SUPPORT DOCUMENT

NCVER

Drivers of student training choices – a focus on student support services — support document 2

Erika Graetz
Angus Hughes
Daniel Pole

Ipsos Public Affairs

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Executive summary

This report summarises the results of a discrete choice experiment (DCE) investigating how preferences for vocational education and training (VET) courses are influenced by various forms of student support offerings. This study was conducted by Ipsos Public Affairs on behalf of the National Centre for Vocational Education Research (NCVER) as part of a research project to understand the drivers of student training choices for VET.

Three forms of support were included in the DCE:

- health and welfare support

- career counselling and job search support

- tutoring and study skills guidance.

Each varied in the level to which a hypothetic VET course provider offered the form of support, ranging from not offered at all, to group sessions and resources, to personalised one-on-one support offerings. Other VET course attributes known to influence student choice (price, delivery mode, travel time) were also included in the experiment to make the scenarios presented realistic and quantify the extent to which supports shaped prospective student choices relative to these.

In combination, the three forms of support investigated represented approximately 26% of the total importance when deciding on a VET course (10% tutoring and study skills, 7.9% health and welfare, 7.8% career counselling). Respondents had a notably higher utility for one-on-one level support for tutoring and study skills relative to group-level offerings, although any provision of the three forms of support increased respondent preferences to select a course. Supports tended to be inelastic, meaning the demand for these services was not strongly impacted by course price.

When comparing levels of support across delivery modes, we found higher share of preferences for one-on-one health and welfare support and tutoring and study skills for online courses. In contrast, when the delivery mode of a VET course was face-to-face, preferences were similar for both of these supports between group-level and one-on-one formats. The opposite pattern appeared for career counselling and job search support, where one-on-one support was more attractive for courses with face-to-face delivery, while group session supports seemed equally preferable for online courses.

We further investigated the importance of each choice attribute by different demographic segments. Tutoring and study skills tended to be prioritised higher by those with mental health-related or physical disability, with the latter also finding health and welfare supports somewhat more important. Tutoring and study skills were particularly desirable amongst respondents with lower levels of educational attainment, respondents who speak a language other than English in the home, and those identifying as Aboriginal and/or Torres Strait Islander. Younger respondents (aged 24 or below) placed higher levels of importance on all supports. The importance of supports were similar across different employment status groups, however, those currently studying or unable to work tended to prefer courses offering tutoring and study skills.

Introduction

Background

The National Centre for Vocational Education Research (NCVER) is an independent, not-for-profit Australian professional body established in 1981. NCVER is responsible for collecting, managing, analysing and communicating data and research on the Australian vocational education and training (VET) sector.

The NCVER is currently undertaking a research project to understand the drivers of student training choices for VET, with a focus on understanding the role of availability and quality of student support services provided by an institution as a driver of student training choices. As part of this project, NCVER engaged Ipsos for the design of a discrete choice experiment (DCE), data collection, and statistical analyses.

NCVER previously undertook a literature review on factors driving student choice of training institution/ course, and a desktop search to find which student supports are mentioned by training organisations on their websites and on social media. The results from this review process supported the design of the DCE, informing the types and levels of student support offered.

Methodology

Sample

A sample of n = 650 was recruited via an online panel by Ipsos, sampling respondents proportionally by both state and gender from across Australia. Respondents were eligible to participate if they were between the ages of 16 and 64, and either currently undertaking tertiary (post-school) study (n = 152, 23%) or interested in/considering undertaking such study in the future (n = 498, 77%). Fieldwork was conducted between September 19 and October 6 2022.

The age and gender distribution of the sample are visualised below in figure 1. The distribution of respondents by state/territory and Accessibility/Remoteness Index of Australia (ARIA) classification is shown in figure 2. The employment status of different respondents is shown in table 1.

Approximately 22% of the sample identified as having a disability, impairment or long-term health condition, with specific forms of disability identifications presented in table 2. The highest level of educational attainment is presented in table 3. Approximately 6% of the sample (n = 41) identified as being of an Aboriginal and/or Torres Strait Islander background.

