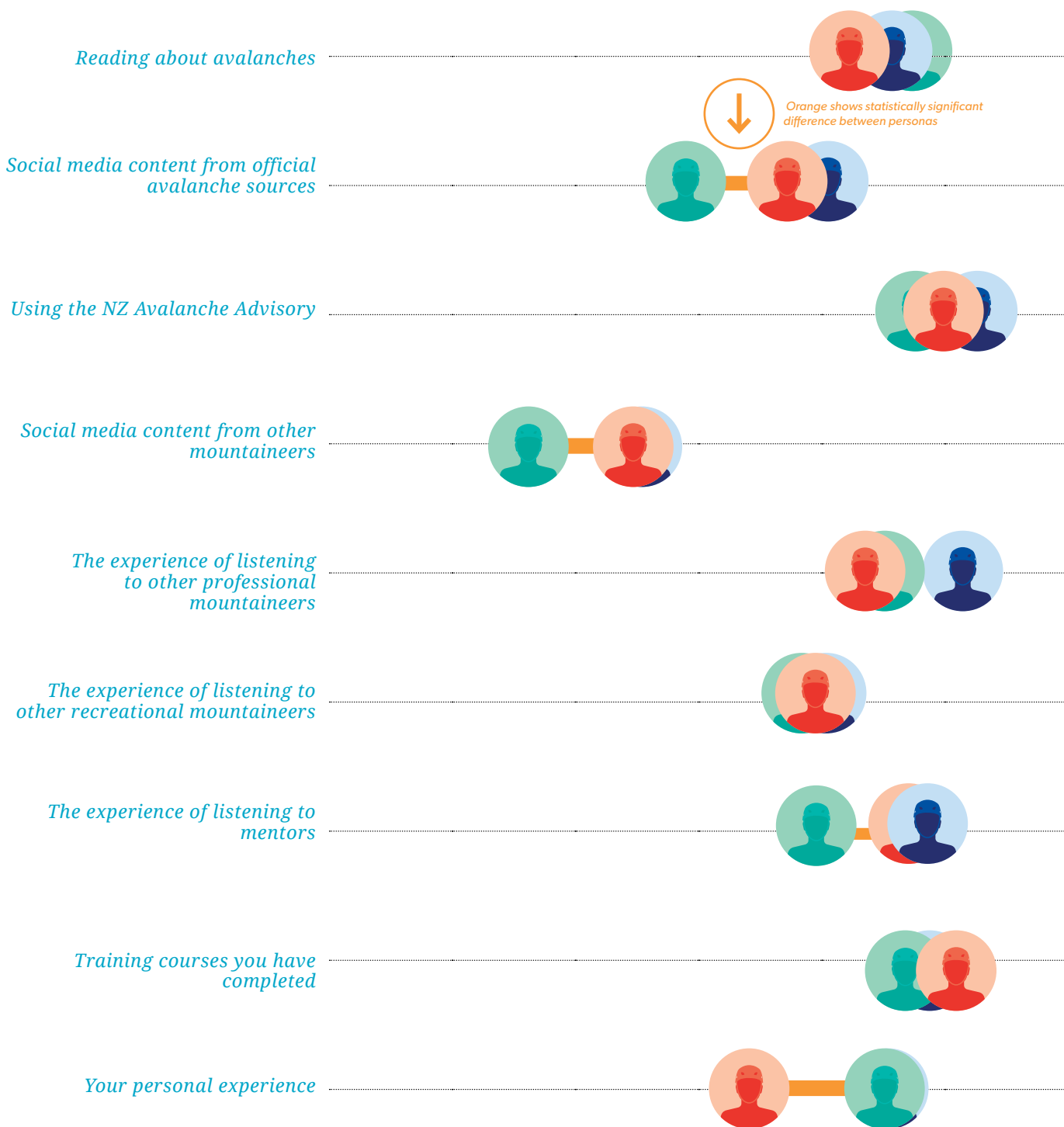
Q28. PLEASE RATE EACH OF THE FOLLOWING IN TERMS OF HOW USEFUL THEY HAVE BEEN AT INCREASING YOUR KNOWLEDGE OF AVALANCHES.



PHOTO: Ruapheu, Simon Smith

NOT USEFUL AT ALL

EXTREMELY USEFUL





HAVE MOUNTAINEERS COMPLETED AVALANCHE TRAINING?

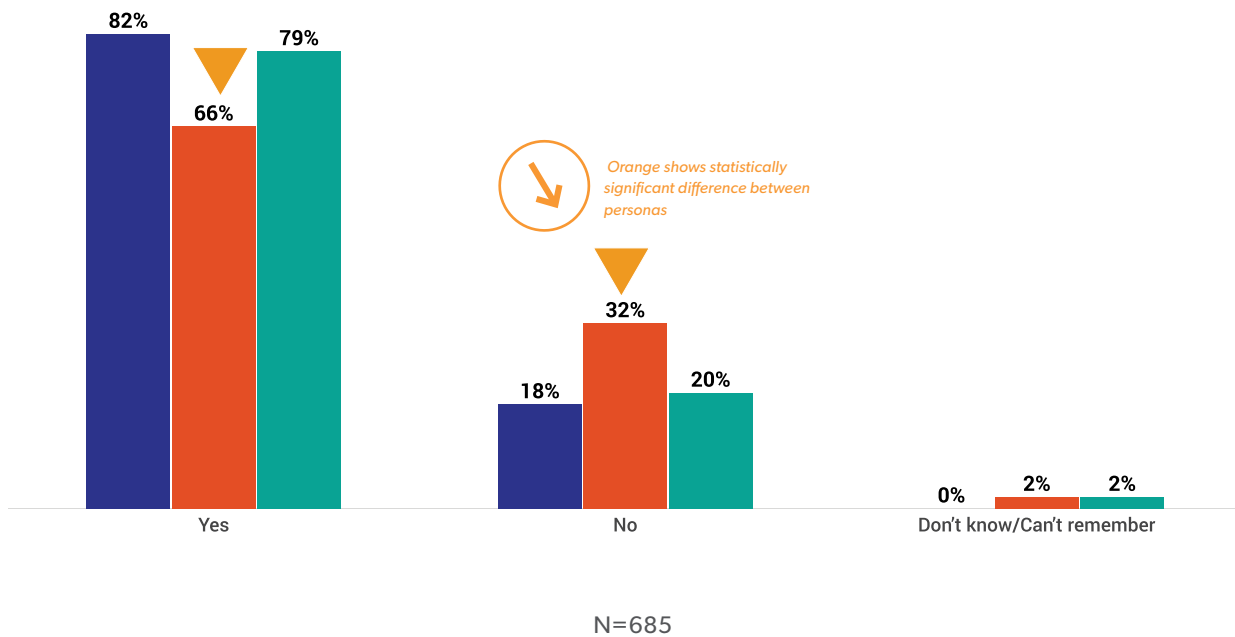
Three-quarters confirmed that they had completed an avalanche course (**75%**), most frequently the courses identified were:

- » 1–2-day avalanche awareness course (**55%**) (now known as Avalanche Skills Course 1)
- » and/or a mountaineering skills course, that included an avalanche section (**54%**).

People less frequently had participated in:

- » A 4–5-day backcountry avalanche course (**20%**) (now known as Avalanche Skills Course 2)
- » Skiing/ski touring course, that included a section on avalanches (**23%**)
- » **37%** indicated they had done at least some of their training overseas.

While overall 75% had completed avalanche training, this varied significantly by persona. Specifically, occasional adventurers are less likely to have done a course.



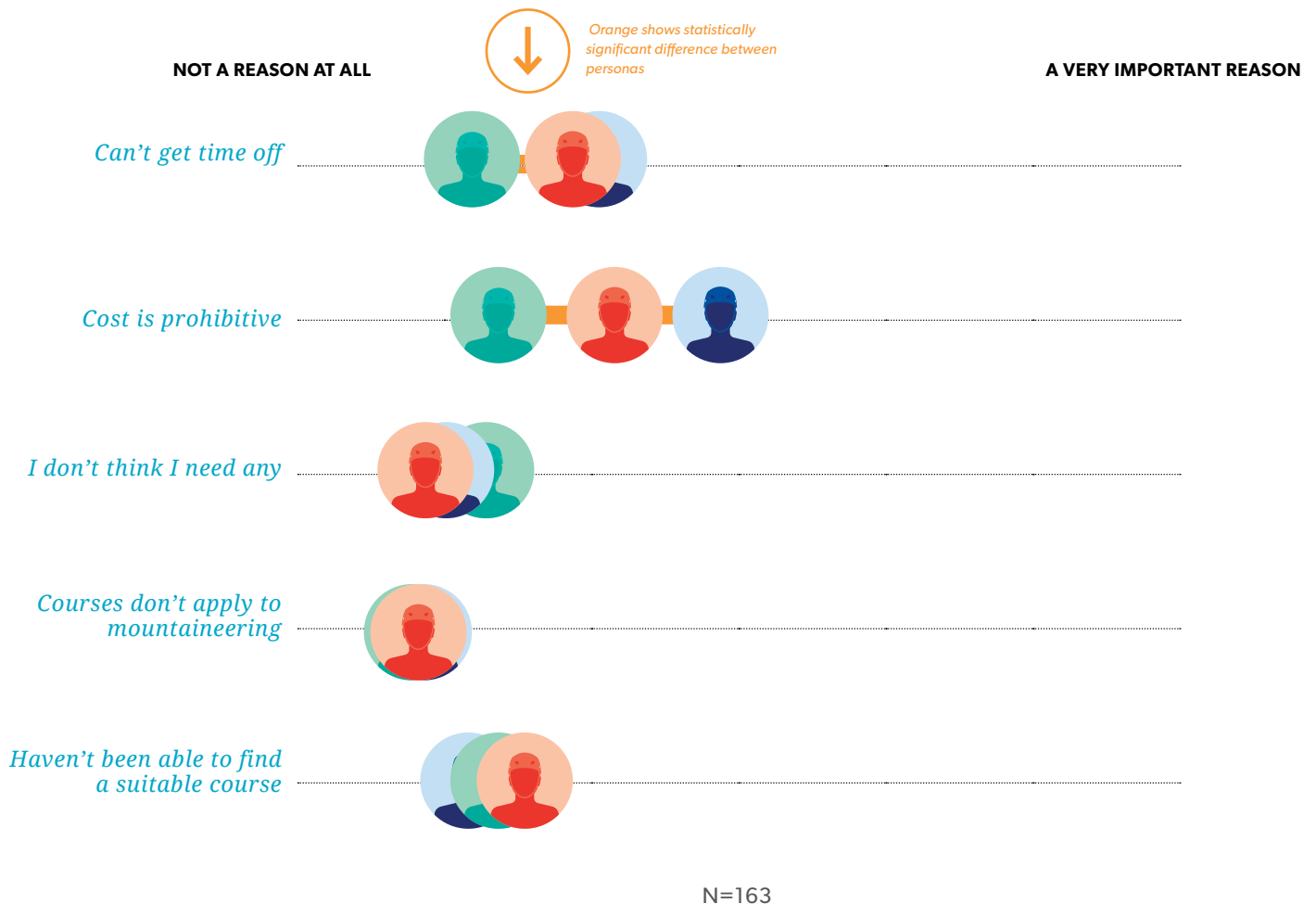
Q30. HAVE YOU COMPLETED ANY FORMAL AVALANCHE TRAINING?

WHY HAVE SOME MOUNTAINEERS NOT COMPLETED AVALANCHE TRAINING?

Of the **24%** of respondents who stated they had not completed an avalanche course, the main reasons were cost (**24%**) and the ability to take time off work (**16%**).

It was usually NOT due to:

- » Not being able to find a suitable course (**63%** 'not a reason at all')
- » Thinking courses available don't apply to mountaineering (**90%** 'not a reason at all')
- » Thinking they don't need formal training (**79%** 'not a reason at all')



Q33. PLEASE RATE EACH OF THE FOLLOWING AS A REASON WHY YOU HAVE NOT COMPLETED ANY FORMAL AVALANCHE TRAINING.

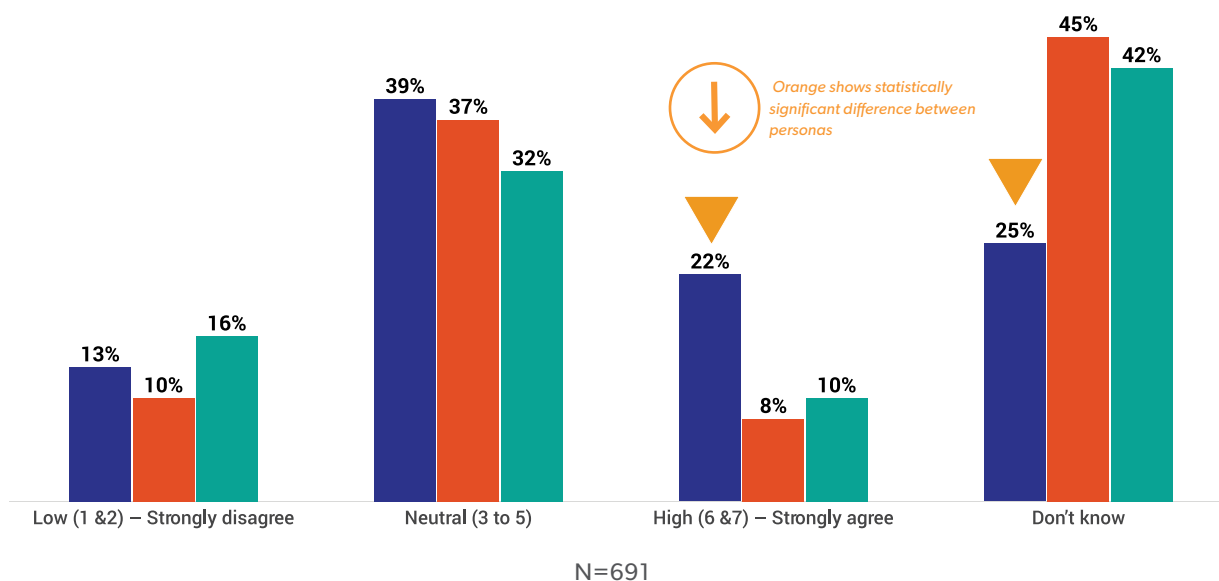


DO RECREATIONAL AVALANCHE COURSES CATER SUITABLY FOR MOUNTAINEERS?