Figure 1 Age and gender distribution of respondents
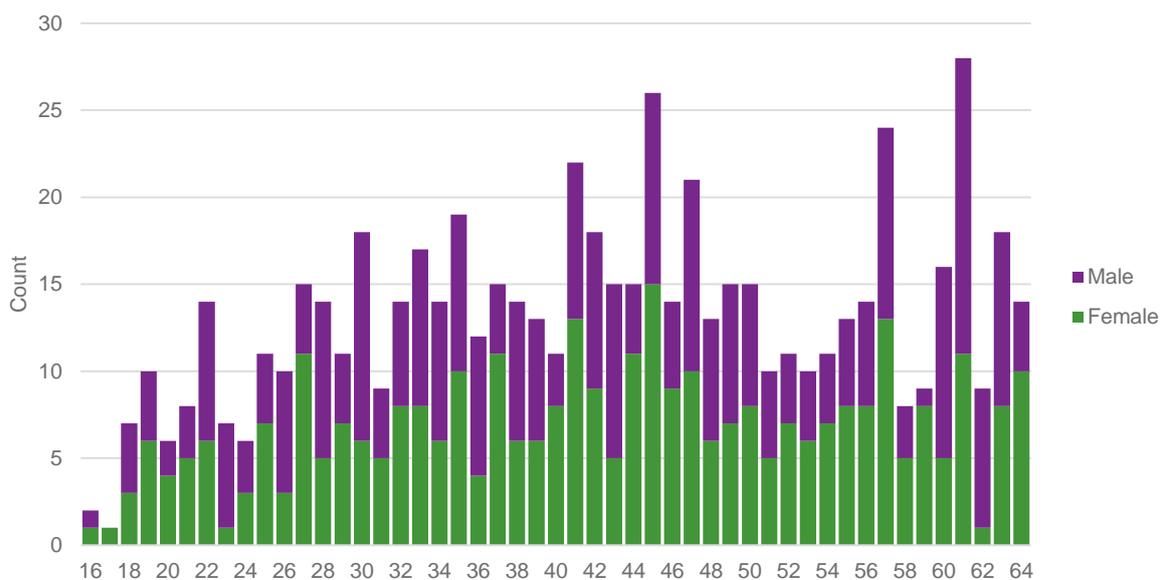
Age group	16-24	25-34	35-44	45-54	55-64
n (%)	61 (9.4%)	135 (20.8%)	155 (23.8%)	146 (22.5%)	153 (23.5%)

Table 1 Employment status of sample recruited

Employment	Type	n	%
Employed	Employed full-time (35 hours or more a week)	367	56.5%
Employed	Employed part-time (less than 35 hours a week)	133	20.5%
Carer / Other	Carer	3	0.5%
Carer / Other	Looking after the home and/or family	16	2.5%
Carer / Other	Other	6	0.9%
Carer / Other	Prefer not to say	5	0.8%
Carer / Other	Retired	22	3.4%
Studying	Studying full-time	24	3.7%
Studying	Studying part-time	13	2.0%
Unable to Work	Employed but on extended leave from work	2	0.3%
Unable to Work	Unable to work due to sickness or disability	27	4.2%
Unemployed	Unemployed and looking for work	32	4.9%

Figure 2   State and Accessibility and Remoteness Index of Australia (ARIA) classification of respondents
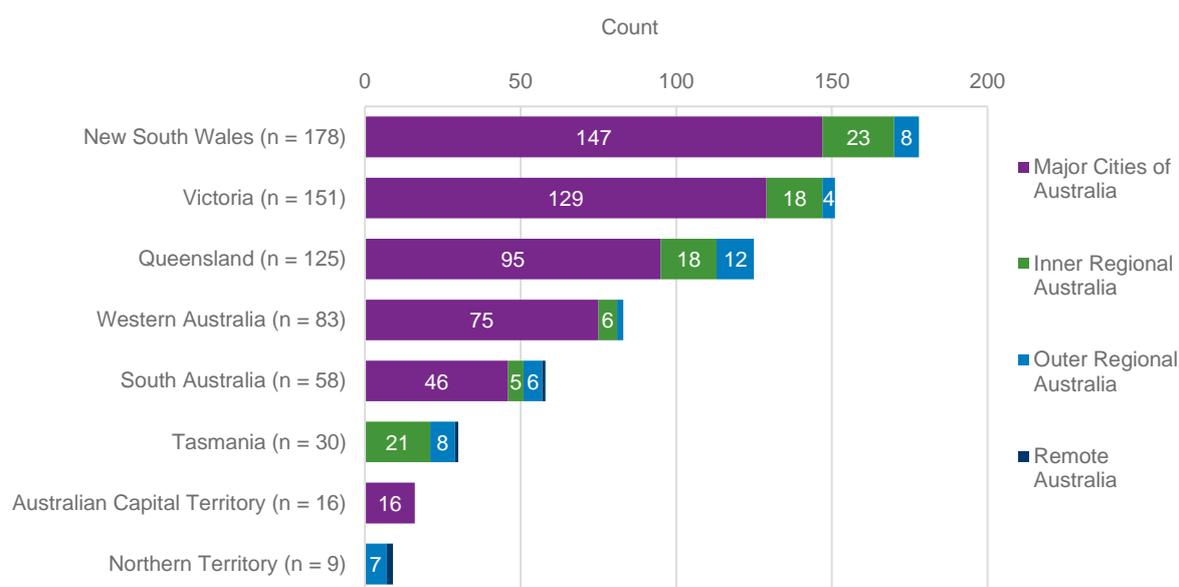
Note: Counts of less than four not presented.

Table 2   Proportions of respondents by disability type

	n (%)	
	Absent	Present
Learning-related disability (including forms of learning, vision, hearing, intellectual, and acquired brain impairments)	593 (91%)	57 (9%)
Physical disability	593 (91%)	57 (9%)
Mental health-related disability	604 (93%)	47 (7%)
Medical condition	596 (92%)	54 (8%)

Table 3   Highest level of educational attainment

	n (%)
Up to Year 12 qualification or below	96 (15%)
Up to Diploma / Advanced Diploma qualification	179 (27%)
Up to Undergraduate / Postgraduate qualification	375 (58%)

Survey and DCE design

A survey was designed to first capture aspects of respondent demographics. Respondents provided their age, gender, state and postcode, employment status, highest level of education, Aboriginal and/or Torres Strait Islander identification, languages other than English spoken at home, any relevant disability information, and approximate personal income before tax.

The DCE experiment was then presented. The experimental design was developed based on six factors with between 3 to 4 levels within each factor as described in table 4 below. The design balances sufficient even repetition of the factors and levels to ensure sound predictability of these effects within a model. Note that we had an 'alternative specific effect' between factors 1 and 2, whereby online modes would not involve any of the listed travel times. The design took this restriction in travel time for online delivery into account when presenting options to respondents.

Each respondent was randomly assigned to complete a block of 12 scenarios, with each scenario involving a decision between three different VET training organisations offering a certificate III level course. Respondents compared six different attributes of each course, with varying attributes and levels (from within table 4 below) varying according to the specified design. Respondents were asked to select their 'one' preferred option. These choices were collected and used to develop the choice model and predictions as described further in this report.

Following the choice exercise, respondents were then asked to rate nine different characteristics of a VET course in terms of their importance in choosing a training provider. The aim of rating these characteristics was to capture aspects related to choice not otherwise incorporated in the DCE attributes.

Table 4   DCE attributes and levels

Attribute	Levels	
Delivery mode	1.	Online
	2.	Face-to-face
	3.	Blended (combination of face-to-face and online)
Travel time	1.	NA (online delivery mode only)
	2.	Less than 30 minutes
	3.	30 to 60 minutes
	4.	More than 60 minutes
Health & welfare support	1.	Support is not offered
	2.	Group sessions on health and welfare topics (online or face-to-face) available.
	3.	One-on-one (personal) counselling sessions (online or face-to-face) and various health and welfare resources available.
Career counselling & job search support	1.	This support is not offered
	2.	Group sessions on topics related to job searching available (online and face-to-face).
	3.	Personal sessions with a career counsellor to assist with job searching (online and face-to-face) and other job search resources available.
Tutoring & study skill guidance	1.	This support is not offered
	2.	Group sessions on course content and study skills are available (online and face-to-face).
	3.	Personalised learning plans and supports (e.g. tutoring) are provided to help students complete their study as well as general study skills advice.
Price	1.	$300
	2.	$1500
	3.	$3000
	4.	$5000

Statistical models

The choice model is built to understand what drives individuals to choose between different VET courses. The output of the model can be used to estimate the share of preferences between varying choice scenarios, which reflect the probability of a particular course option being chosen over the other(s) and capture the importance of each attribute in driving this choice.

The model included a main effect for each of the six attributes, as well as interaction effects. These interaction effects were between delivery mode and three forms of support (health and welfare support, career counselling and job search support offered, tutoring and study skills guidance offered), and an interaction between delivery mode and course fees.

The selection of these interactions was guided by:

- **Theory**: Based on the NCVER literature review, we expected the attractiveness of different forms of student support offerings to vary depending on how the VET course was delivered.

- **Data**: Prior to model fitting, we conducted a series of chi-squared analysis tests that indicated statistically significant effects between particular attributes. The results suggested that delivery mode and VET course fees were interrelated and should be reflected in the model.

- **Parsimony**: We aimed to ensure a reasonable number of parameters estimated within the model. Including an excessive number of main effects/interactions risks overfitting, whereby idiosyncratic influences on choices of the respondents (or 'noise') are captured over more systematic influences (or 'signal'), which can impair predictions.

Model estimation was done using Hierarchical Bayes (HB) as implemented in the Sawtooth software package. Traditional estimation methods typically assume that the effect of each attribute on a given choice are equal across all individuals. In contrast, HB allows each individual to have a unique estimate of how each attribute influences their own choices, while "borrowing" information from other respondents in the data set to improve the accuracy and stability of these personalised estimates[1]. The HB method implemented in Sawtooth uses Gibbs Sampling to estimate each parameter[2]. A total of 30 000 iterations were used in the estimation procedure with convergence.