There is a suggestion that the current offering of recreational avalanche education courses available in New Zealand does not cater well for mountaineers. In order to understand if this position is widely held, we asked respondents to agree or disagree with the statement.

Overall, the largest response said they 'don't know' (40%). Following closely behind, overall 35% answered neutrally, with 13% disagreeing and 12% agreeing.

Following a similar pattern to the early questions, the results varied widely between the three personas.



Q40. *THERE IS A SUGGESTION THAT THE CURRENT OFFERING OF RECREATIONAL AVALANCHE EDUCATION COURSES AVAILABLE IN NEW ZEALAND DOES NOT CATER WELL FOR MOUNTAINEERS. HOW MUCH DO YOU AGREE OR DISAGREE WITH THIS SENTIMENT?*

HOW COULD AVALANCHE COURSES BETTER MEET MOUNTAINEERS NEEDS?

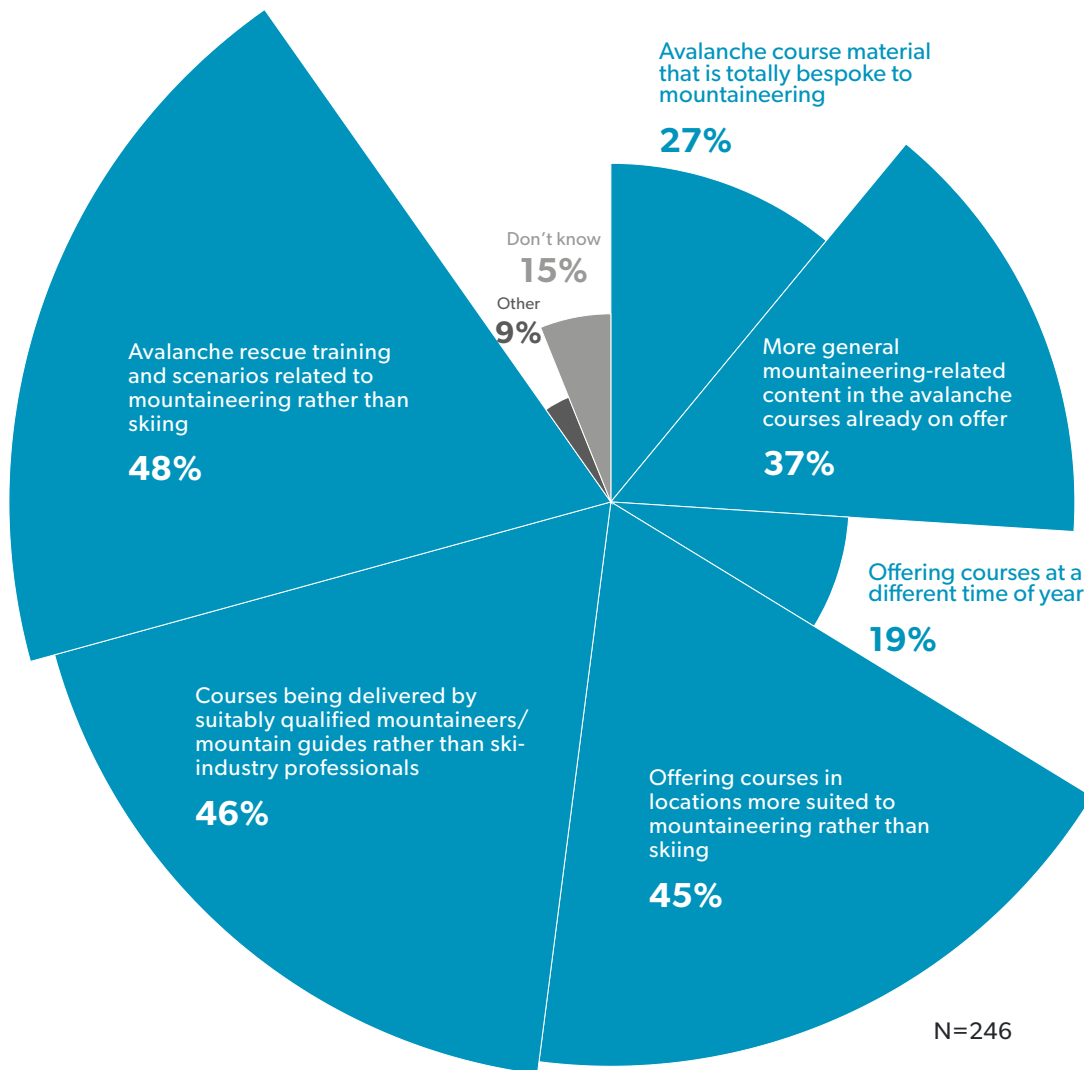
Question 41 was going to be asked of respondents who agreed with the position (that the current offering of recreational avalanche education courses available in New Zealand do not cater well for mountaineers), this was those who answered 6 or 7 in question 40.

However, unfortunately a survey routing error meant it was inadvertently asked of the 36% of respondents (n=246) who answered the opposite, being those who disagreed with the statement.

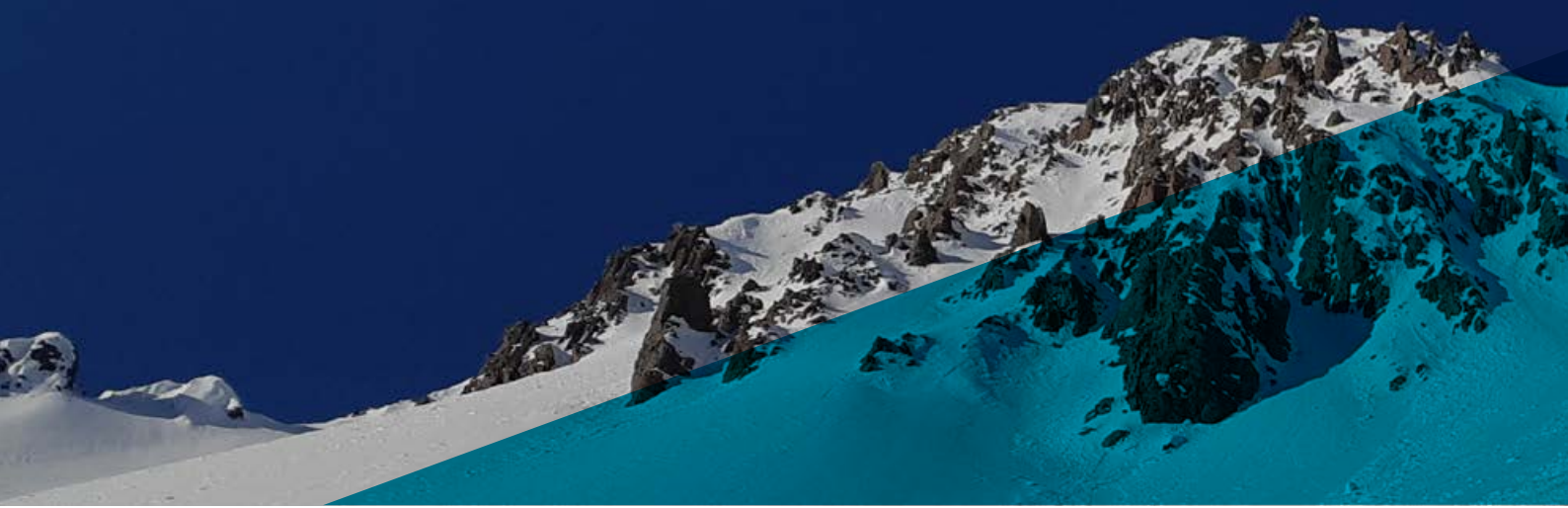
Considering the feedback of respondents involved in the qualitative in-depth interviews (prior to the survey), it is our opinion that the suggestions these n=246 respondents have provided are similar in theme to what would have been suggested by those who feel the current courses are not applicable to mountaineering. Consequently, we have reported the findings on the next page.

The main suggestions given were that courses needed to be:

- » Directly related to mountaineering rather than skiing **(48%)**
- » Delivered by mountaineering guides rather than ski-industry professionals **(46%)**
- » Delivered in appropriate mountaineering terrain rather than skiing environments **(45%)**



Q41. IN WHICH OF THE FOLLOWING WAYS COULD AVALANCHE EDUCATION COURSES BETTER CATER FOR MOUNTAINEERS?

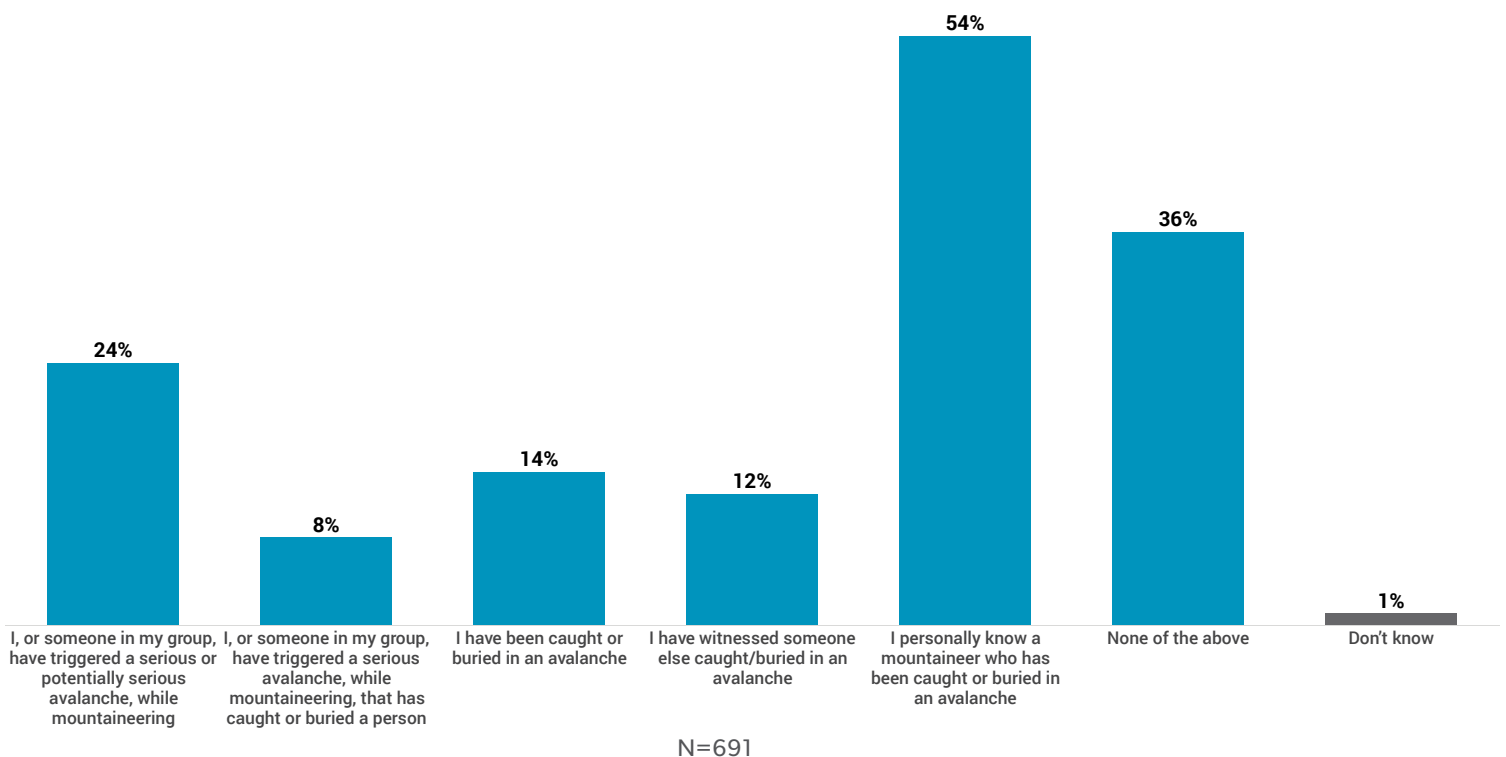


HOW HAVE MOUNTAINEERS BEEN INVOLVED WITH AVALANCHES?

More than half (**54%**) stated they personally knew someone who was caught in an avalanche, while **24%** said they or someone in their group had triggered a serious avalanche.

Just over one-third (**36%**) said they had no direct or indirect experience of avalanche involvement.

How do these results compare with your expectations? Among our reference panel and the NZAA forecasters, some thought there were less involvements than expected, and some thought there were far more!



Q29. WHICH OF THE FOLLOWING, IF ANY, APPLY TO YOU?