Interpretation of model outputs

The estimates derived from the HB model are referred to as an individual's part-worth utilities (or value, benefit) for each attribute, and sum to the total worth of a given choice under consideration. We assume individuals will typically select the choice of VET course with the highest perceived level of 'utility'.

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1 Technically, the estimates of how each attribute influences each individual's choices are shrunk towards the average effect across the sample to improve their accuracy and stability. Although the model estimates are at the individual level, this average that is used to 'borrow' information is at the level of the entire sample. This use of information across individual and sample levels is why the method is termed 'hierarchical'. The outputs model the probability distribution of each estimate by updating given the data, hence the method is 'Bayesian'. A good introduction is provided by Howell (2009), CBC/HB for Beginners. Sawtooth Software Research Paper Series.

2 Gibbs sampling is a method used to calculate the values of the model parameter estimates. Gibbs sampling is a Markov chain Monte Carlo (MCMC) method that works by starting with a prior multivariable probability distribution and iteratively draws proposed values from this and updates using an algorithm to find the estimates that maximise the posterior probability. A comprehensive explanation is provided in Casella & George (1992). Explaining the Gibbs Sampler. The American Statistician, 46(3).

These models are not deterministic, meaning we expect a level of variability in individuals' choices due to unaccounted for factors (hence choices being at least somewhat 'random').

We work with three key model outputs throughout this report:

- **Utilities:** Utilities are direct model outputs on the levels of each attribute. Higher utilities drive higher levels of preference for a particular choice. Although difficult to directly interpret, utilities are scaled within attributes to sum to zero, and therefore provide a means of comparison within a given attribute of the value associated with a given level. Utilities are used to calculate both the shares of preference and importance scores.

- **Share of preference:** The share of preference reflects the probability of a particular course option being chosen over the other(s). We calculate the total worth of each choice in a given scenario for the individual (based on their own unique part-worth utilities). Applying a softmax function[3] to these total worths creates the share of preference. Simply put, this is multiplying the selected choice (factor level) by the model parameter for that factor and level, then exponentiating the scores. The values for each combination offer are divided by the sum of all offers combined, to provide a share value out of 100%. Individuals' shares of preferences are then averaged to determine the overall share of preferences presented.

- **Importance scores:** Importance scores are calculated based on the differences between the minimum and maximum levels of utility for the levels within each attribute. Although these quantities are less easily interpretable compared with shares of preference, the importance scores across different attributes are scaled to sum to 100, roughly representing the extent to which attributes comparatively drive respondent choices and enabling comparisons.

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3 The softmax function is given by $e^{x_i} / \sum_{j=1}^{K} e^{x_j}$ where e is the standard exponential function, x_i is the total worth for the ith choice, K is the total number of choices, and j indexes each choice under consideration. In other words, the total worth for each choice is exponentiated, and we divide this by the sum of all exponentiated total worths for the set of choices.

Results

VET course attributes

Below we summarise at a high level the results of the DCE by different attributes. We examine first the attribute importance, then average utilities within each level of these attributes. We then introduce a base scenario to demonstrate how varying each attribute level influenced the share preferences and price elasticities.

Attribute importance

The model-estimated importance of each factor is presented below in figure 3. Price was by far the most important attribute to respondents in selecting a VET course, followed by delivery mode.

Figure 3   Overall importance by choice attribute across the full sample
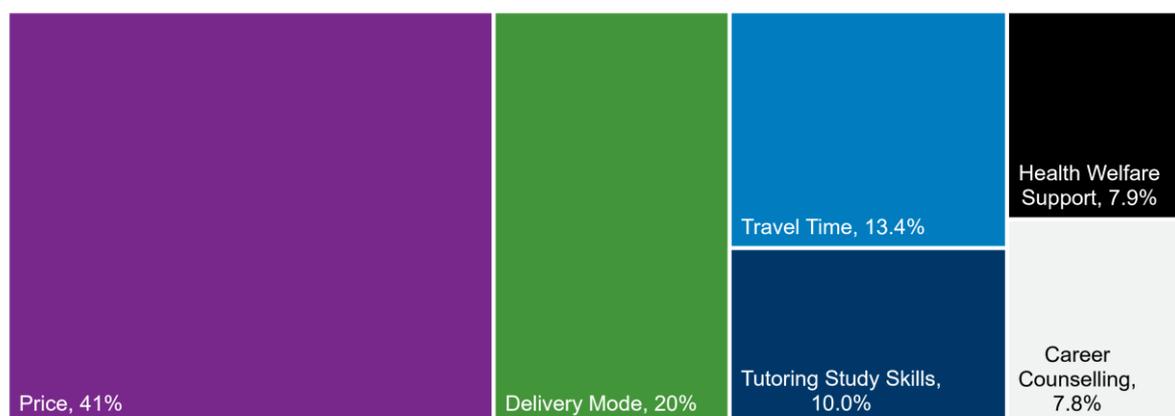
The three support options of central interest for this research (health and welfare support, career counselling and job search support, and tutoring and study skills guidance) ranged in importance from 8 - 10%, implying that these features of a VET course do influence respondent choice, albeit to a lesser degree than the price, delivery mode, and travel time. In combination however, these supports represented a total of 26% in the variation of choices within the presented VET course offers.

Average utilities by attribute levels

We can also consider how people's preferences are shaped by the levels of each attribute. By drilling down into the levels within a factor and comparing the size and direction of the average utilities within a factor, we can see what is most important at the next level (e.g., which travel distance is most preferred within travel time overall).

The average utilities for these levels have been scaled to sum to zero within a given attribute, such that a positive average utility represents a higher level of value relative to other levels within the attribute, and a negative utility represents a lower level. The zero-centred average utilities are presented below in figure 4

Figure .

Figure 4   Average utilities within each attribute
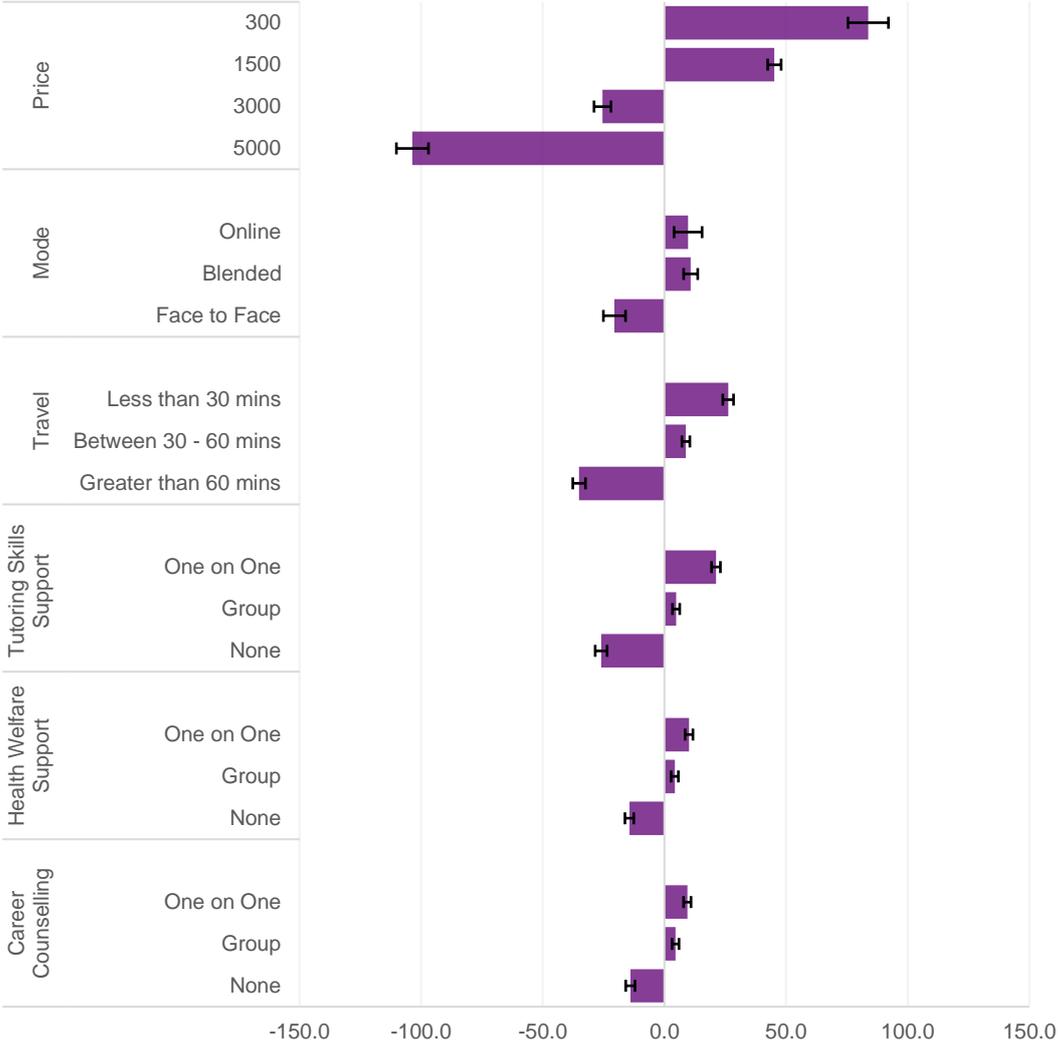
For example, as shown, a price of $5000 has on average a strong, negative utility, implying that relative to other prices presented, this level was much less preferred. On the other hand, the cheapest price option has a higher level of utility, intuitively suggesting that respondents will seek to maximise their utility by selecting a cheaper course.