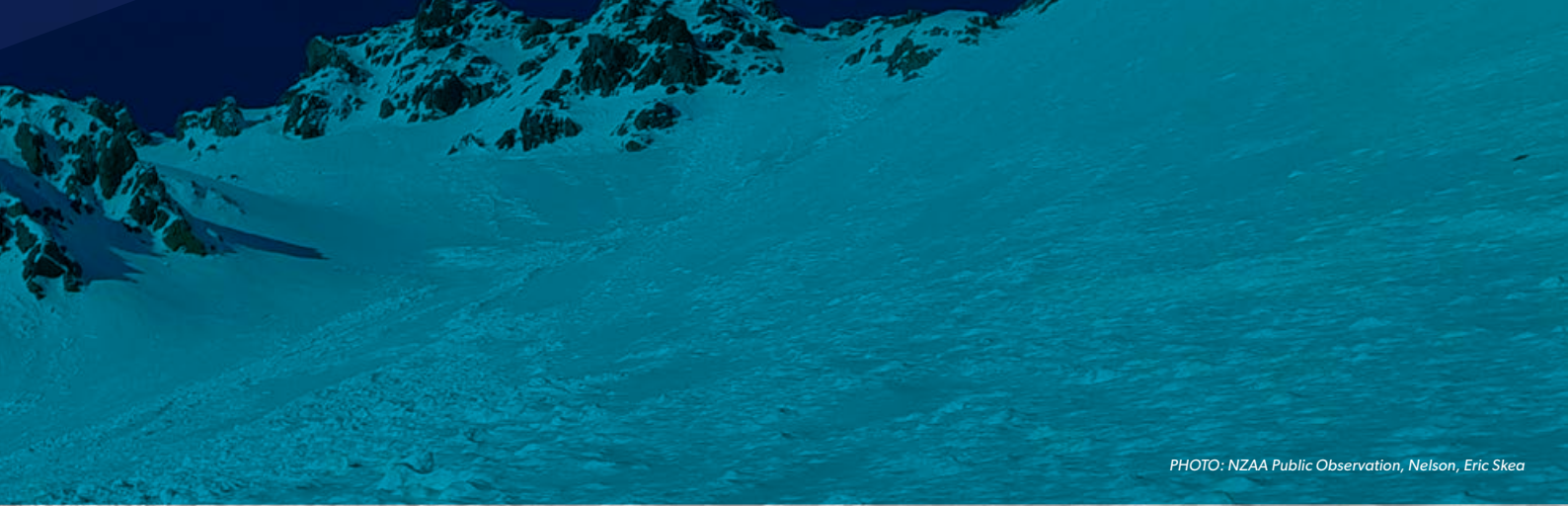
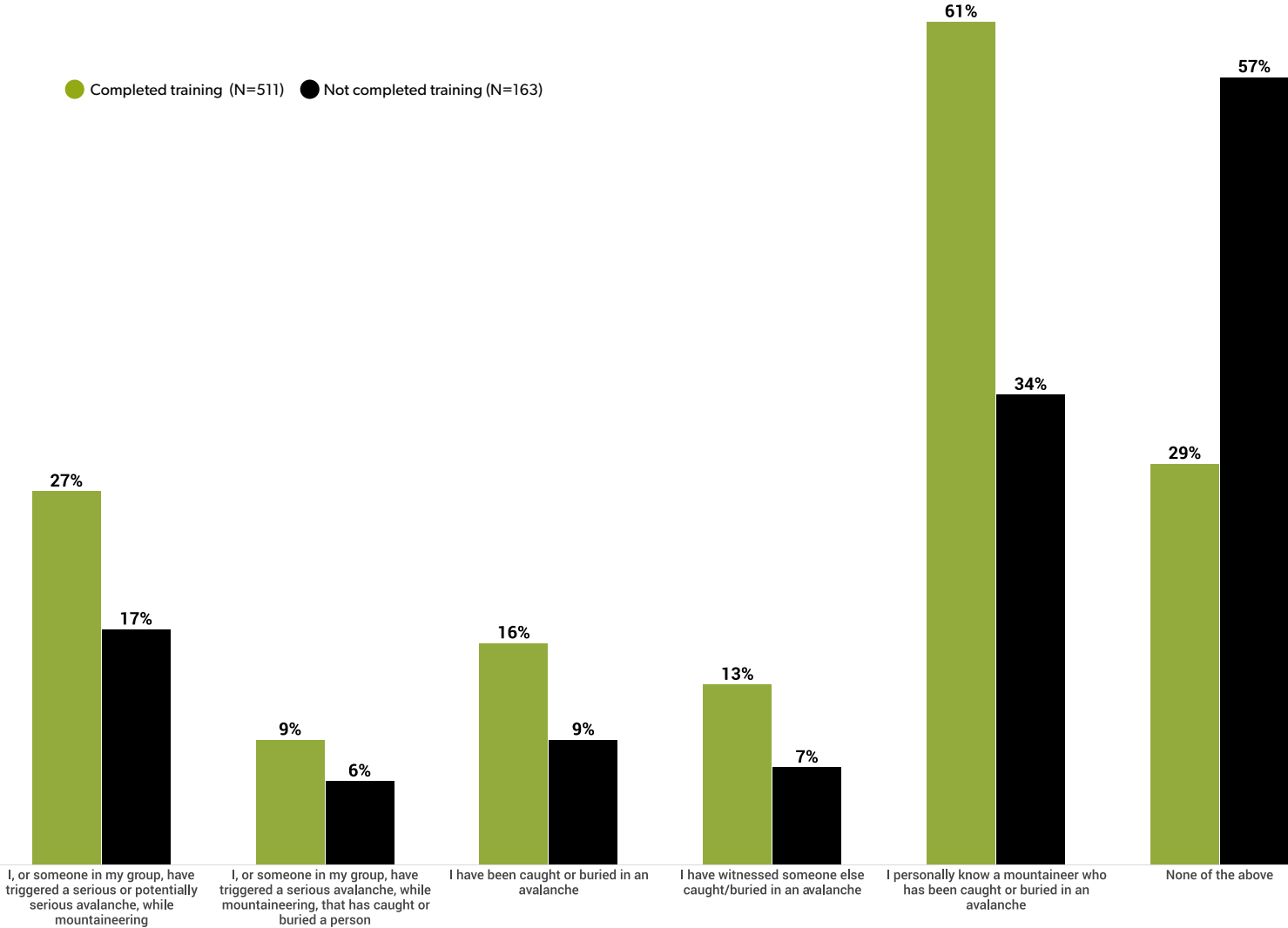


PHOTO: NZAA Public Observation, Nelson, Eric Skea

IS THERE A RELATIONSHIP BETWEEN AVALANCHE TRAINING AND INVOLVEMENT?

When we separate the responses based on those who have completed prior avalanche training and those who have not, we see some differences in avalanche involvement.

Most notably, **61%** of those who have completed avalanche training personally know a mountaineer who has been caught or buried, compared to only 34% of those who have not completed training.



N=685



HOW DOES AVALANCHE INVOLVEMENT VARY BY PERSONA?

In general the results for each group do match up well with each personas' 'years active'. '**Occasional Adventurers**' have lowest level of involvement, but they have been climbing the least often and least amount of years. Conversely, '**Seasoned Veterans**' generally have the most involvement, but they have the most 'years active'. '**Young, Active and Ambitious**' somewhere in the middle, perhaps as they haven't had too many 'years active'. However, they do they do climb the most often and are thus potentially more 'in the know' about any incidents that do occur.



**YOUNG, ACTIVE
& AMBITIOUS**



**OCCASIONAL
ADVENTURERS**



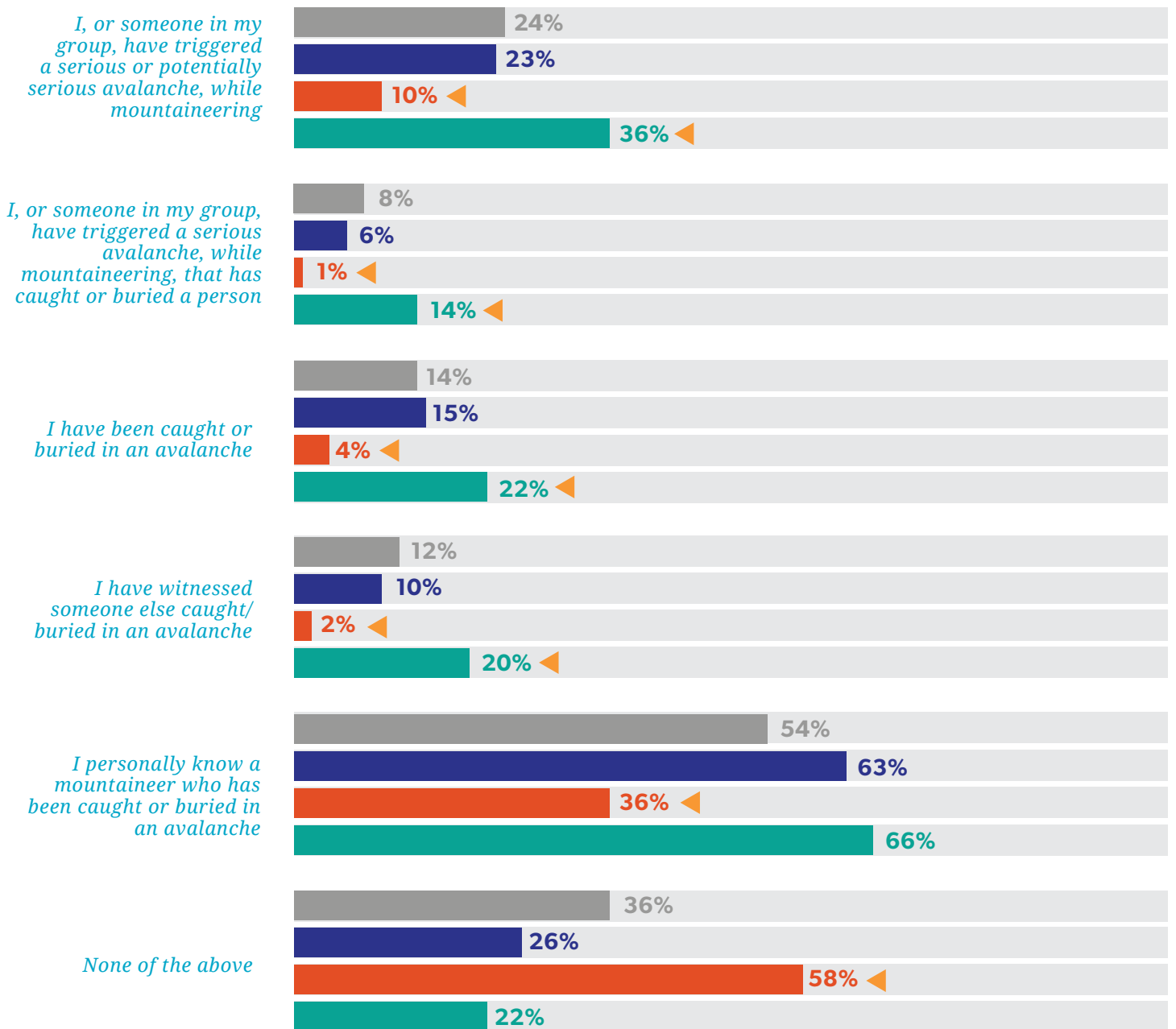
**SEASONED
VETERANS**



**ALL
RESPONDENTS**



Orange shows statistically significant difference between persons



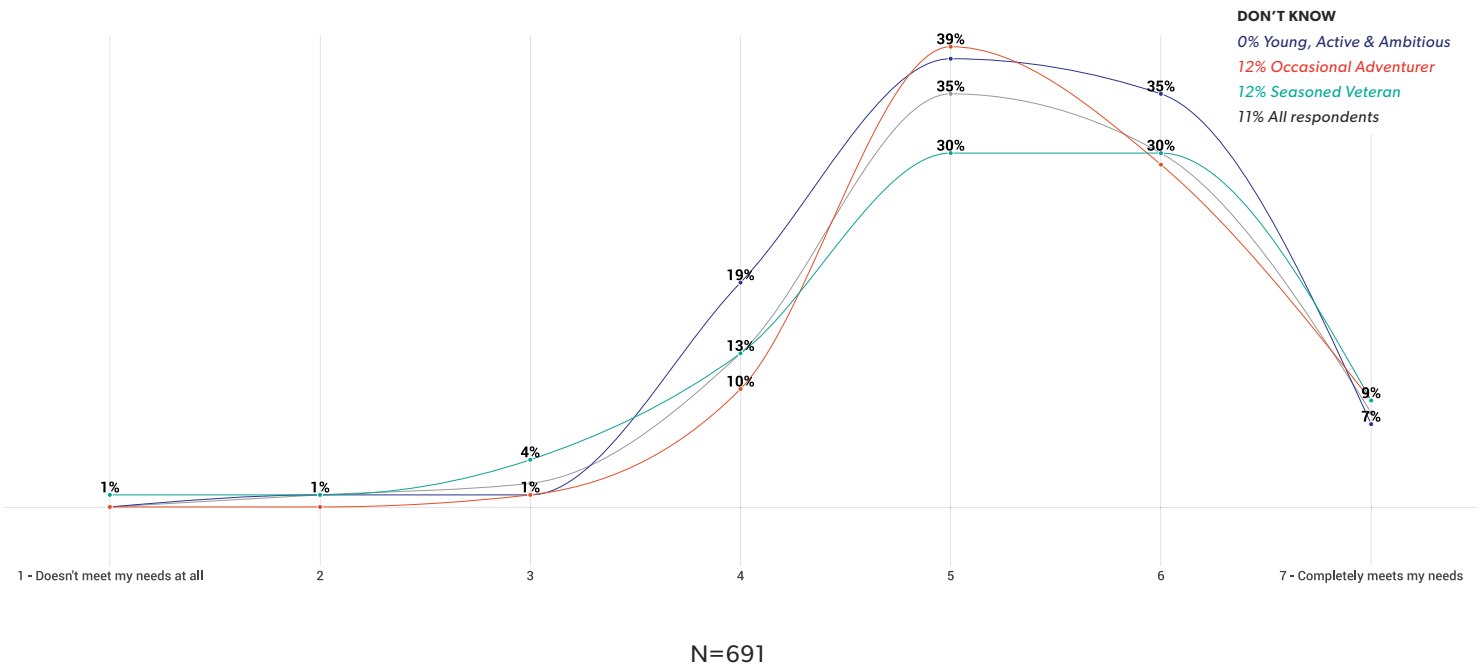
N=691

Q29. WHICH OF THE FOLLOWING, IF ANY, APPLY TO YOU?