Within each of the three forms of support provided, the average utilities were highest for one-on-one, personalised offerings. This was most pronounced in the tutoring and study skills guidance support. Group-level career counselling and job search support offerings were most comparable to one-on-one supports. Courses with no support offerings had a negative utility, implying these were much less preferred to comparable courses with either group or one-on-one supports.

Varying share preferences by attributes

To understand how preferences change as the attributes of VET courses vary, we set up a base choice scenario and simulated preferences when changing attributes on the one option to evaluate change in share. The base scenario is presented below in table 5.

Table 5   Base scenario attributes

	Option 1	Option 2	Option 3
Delivery mode	Online	Face-to-face	Blended
Travel time	NA	30 to 60 minutes	30 to 60 minutes
Health & welfare support	Group sessions	Group sessions	Group sessions
Career counselling & job search support	Group sessions	Group sessions	Group sessions
Tutoring & study skill guidance	Group sessions	Group sessions	Group sessions
Price	$1500	$1500	$1500
Share of preference	40.3%	20.5%	39.2%

This base choice scenario was selected as a 'middle of the road' scenario, with equal mid-level prices, equal mid-level student support options offered, and the three key delivery modes being available. Note that online delivery implies no travel time meaning this attribute differed between options 1 and 2 and 3. From this baseline, options 1 and 3 were approximately equal in preference share (40.3% and 39.2%, respectively), while the face-to-face delivery in option 2 was less preferable (20.5%).

We then treated option 3 as variable, systematically altering the level of each attribute to identify how these change the share of preference. These changes in the share of preference for option 3 in the base scenario are shown below figure 5.

Figure 5   Relative preference for Option 3 in base scenario by varying attribute levels
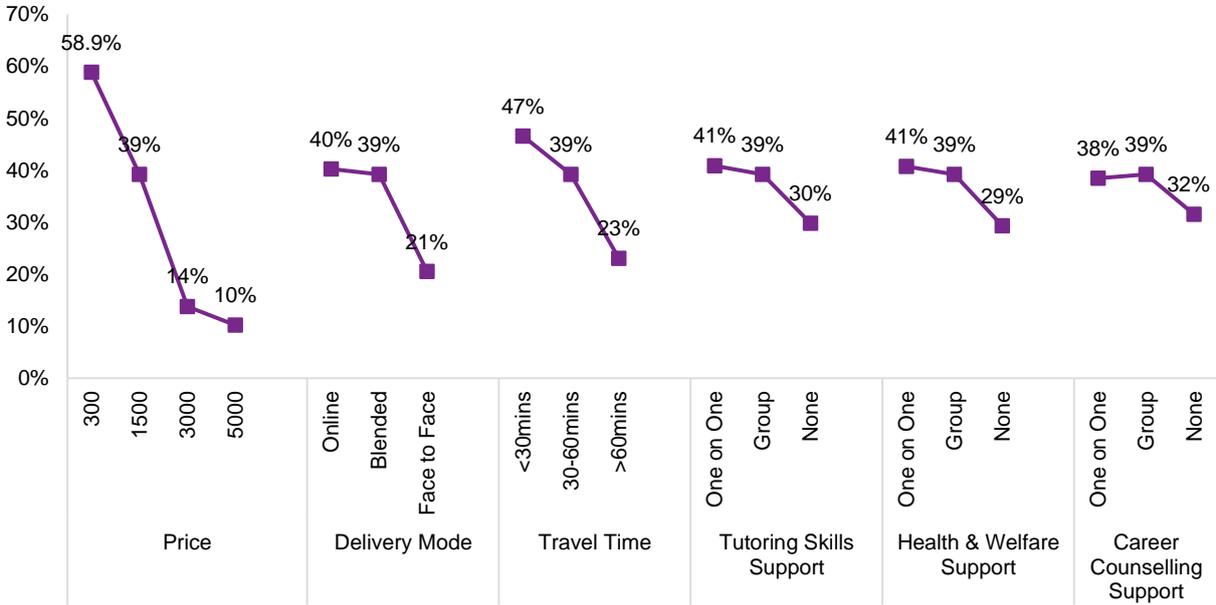
For example, adjusting option 3 in the base scenario to a reduced price of $300 (and holding all other attributes fixed) increases the share of preference for this VET course offering to 58.9%, relative to options 1 and 2 (which remain fixed). Likewise, adjusting option 3 in the base scenario to instead offer no health and welfare support reduces the share of preference for this offering to 29%. Note that each curve has a mid-point share of preference equal to 39%, reflecting the attribute levels in the base scenario.