DOES THE NZ AVALANCHE ADVISORY (NZAA) MEET THE NEEDS OF MOUNTAINEERS?

As you can see in the graph below, the three personas had largely similar opinions. Overall, most gave a neutral to positive response, with only 3% saying that it 'doesn't meet my needs at all'.

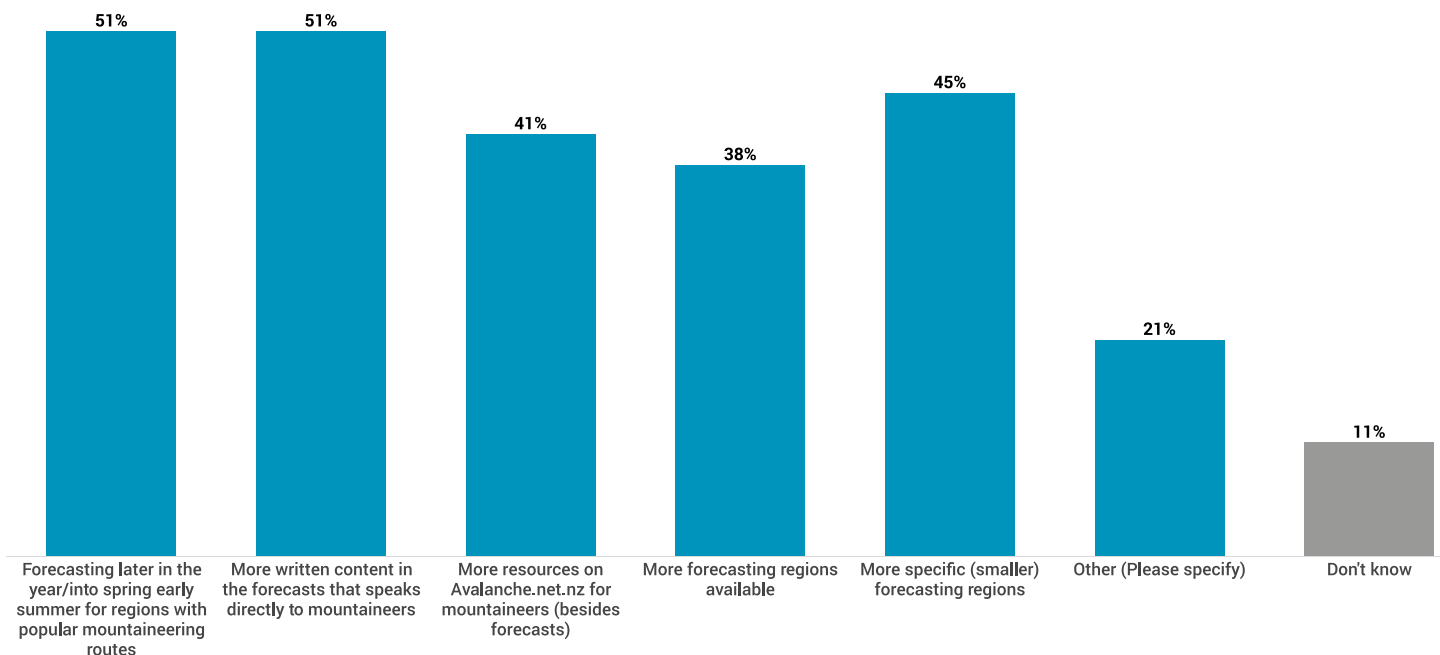


Q42. AS A MOUNTAINEER, TO WHAT EXTENT IN GENERAL WOULD YOU SAY THE NZ AVALANCHE ADVISORY MEETS YOUR NEEDS WHEN PLANNING AND PREPARING FOR A TRIP?

HOW CAN THE NZAA BE IMPROVED FOR MOUNTAINEERS?

When those who felt the NZAA didn't completely meet their needs (which were the 16% who answered 1 to 4 in question 42) were asked for their suggestions in terms of how it could be improved, most frequently they recommended:

- » **Forecasting later in the year** into spring/early summer for regions with popular mountaineering routes **(51%)**.
- » More **written content** in the forecasts that speaks directly to mountaineers **(51%)**.
- » More specific (smaller) **forecasting regions** **(45%)**.



N=114

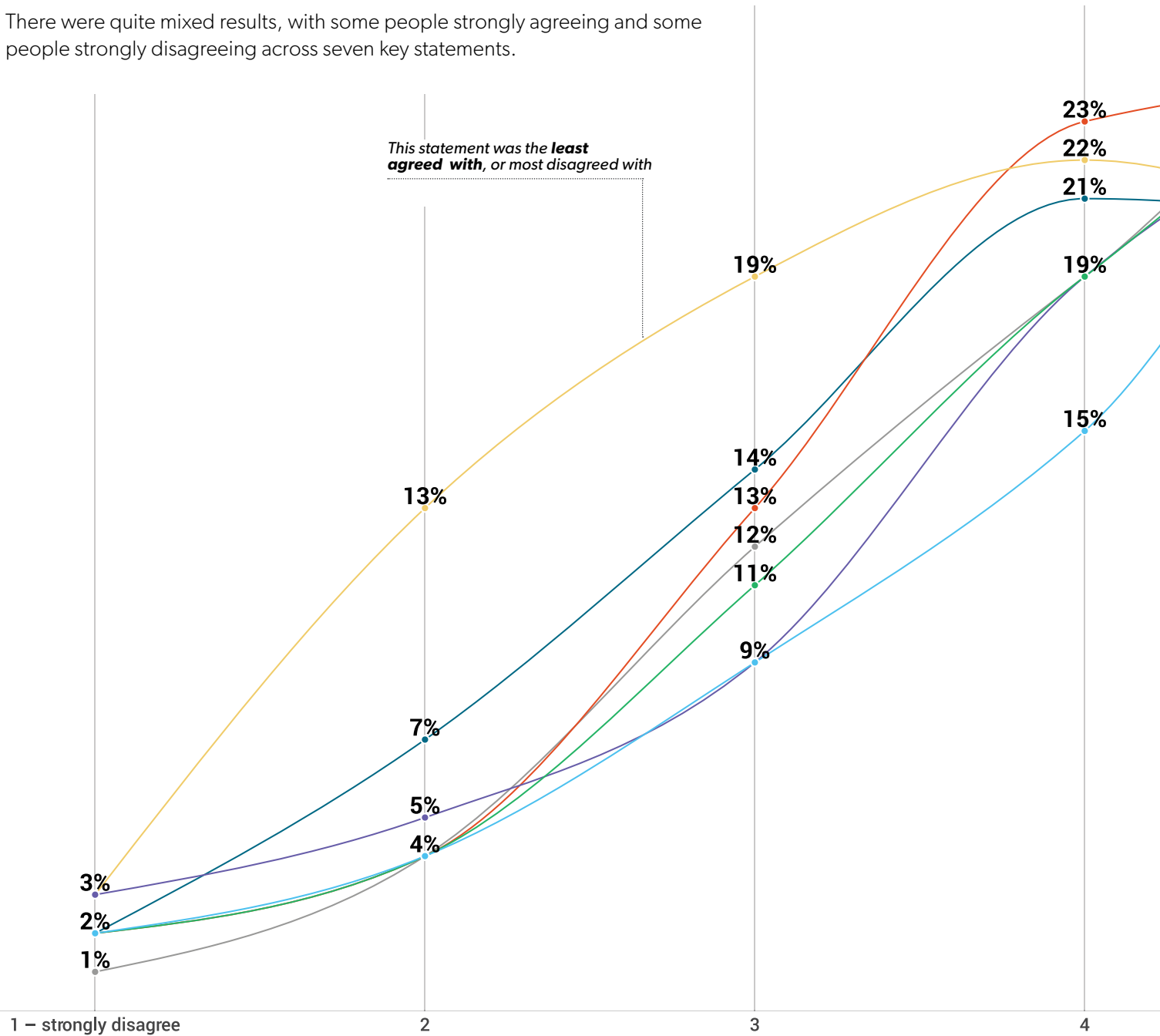
See 'Actions' section for more details

Q43. IN WHICH OF THE FOLLOWING WAYS COULD THE NZAA BETTER MEET YOUR NEEDS?



WHEN REFLECTING ON THEIR FEELINGS ABOUT THE MOUNTAINEERING COMMUNITY...

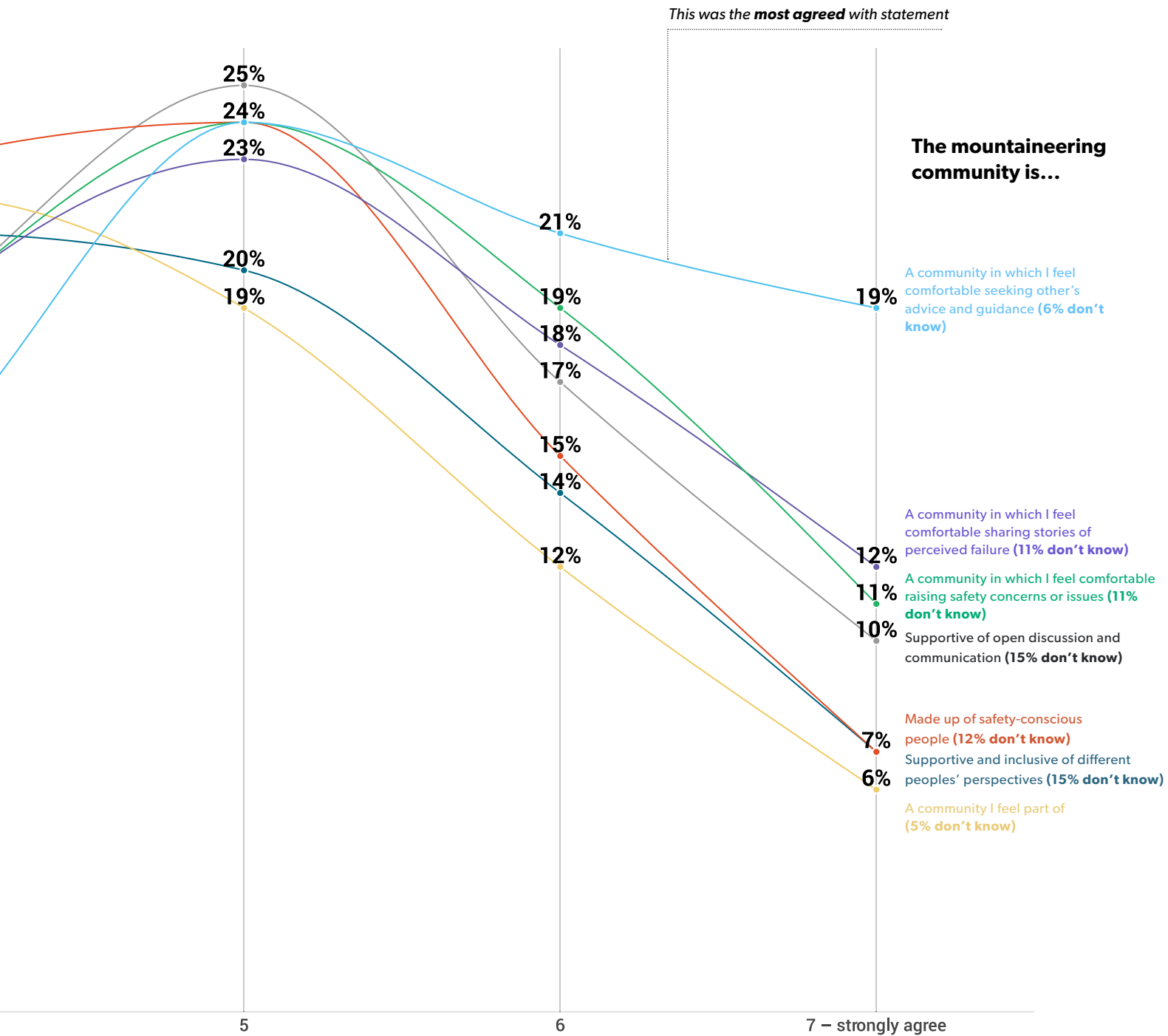
There were quite mixed results, with some people strongly agreeing and some people strongly disagreeing across seven key statements.



Q17. HOW MUCH DO YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS ABOUT THE MOUNTAINEERING COMMUNITY IN NEW ZEALAND?