The largest change in share preference (relative to the base scenario) is found for price, followed by delivery mode and travel time, which have higher impacts in terms of utility. Moving from a high level of

personalised, one-on-one tutoring and study skills guidance support offered to none at all results in a reduction of approximately 11% of share preference for option 3. Health and welfare support has a similar reduction (12%). On the other hand, the change for career counselling is less impactful (6%), but the share of preference is still reduced for this option.

Elasticities

By plotting the curve through varying price points from low to high, the model estimated share of preference can be used to calculate the elasticity of the offer. The steeper the curve or shape of the line, the more responsive the offer is to change in price.

Elasticity by delivery mode

Results are presented below in figure 6. The base scenario, as in previous analyses, is a reasonably average price of $1,500 per course. At this point, we see that the preference for online and blended are at similar preferences of 40% and 39% respectively. At the lowest price point ($300), the order of preference is for blended, then online and then face-to-face. This interchanges as price increases, and online starts to supersede other modes. At the highest price point, online is preferred, with blended and face-to-face at similar levels.

Figure 6   Elasticities by delivery mode

Delivery mode	Drop in share for full range of price	Average price elasticity of demand
Online	40%	-0.64
Face-to-face	35%	-0.70
Blended	49%	-0.79

Converting the change in price and change in demand to 'average elasticity scores' across the range, we see that blended is the most price reactive at –0.79, followed by face-to-face (–0.70) and then online (–0.64). This suggests that blended has the greatest decline in preference as price increases. Notably, the face-to-face offer declines most in the price increase from $300 to $1,500, however it flattens out more than other modes as the price increases to $3,000.

There was a higher preference for the face-to-face delivery mode than blended at the $3,000 mark, suggesting that people were more inclined to see more value in face-to-face than blended mode at $3,000. The influence of other factors such as travel time may also interplay with these responses and may be further considered for potential minor variations.

Elasticity by supports

To determine the elasticities of the support offerings, we set up simple pairwise simulations against a reference offering of 'no support offered' at the $1500 price point. That is, we calculated how share preference changed across price points and levels of support within a given delivery mode, relative to the reference offering. Results are shown below in figure 7.

Figure 7   Elasticities within delivery mode and by supports against an offering of no support at $1500

A. Online delivery
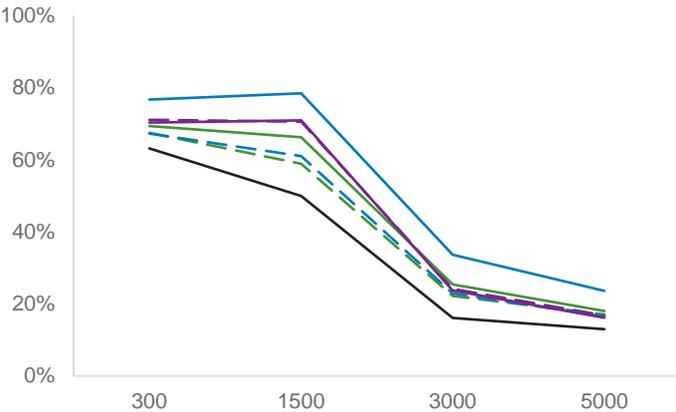
Support	Drop in share for full range of price		Average price elasticity of demand	
	Group	One-on-one	Group	One-on-one
Health Welfare	50%	51%	-0.67	-0.66
Career	54%	54%	-0.70	-0.71
Tutoring	51%	53%	-0.68	-0.60

B. Face-to-face delivery (30 – 60 mins travel time)
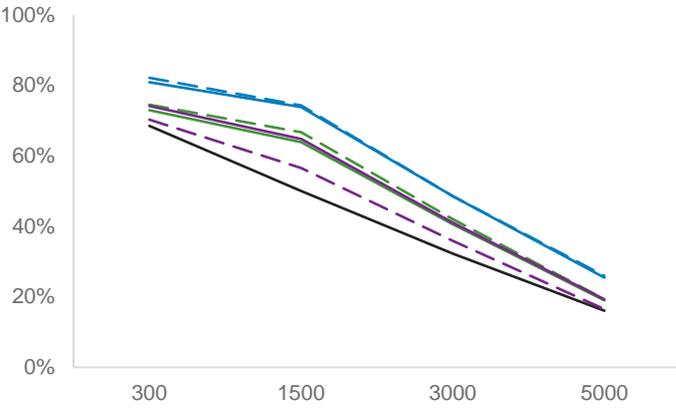
Support	Drop in share for full range of price		Average price elasticity of demand	
	Group	One-on-one	Group	One-on-one
Health Welfare	55%	54%	-0.66	-0.66
Career	54%	55%	-0.70	-0.66
Tutoring	56%	55%	-0.59	-0.59