PHOTO: NZAA Public Observation, Mt St Mary, Michael Zborovjan



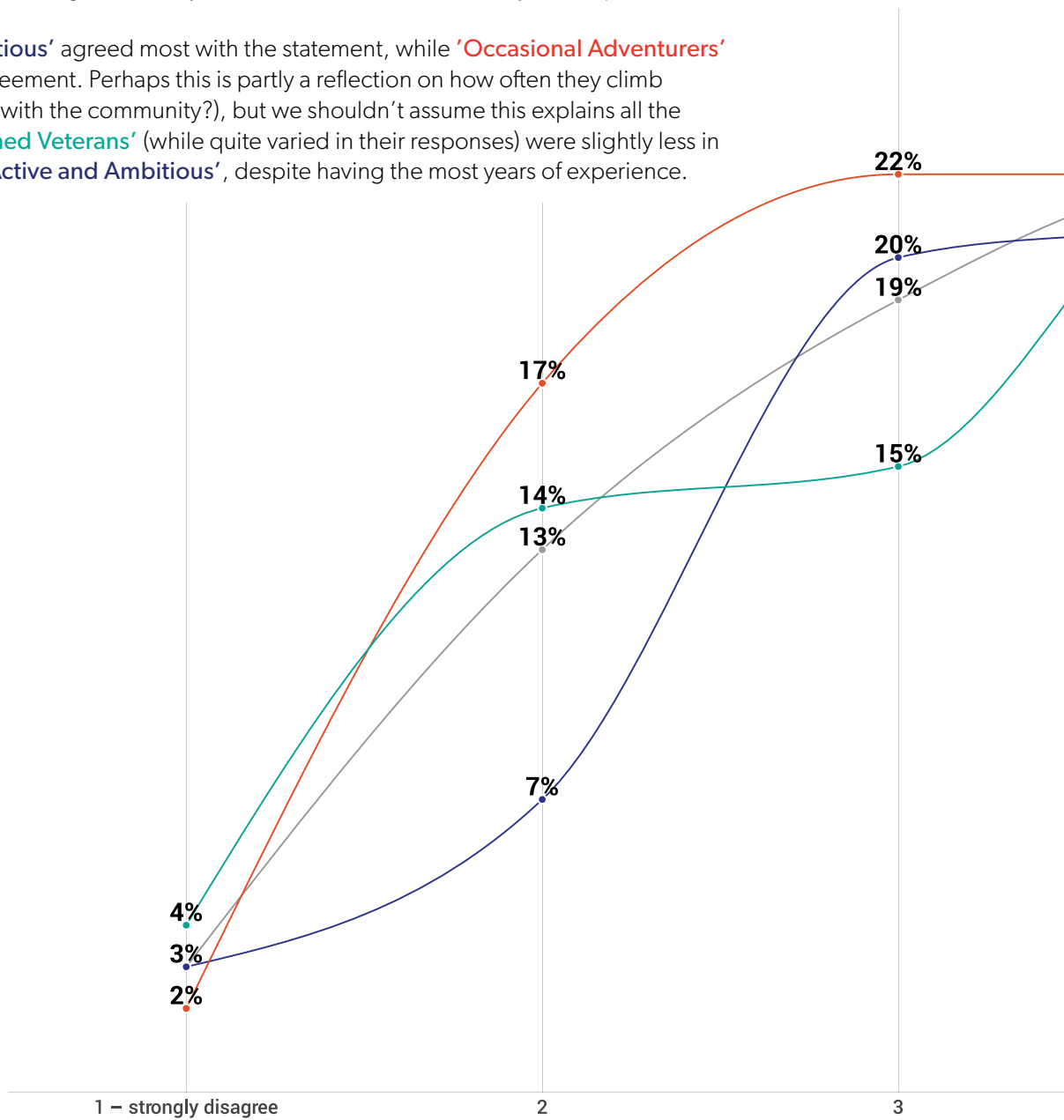
N=691



SOME PERSONAS FEEL MORE 'A PART OF' THE MOUNTAINEERING COMMUNITY THAN OTHERS

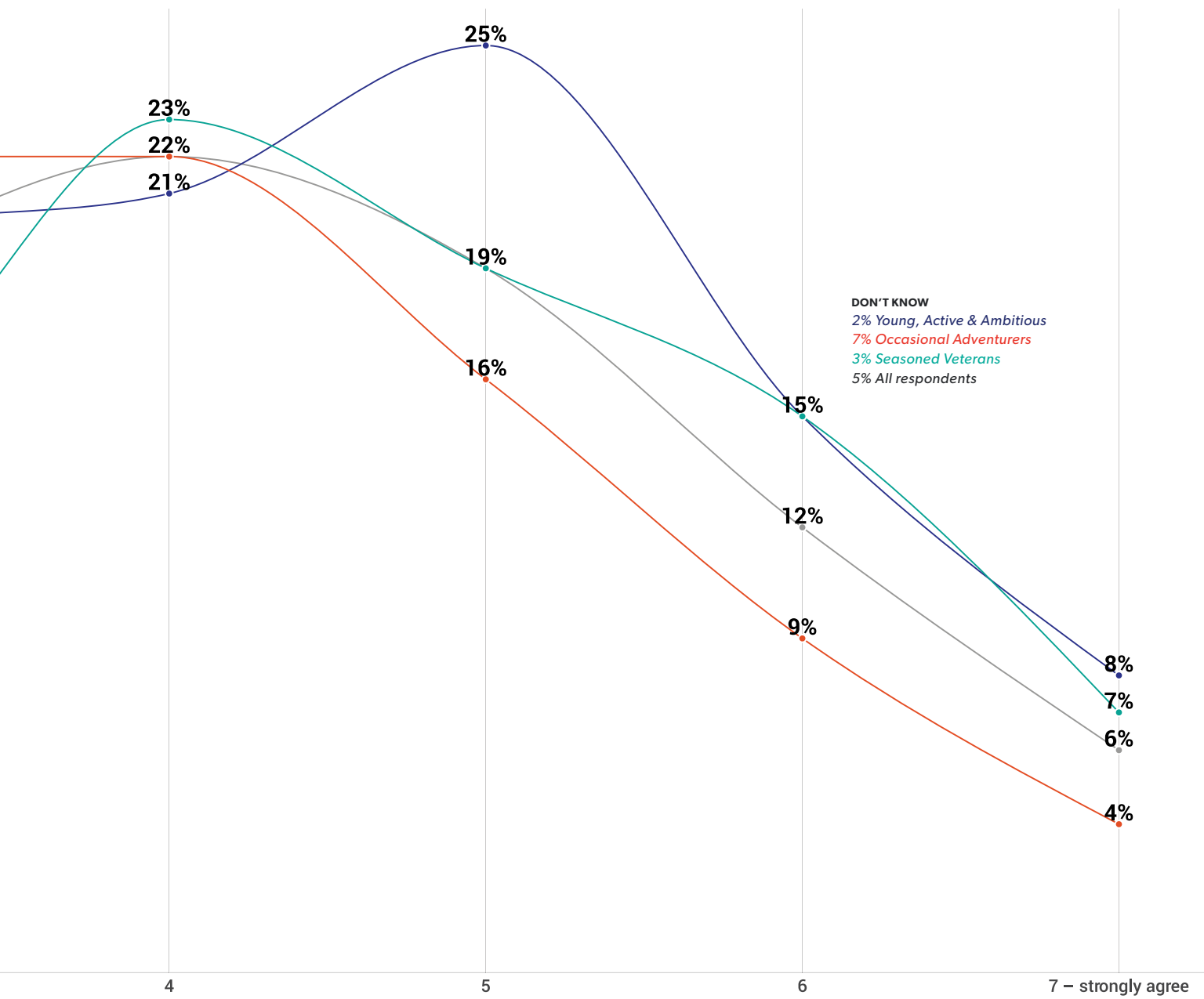
In general, our three personas share very similar feelings on the community based questions shown in the last figure. The one exception is when they were asked about their agreement with the statement that the mountaineering community in New Zealand is 'a community I feel a part of.'

'Young, Active and Ambitious' agreed most with the statement, while 'Occasional Adventurers' are leaning towards disagreement. Perhaps this is partly a reflection on how often they climb (less active, less in contact with the community?), but we shouldn't assume this explains all the difference. In fact, 'Seasoned Veterans' (while quite varied in their responses) were slightly less in agreement than 'Young, Active and Ambitious', despite having the most years of experience.



Q17. HOW MUCH DO YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS ABOUT THE MOUNTAINEERING COMMUNITY IN NEW ZEALAND? 'A COMMUNITY I FEEL A PART OF'.

PHOTO: Crossing Tasman Glacier from Tasman Saddle to Kelman Hut, Taichiro Naka



DON'T KNOW
2% Young, Active & Ambitious
7% Occasional Adventurers
3% Seasoned Veterans
5% All respondents

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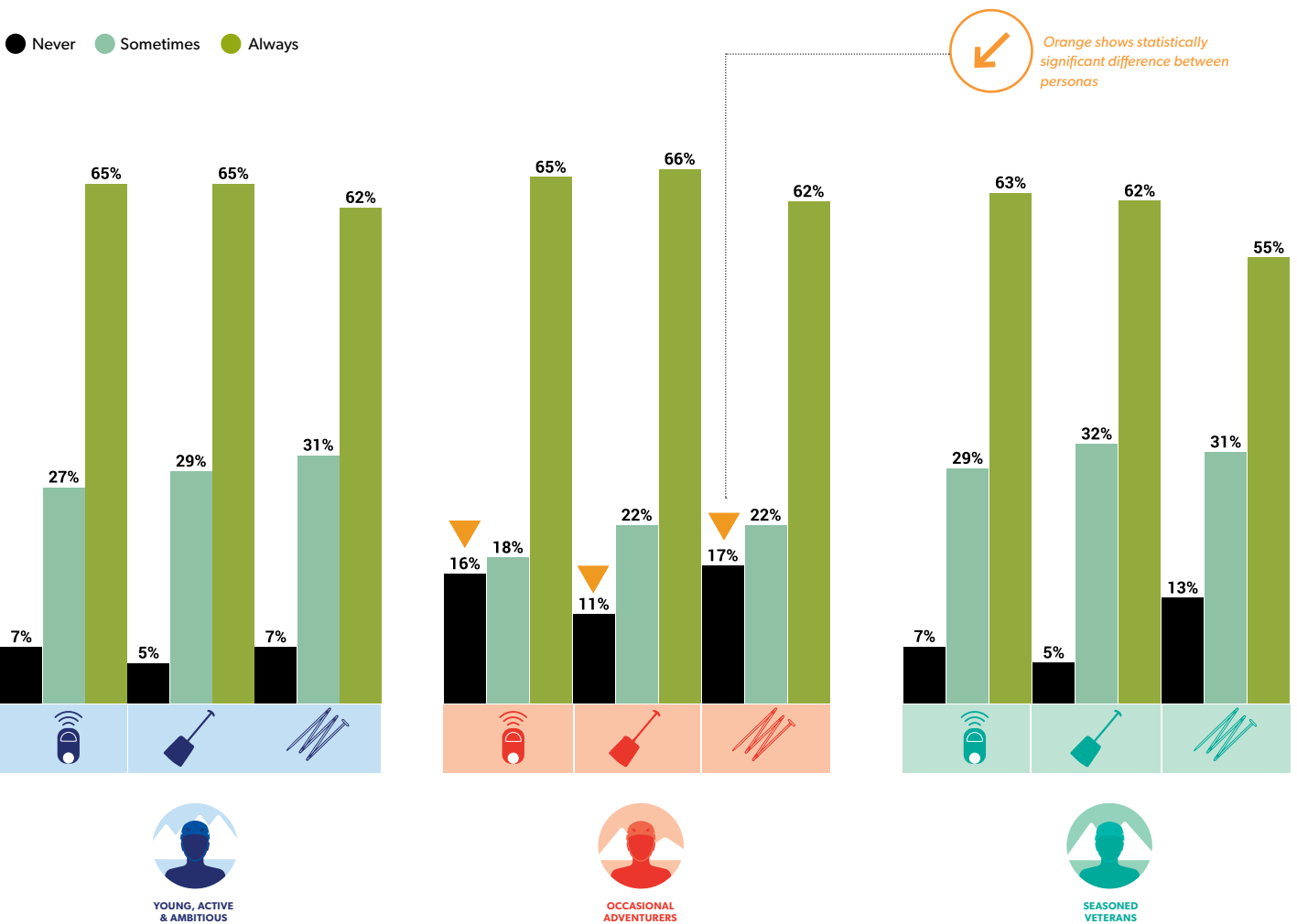


HOW FREQUENTLY IS AVALANCHE RESCUE EQUIPMENT CARRIED?

Always carrying avalanche rescue equipment during winter and spring months is not a given, as the results show.

While conditions and route choice may mean that sometimes leaving these items at home makes sense, some survey participants have indicated they never carry these essential items. As an example, **16%** of **'Occasional Adventurers'** state they **never** carry a transceiver. Is this because occasional adventurers don't feel they can justify the expense given it is an occasional pursuit? Or, is it a lack of knowledge around the equipment's importance?

Further to this, between **2%** **'Young, Active and Ambitious'** and **5%** **'Occasional Adventurers'**, state they never discuss carrying these items with their climbing partner/s before departing on a trip. Across all three personas, **71%-77%** stated they always did.



N=691

Q46. THINKING ABOUT THE WINTER AND SPRING AVALANCHE MONTHS. WHEN YOU'RE MOUNTAINEERING DURING THESE MONTHS, WHICH OF THE FOLLOWING EQUIPMENT DO YOU CARRY WITH YOU?

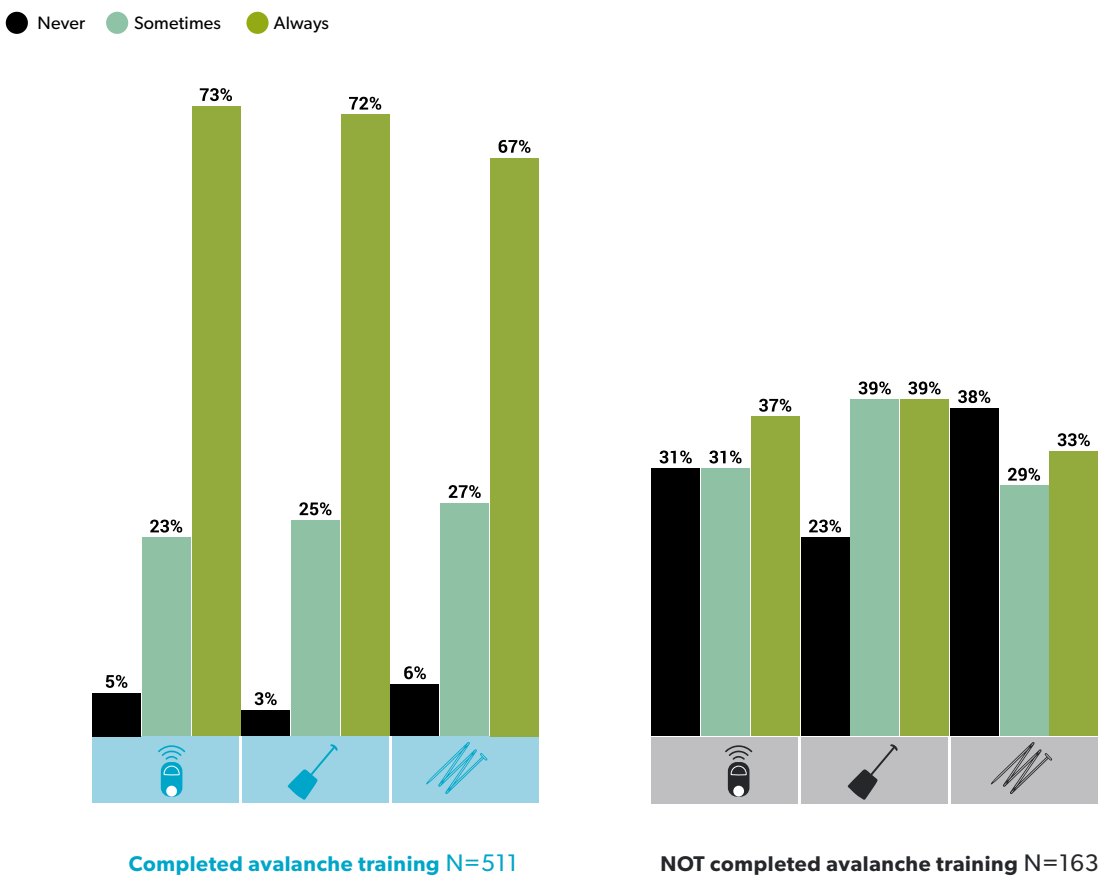
DOES PRIOR AVALANCHE TRAINING CHANGE THIS?

If we look at the results based on those who have, and those who have not, completed formal avalanche training, things change significantly.

The difference between each group (completed training vs not completed) for the 'never' and 'always' options is statistically significant.

Clearly, those who have completed formal avalanche training are far more likely to always carry avalanche rescue equipment.

In fact, they are 'always' or 'sometimes' carrying these items between 94% - 97% of the time.





SUMMARY, ACTIONS & ACKNOWLEDGEMENTS

PHOTO: Spaghetti Junction, Gavin Lang





SUMMARISED KEY FINDINGS

The details below are a summary of what has stood out to MSC following our initial primary analysis. We hope these points can serve to spark conversation amongst the NZ mountaineering community.

As you read this commentary, please keep in mind the survey bias and limitations of this research. The findings only reflect the sample surveyed, and while we believe it is a sufficient sample size, it is impossible to confirm if it is representative of all mountaineers. It is also likely that mountaineers who are safety conscious and interested in avalanche risk management are more likely to have completed the survey.

1. The analysis of our survey indicates that the NZ mountaineering community is comprised of safety-conscious people who want to enjoy the mountains, and for the most part place an emphasis on enjoyment and safety over challenging themselves and taking risks. This is supported by both their approach and philosophy towards mountaineering and their motivations.
2. Based on our sample the NZ mountaineering community is comprised of 'planners' who are particularly conscious of the importance of the weather and snowpack conditions and how they might impact their plans. Furthermore, most respondents were very open to adjusting their plans, or waiting if the weather wasn't suitable. This indicates that while mountaineers plan well, they also adapt their plans when they feel it's necessary. And while out in the hills, the vast majority indicated they are continuously monitoring conditions.
3. In general, most respondents appear to view themselves as quite safety conscious, and this was also reflected in their approaches and philosophies. However, the results to some of the community-based questions indicate that respondents have very mixed feelings on the safety consciousness of the wider mountaineering community. This creates a contradiction because as individuals if we all think we are 'safety conscious', but we also think 'the community itself could be more safety conscious', both cannot be true at the same time. However, these findings are likely to be influenced by sampling bias, as we expect people who are more safety conscious to be more likely to have completed the survey compared to those who are less safety conscious.
4. There were very mixed feelings about the culture of the NZ mountaineering community at large. Almost all questions relating to the community had a bulk of responses in the 'neutral' area. This suggests that while the community is not dysfunctional or 'broken', there is certainly opportunity to improve community togetherness. In particular, 'a community I feel part of' stood out as an area with differing opinions between personas, and as an area that could be vastly improved.

PHOTO: NZAA Public Observation, Wānaka, Jarod Aston

5. While many respondents always reflect on a trip to themselves, a strikingly low proportion do this self-reflection or debriefing as a group (or with their climbing partner), and even less share their experiences with other members of the mountaineering community. Many respondents also indicated that they don't always assess their preparations, planning, or even decisions made during the trip, afterwards.
6. Overall, while respondents have indicated that the NZAA generally meets the needs of most mountaineers, the findings highlight several areas where there is an opportunity for mountaineering specific improvements to be made.
7. A small group of respondents indicated they never use the NZ Avalanche Advisory (NZAA). While there could be reasonable explanations for this (e.g., no avalanche forecasts for the area they go to, or they only go mountaineering in summer on snow free routes), this indicates further reinforcement of the importance of checking the NZAA is required. Interestingly, Occasional Adventurers and Seasoned Veterans were the only two personas where respondents said they never check the NZAA.
8. Worryingly, a significant number of respondents indicated that they never carry avalanche rescue equipment with them during the winter and spring months. While in certain situations and conditions the choice to not carry this equipment may be totally acceptable, to 'never' carry it (in all situations) is deeply concerning. These findings suggest that those respondents are not even considering carry the items (all or one of; transceiver, shovel and probe). Ideally, in all situations, the preferred response would have been that everyone is 'always' or 'sometimes' carrying these items, thus indicating they are actively considering the need and value of them. Perhaps unsurprisingly the persona of Occasional Adventurers included a statistically significant higher proportion of respondents who 'never' carry the equipment compared to the other two personas.
9. Based on this survey, there does appear to be a knowledge gap in the mountaineering community regarding avalanches. In particular, the subjects around 'snowpack conditions that indicate instability in the snowpack' and 'how the weather contributes to snowpack instability' were the most evident. This is concerning given these topics are amongst those that form the basis of avalanche education.
10. There is a stark difference in attitudes and behavior between respondents with and without formal avalanche training. Those with training appear to hold more respect for the danger avalanches pose and are more likely to carry avalanche rescue equipment. While those who haven't completed training recognise they have less knowledge, they also think that less knowledge is needed, and they do think they still possess a reasonable amount of knowledge (which may be unrealistic).
11. The findings have reaffirmed the immense value, and positive behavioral impacts, of having completed avalanche training. When comparing the results between those respondents that have, and have not completed available training, the differences are obvious. Prior training vastly reduces the number of mountaineers who never carry avalanche rescue equipment and greatly reduces the avalanche knowledge gap.

12. Through Contextual Insights (page 6) we presented some statistics on avalanche fatalities and incidents in NZ, and as part of this we touched on the subject of under reporting. Having asked this sample about their avalanche involvement, the findings do appear to confirm that there has in fact been a historical underreporting of non-fatal incidents. While it is impossible to determine the precise amount of under reporting, it does raise questions around why this occurs. When we asked the sample about their reflections on the community at large, there is evidence to suggest that cultural aspects have prevented mountaineers from feeling comfortable in sharing these events with others.
13. A major positive to be drawn from the personas analysis is that 'future leaders' of the mountaineering community (the Young, Active and Ambitious) are positively embracing and demonstrating inclusive group decision making and reflection, using data/resources and education to their advantage, and sharing information with others in the community. This suggests a positive future outlook for community leadership.
14. Each 'persona' has quite different characteristics, strengths, and weaknesses. To improve avalanche safety outcomes in the mountaineering community, there will be no 'silver bullet' that works for all of the personas. Continued prevention (and education) will require a range of initiatives that appeal to users across the spectrum. No single 'persona' stands out as being the **problem**, and conversely, no persona stands out as being **immune to the problems**.

GENERAL CONCLUSION

The insights presented throughout this publication will likely resonate differently among readers. As mountaineers, or recreationalists and professionals who travel in avalanche terrain, we each have our own perspectives, life experiences and mindsets, therefore as individuals we will all draw our own conclusions from these detailed findings.

We encourage readers to carefully think about the findings presented on each page, and as you do, to reflect on your own experiences and avalanche-related practices, both past and in the future.

We encourage you to ask yourself some critical questions, such as.

- » As a mountaineer, what learnings can I take from this research that will improve my avalanche safety, while still allowing me to enjoy the mountains, the friendships with my climbing partners, and the challenges of being in the hills?
- » How can I use these findings to contribute to a positive safety culture within the NZ mountaineering community?
- » As an avalanche educator, practitioner, or researcher, how can this work benefit those that I/we seek to help through future prevention, education, training, or research?

Through this research we have uncovered some fascinating insights. That journey has not ended, as we will continue to learn more through further analysis, interpretation, discussion, and collaboration around this dataset.

At the beginning, we set out the two primary research objectives, and within this we asked the question *'is there a cultural issue within the NZ mountaineering community that could be contributing to avalanche related safety issues?'*

Based on the findings we have presented, MSC believes that there are cultural factors within the NZ mountaineering community that are likely contributing to avalanche related safety issues, or at least there are factors which could be improved to enhance mountaineers avalanche safety.

There is no evidence to suggest any widespread issues around a lack of treating avalanches seriously or disrespecting the danger avalanches can pose. However, there do appear to be opportunities for cultural improvement in terms of:

- » increased information sharing amongst mountaineers
- » more open, inclusive, and regular dialogue (communication)
- » improved community inclusivity, to support learning, open discussion, and dissemination of knowledge and best practice techniques.

It is critical at this stage to stress, this research cannot determine attribution (causation) related to any specific historical avalanche incidents. We are not saying these factors have been relevant in past avalanche tragedies, or that they will be relevant to future ones. Furthermore, these factors may not be applicable to every person within the mountaineering community, as this research has explored the findings through personas (groups of respondents), not as specific individuals.


However, the findings presented in this publication clearly indicate areas of opportunity for improved community-wide avalanche safety.

Based on these key findings and conclusions, MSC has formed the following recommendations, actions and considerations.

RECOMMENDATIONS, ACTIONS AND CONSIDERATIONS

For the mountaineering community:

- » This research serves as a distinct opportunity for mountaineers, in particular mentors, leaders and more experienced senior members, to reflect on the culture and 'state' of the community and how they contribute to it. Ideally, the mountaineering community is an environment where people feel safe to share their learnings, experiences (good and bad), concerns, and different perspectives with the confidence and expectation of constructive, open, and respectful discussion. In general, respondents were neutral around 'feeling a part of' the community, so there needs to be further consideration given to how to foster a more inclusive community.
- » Mountaineers should reflect on whether they are as critical of themselves when it comes to safety consciousness as they are with the mountaineering community as a whole. In general, this research indicated that respondents felt they were safer than the overall community. This finding may be due to sampling bias, but it could indicate some mountaineers are overstating their safety consciousness, or they are underestimating others in their community.

- 
- » Critical reflection, even briefly and informally, is of great value. Recreational mountaineers should incorporate this into their standard practice and take the time to reflect critically on their individual approaches and behaviors. Sharing your experiences (both good and bad) and the challenges faced on your trip can only serve as a learning point for you and your group, and for the whole community if shared more widely.
 - » The community as a whole should be encouraging critical thinking around the use of avalanche rescue equipment when mountaineering. While it does not necessarily make practical sense to carry all avalanche equipment for all objectives at all times of year, it is essential that this is **always considered and discussed as a group before leaving**, and that when appropriate it is taken (and participants know how to use it).
 - » The importance of avalanche education and training should not be underestimated by anyone, including Occasional Adventurers. Community members, in particular those acting as mentors, leaders or organisers should continue to reinforce the importance of avalanche education in order to be safe when mountaineering. This should extend to encouraging basic avalanche training, such as an Avalanche Skills Course (ASC) 1, as well as continued education, including the more comprehensive ASC2 course. Furthermore, outside of training, reading books about avalanche safety, using resources available on avalanche.net.nz, and keeping up with new developments is of great benefit.
 - » The value of reporting avalanche incidents (including near-misses) is immense, and strongly encouraged. To achieve this, the community needs to foster a supportive culture, whereby mountaineers feel safe sharing these experiences and recognise the wider educational and incident prevention benefits of sharing.

For mountaineering organisations, membership bodies and associations:

- » Fostering an inclusive, supportive, safe, and vibrant community should be an essential aspect of any group. A group culture that supports information sharing, positive communication, a sense of belonging and safety-consciousness will always contribute to improved safety. MSC recommends these groups take the time to reflect on these findings and consider how these learnings can be used to foster a positive culture within their community.
- » Continue to ensure avalanche education and training is available to members and completion is strongly encouraged. Consider the specific needs of members who aren't overly active mountaineers but who still venture into avalanche terrain from time to time, such as those who may consider themselves to be Occasional Adventurers.

For avalanche educators or training providers:

- » Proactively offer mountaineering specific avalanche education courses, with consideration given to specifically targeting (and catering for) mountaineers from the Occasional Adventurers persona.
- » Conduct mountaineering specific courses in relevant terrain, during typical season/months of the year and using instructors who themselves are mountaineers.
- » Facilitate conversations about the importance of avalanche incident reporting as this will play an essential role in fostering a supportive and open culture.
- » Encourage and demonstrate critical reflection as a standard (and essential) part of the recreational mountaineering experience.

For NZ Mountain Safety Council and the NZ Avalanche Advisory:

- » Consider ways in which the NZAA can better cater to mountaineers, such as adjusting (extending) forecasting periods, adding education resources specifically for mountaineers, and containing more mountaineering specific information and content within the advisories, when appropriate.
- » Work with avalanche educators and training providers to improve the suitability of course offerings for mountaineers. This may comprise of Avalanche Skills Course (ASC) 1 and 2 course resource changes to include more walker/climber focused material, specific activities/exercises for mountaineers, and mountaineering centric decision-making approaches.
- » Work with avalanche educators and training providers to reflect on the two key knowledge gaps identified in this research and discuss ways to ensure these topics are adequately addressed through training.
- » Continue to promote and prioritise the NZAA public observation tool as a simple, effective and valuable method for sharing avalanche incidents.

ACKNOWLEDGEMENTS...

MSC would like to express its thanks and gratitude to the following people and groups. This research project was a highly collaborative effort and would not have been possible without any of the following:

- » all the mountaineers who completed the survey
- » the mountaineers who were interviewed as part of the pre-survey phase, who shared their stories of mountaineering and avalanche involvement in New Zealand
- » the organisations, clubs, groups and channels who shared and promoted the research
- » the expert advisory panel members; Jaz Morris, Ben Corcoran, Grant Statham, Kay Haughey, Anna Keeling and Pascal Haegeli
- » Research NZ, especially Emanuel Kalafatelis and Annita Wood
- » the Department of Conservation, New Zealand Search and Rescue and New Zealand Lottery Grants Board for their funding support.





MORE ABOUT THE SURVEY RESPONDENTS

DIGITAL SURVEY CHANNELS

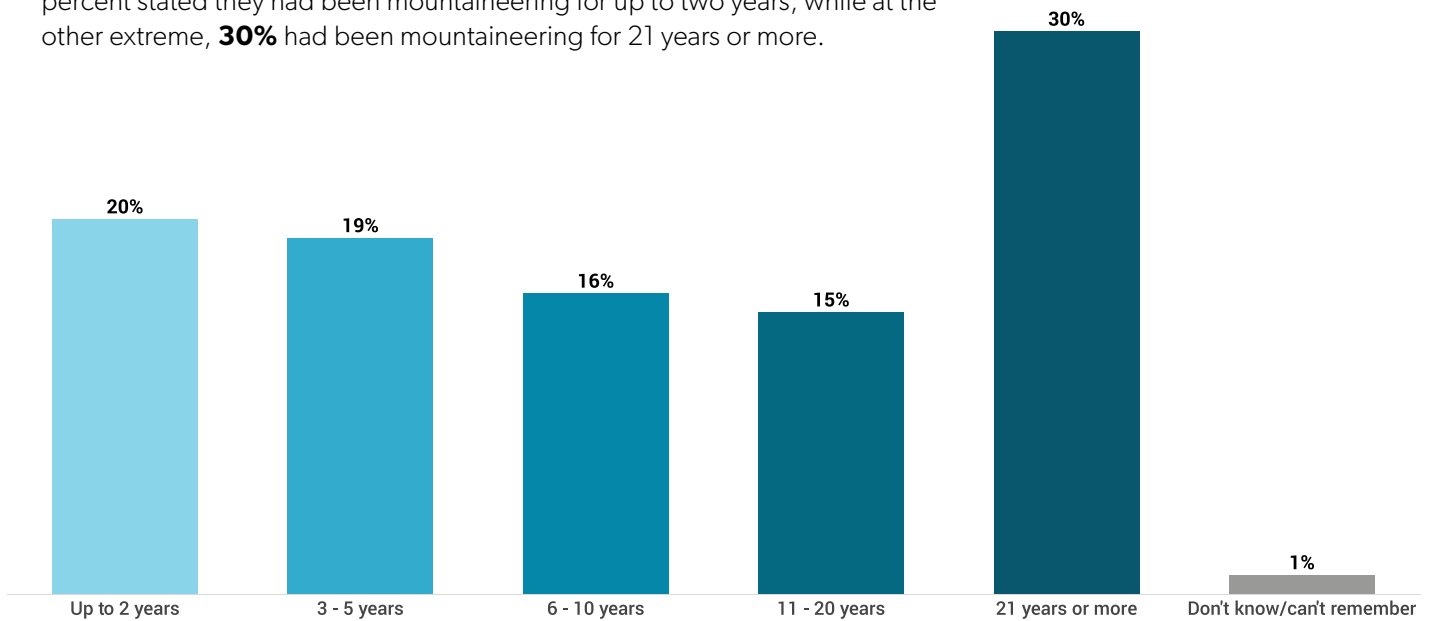
The following list reflects the channels used to promote the survey to the mountaineering community.

- » **Clubs/membership bodies:** NZ Alpine Club, Canterbury Mountaineering Club, Expedition Climbers Club, NZ Mountain Guides Association, NZ Outdoor Instructors Association, NZ Alpine Team, numerous tramping and mountaineering clubs, and LandSAR.
- » **Online channels:** MSC Facebook and Instagram pages and multiple public mountaineering Facebook groups.
- » **MSC networks:** InfoEx subscribers, external avalanche course providers, NZAA public observation submitters, NZAA email subscribers and SHAC 2021 delegates.
- » **Other:** Remarkables Ice & Mixed Festival attendees and Wilderness Magazine.

PHOTO: Crossing Tasman Glacier from Tasman Saddle to Kelman Hut, Taichiro Naka

MANY OF THEM HAVE BEEN MOUNTAINEERING FOR WELL OVER 10 YEARS

We have a wide range in terms of **number of years mountaineering**. Twenty percent stated they had been mountaineering for up to two years, while at the other extreme, **30%** had been mountaineering for 21 years or more.

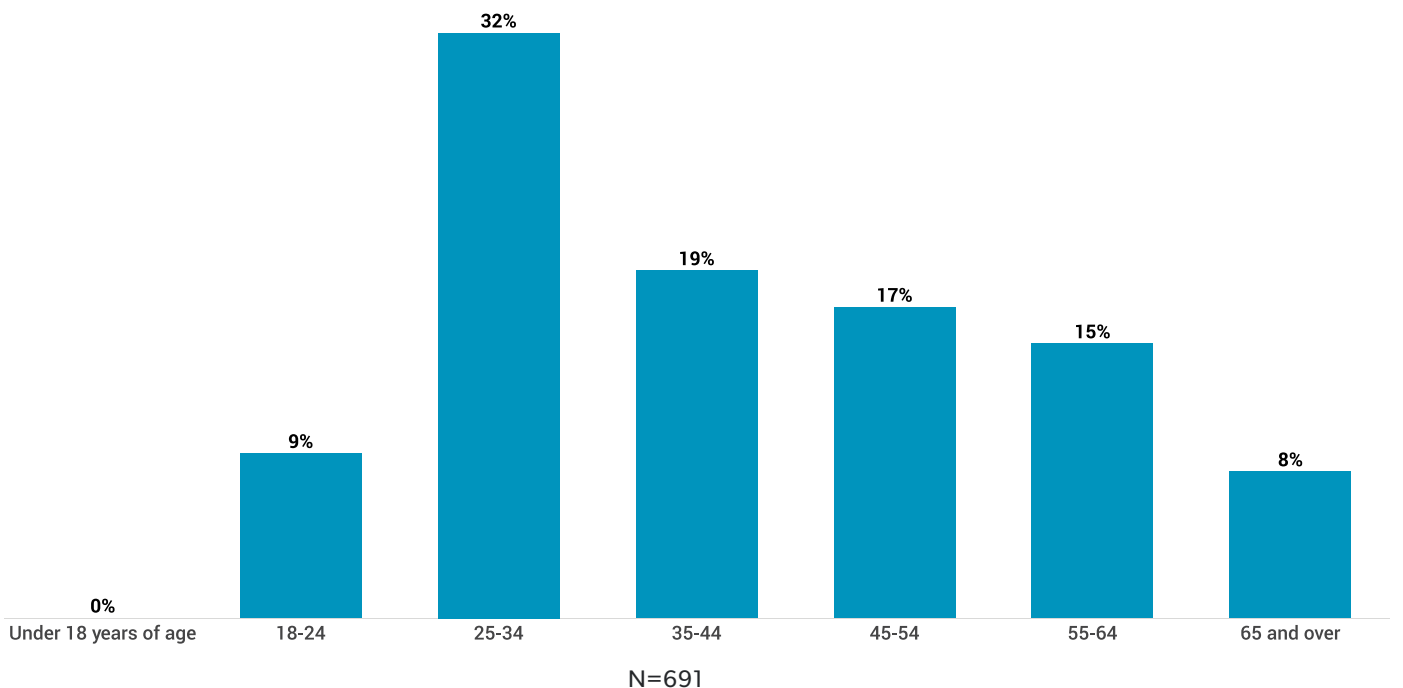


Q1. ABOUT HOW MANY YEARS HAVE YOU BEEN MOUNTAINEERING?

GENDER AND AGE CATEGORIES

Over three-quarters (**78%**) identified as male.

There was a wide range of ages. **41%** were up to 34 years of age, while at the other extreme, **23%** were 55 years of age or more.

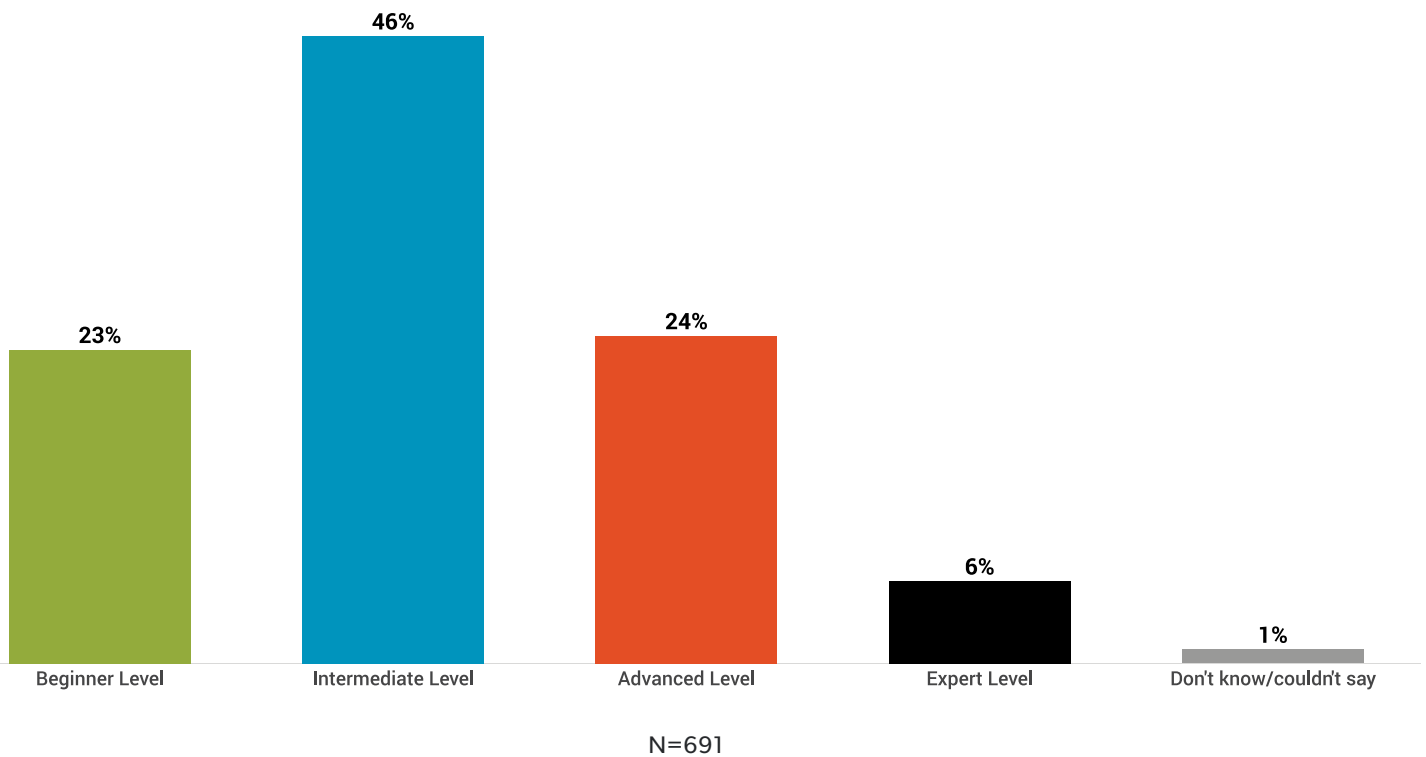


Q50. WHICH OF THE FOLLOWING AGE GROUPS YOU COME INTO?



MANY DESCRIBED THEIR MOUNTAINEERING EXPERIENCE AT THE 'INTERMEDIATE' LEVEL

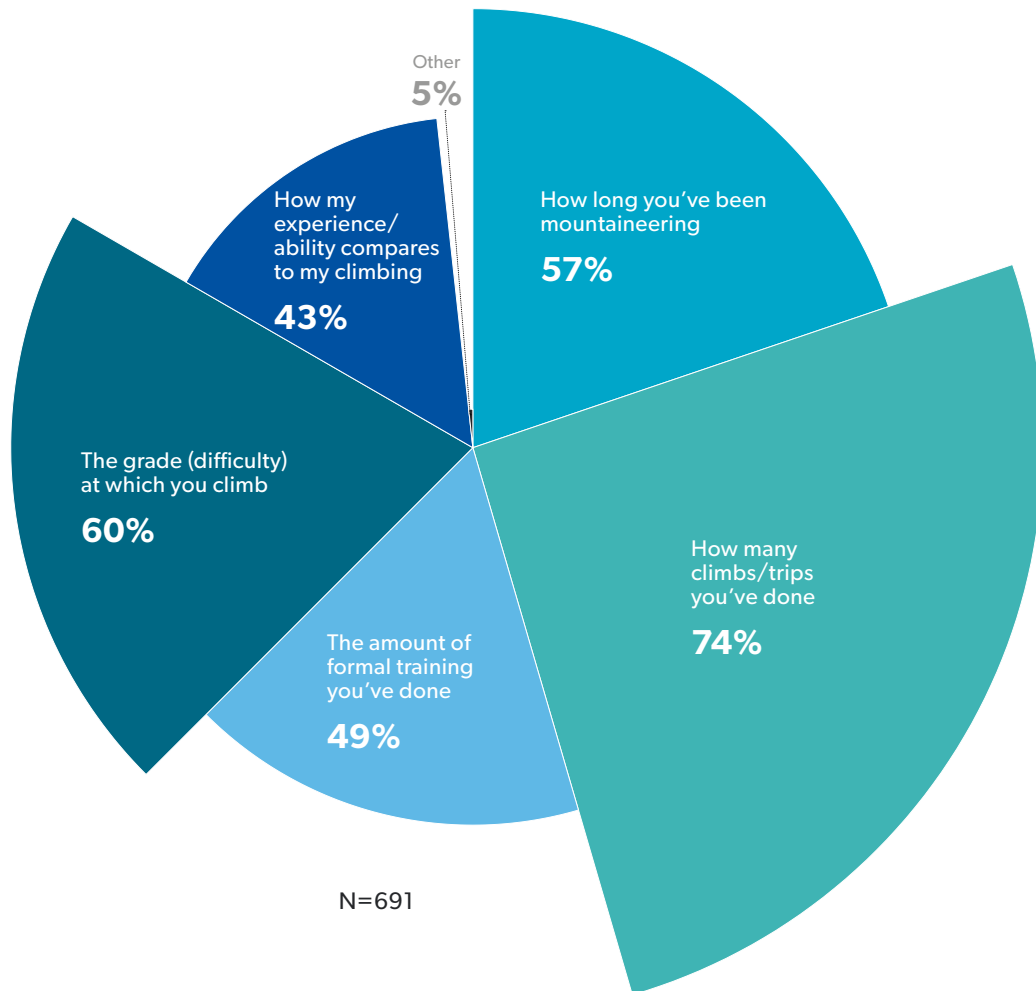
46% self-selected their experience to be 'intermediate', while **6%** selected 'expert'



Q4. HOW EXPERIENCED AT MOUNTAINEERING WOULD YOU SAY YOU ARE?

ON WHAT DO THEY BASE THEIR SELF-PERCEIVED EXPERIENCE LEVEL OFF?

Most commonly **how many climb/trips completed** was used to gauge self-perceived experience level.

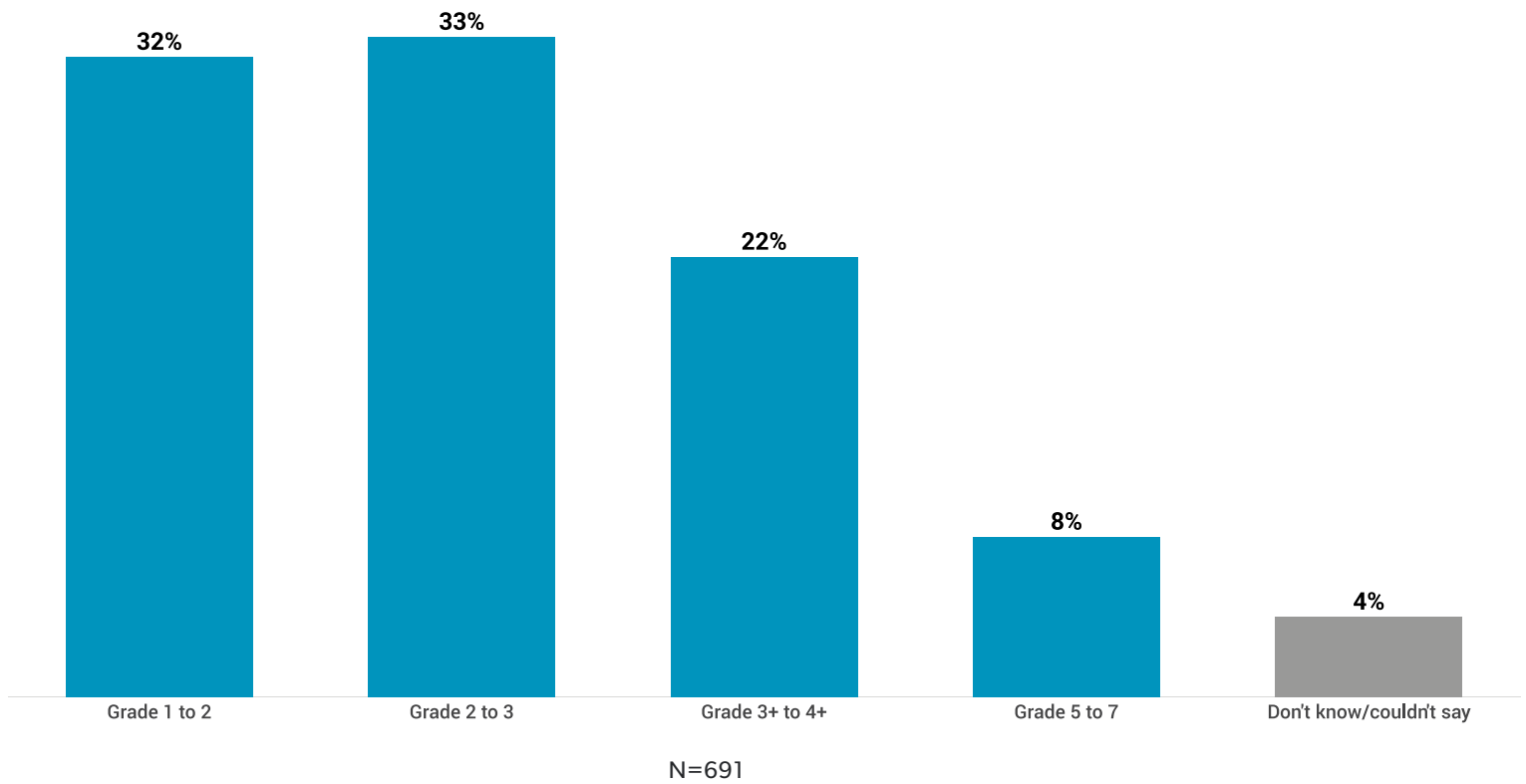


Q5. THINKING ABOUT THE WAY YOU HAVE ANSWERED THE PREVIOUS QUESTION ABOUT YOUR LEVEL OF EXPERIENCE. ON WHAT BASIS DO YOU SAY THIS? WOULD YOU SAY IT'S BASED ON ...

THEIR EXPERIENCE IS REFLECTED IN THE GRADE OF THEIR TRIPS

Most stated they **typically** went on trips with people who had a similar level of experience (**81%**).

And reflecting their level of experience, we have a good spread in terms of the 'highest grade they feel comfortable leading'.

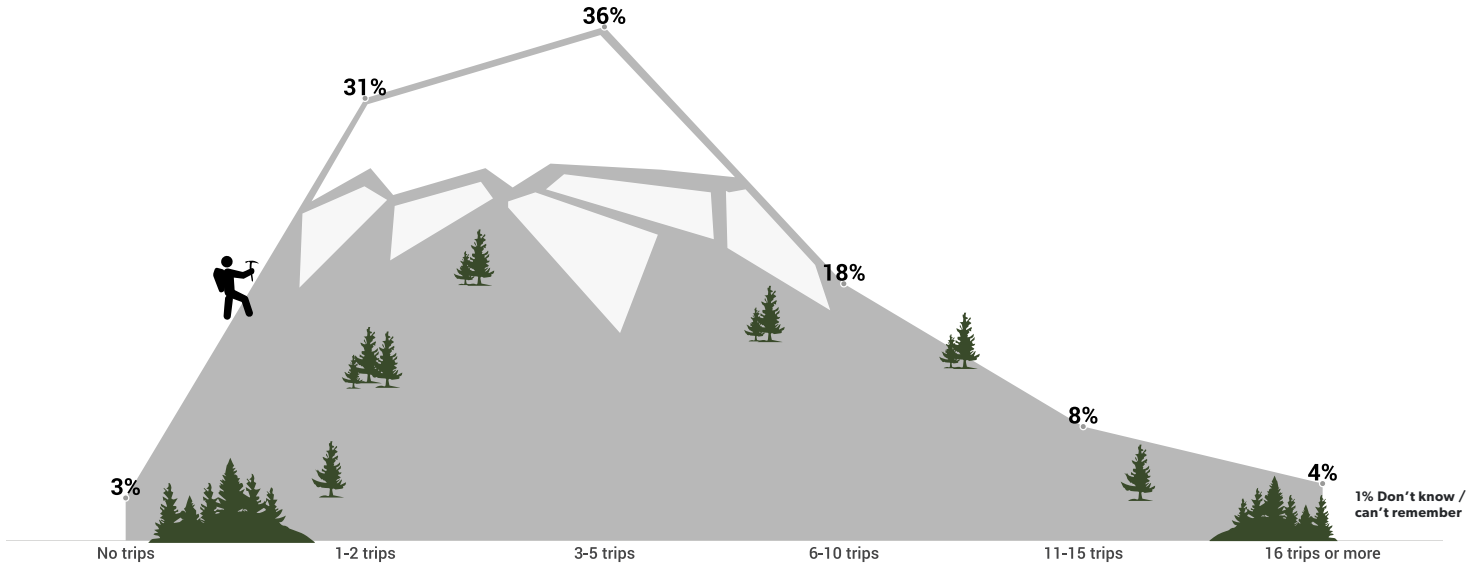


Q6. WHAT IS THE HIGHEST GRADE (MT COOK SCALE) OF MOUNTAINEERING YOU FEEL COMFORTABLE LEADING?

Q9. WHO DO YOU TYPICALLY GO MOUNTAINEERING WITH WHEN YOU'RE ON A RECREATIONAL TRIP?

MOST DID UP TO 5 TRIPS PER YEAR

The number of **recreational trips per year** is also spread across a wide range, with **31%** doing up to 2 trips a year, and **30%** completing six trips or more.

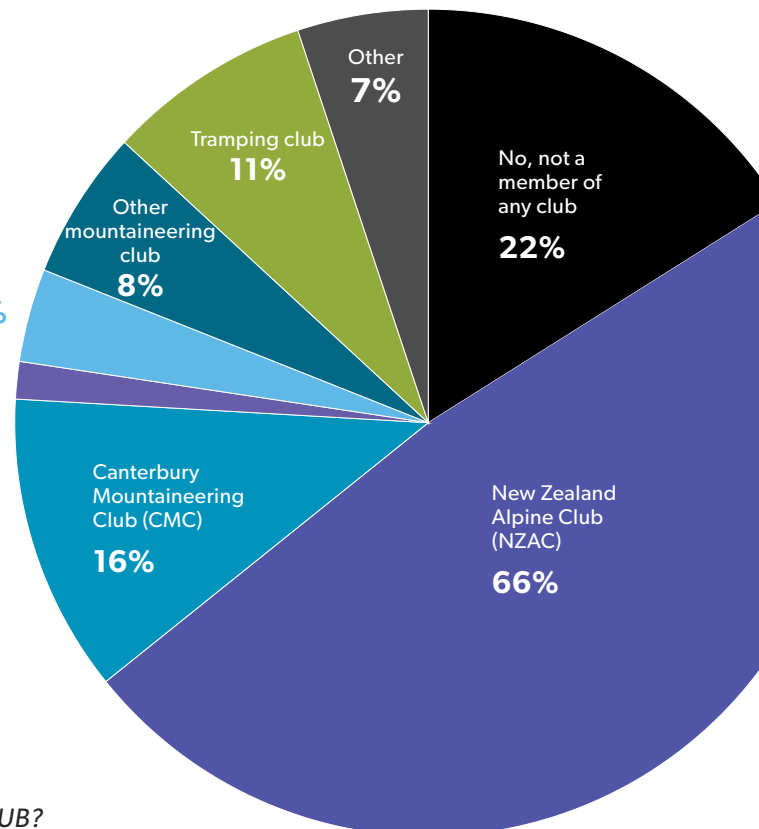


Q8. IN A TYPICAL YEAR, ABOUT HOW MANY MOUNTAINEERING TRIPS WOULD YOU UNDERTAKE (AS A RECREATIONAL MOUNTAINEER)?

MOST BELONG TO CLUBS

Finally, given our approach to recruitment it is not surprising, most stated they belonged to a club, with the NZ Alpine Club being by far the most well represented, though they are the largest mountaineering-related club in New Zealand.

Expedition Climbers Club (ECC) **5%**
 New Zealand Alpine Team (NZAT) **2%**



Q11. ARE YOU A MEMBER OF A MOUNTAINEERING CLUB?

"In the famous words of Colin Kirkus, 'the best trips are about being with the right people at the right place, at the right time. What one does there is purely incidental.'"

– RESEARCH PARTICIPANT



PHOTO: Looking at peaks of Haast, Lendenfeld and Tasman, Malcolm McRae

MT COOK GRADES

The Mt Cook system was first used by Hugh Logan in his The Mt Cook Guidebook (1982). Grades currently go from 1 to 7 with + and – variations. Factors determining the grade are (in descending order of importance): technical difficulty, objective danger, length, and access.

1. Easy scramble. Use of rope generally only for glacier travel.
2. Steeper trickier sections may need a rope.
3. Longer steeper sections generally. Use of technical equipment necessary. Ice climbs may require two tools.
4. Technical climbing. Knowledge of how to place ice and rock gear quickly and efficiently a must. Involves a long day.
5. Sustained technical climbing. May have vertical sections on ice.
6. Multiple crux sections. Vertical ice may not have adequate protection. Good mental attitude and solid technique necessary. May require a bivvy on route and be a long way from civilization.
7. Vertical ice/rock which may not have adequate protection. Rock grades in the high 20s (Ewbank). Climb may be in remote area. May require a bivvy on route.

There is a new Mt Cook grading system detailed in the latest edition of the Aoraki/Mt Cook Guidebook. This new system combines a 'Seriousness Grade' with a 'Technical Grade' to further include the factors besides the technical climbing that affect a climb's difficulty. You can find out more about the new grading system at the following link to ClimbNZ's FAQ page under 'Grading': <https://climbnz.org.nz/faq>

SOURCE: <https://climbnz.org.nz/faq>



OUTDOOR SAFETY
NEW ZEALAND MOUNTAIN
SAFETY COUNCIL

#MakeItHomeNZ

avalanche.net.nz
mountainsafety.org.nz
planmywalk.nz