C. Blended delivery (30 – 60 mins travel time)
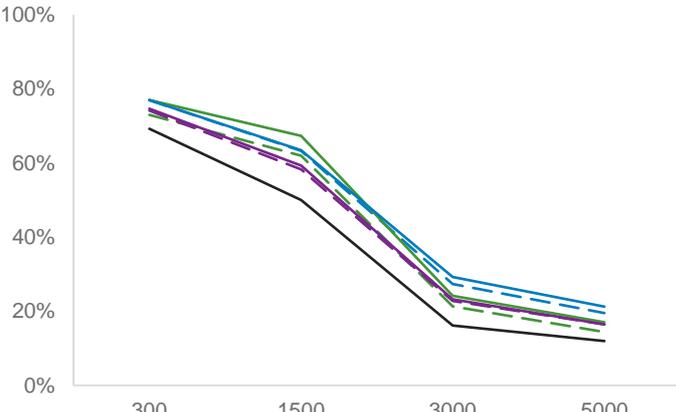
Support	Drop in share for full range of price		Average price elasticity of demand	
	Group	One-on-one	Group	One-on-one
Health Welfare	59%	60%	-0.76	-0.72
Career	58%	58%	-0.72	-0.72
Tutoring	57%	56%	-0.67	-0.64

Legend:
- ——— No Support (Baseline)
- – – – Group - Health Welfare
- – – – Group - Career
- – – – Group - Tutoring
- ——— One-on-one - Health Welfare
- ——— One-on-one - Career
- ——— One-on-one - Tutoring

The amount presented in the elasticity charts represents the share preference out of 100% relative to the reference offer of no support, priced at $1,500, and within the same delivery mode. So, for example, a share of 80% would be comparing an alternative offer against this and represent a 30% difference in preference in favour of the alternative course. The baseline (in black) of no support is also presented

differing to the price point. Note that at the $1500 price point for all delivery modes, there is a 50% share preference as both offerings are identical.

The tables to the side of each plot show the results when converting the change in price and change in demand to 'average elasticity scores'. Note that all of these values fall between -1 and 0, suggesting that these supports are more inelastic and as such demand for these services is not strongly affected as price varies.

For online delivery, we see that career counselling and job search support are slightly more price reactive with average elasticities of demand of -0.70 (group) and -0.71 (one on one). Both levels of career counselling support showed a slightly steeper dip in share preference between $1,500 and $3,000 compared with health and welfare support and tutoring and study skills guidance. One-on-one tutoring support was the least price reactive at -0.60; notably, this form of support appeared to have the highest level of importance and stronger utility values (see figures 3 and 4).

For face-to-face delivery, a more consistent share decline across the different supports can be seen as price increases. The elasticities of health and welfare and career counselling and job search support were similar both across one-on-one support and to one another (-0.66), indicating a comparable level of price reactivity, although group support for career counselling and job search support was slightly more reactive (-0.70) compared with health and welfare support (-0.66). Once again, tutoring support was the least price reactive overall. Interestingly, the group-level tutoring support was remarkably similar in share preference to one-on-one offerings in this delivery mode.

For blended delivery, health and welfare supports showed slightly higher price reactivity at -0.76 (group) and -0.72 (one-on-one), although career counselling and job search support were nearly on par with this. Tutoring and study skills guidance remained the least reactive in terms of demand to changes in price. As shown in panel C of figure 7, the blended mode in general appears to have a greater closeness of preference versus price change across the support types, compared with online and face-to-face delivery modes.

Willingness to pay

We extended the utility and elasticity-based analyses to understand individuals' preference for attributes and features in monetary terms, i.e., willingness to pay (WTP). We primarily used the Sampling of Scenarios method[4] to calculate WTP. This methodology was chosen as it enabled a more rigorous simulation-based approach, incorporating multiple scenarios within a competitive context. We illustrate how this methodology works and how we implemented it below.

Sampling of Scenarios method and estimating generalised willingness to pay

To understand how WTP can be calculated via simulation, imagine a hypothetical VET course offering is enhanced with a new feature (e.g., reduced travel time, a new form of student support) at the same price. This enhancement would typically increase the share of preference relative to the same VET course without this new feature. We then try another simulation of choices when the price of the new enhanced course is slightly increased, which would usually decrease the share of preference. Via a search algorithm, we first added in a feature for no additional cost, and then iteratively increased the price until the share of preference for the new enhanced course was back to the base level of the same VET course without the enhancement. The difference in price is then the WTP for the feature.

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4 Orme, B. K. (2006). Getting Started with Conjoint Analysis Strategies for Product Design and Pricing Research. Research Pub LLC.

To apply the Sampling of Scenarios method, we applied this WTP by simulation style of approach to hypothetical course offerings in a competitive market simulation to account for context of other VET course offerings in the marketplace. We created a simulation setup with five hypothetical competitor course combinations included to allow the simulation to find the price at which the feature could be equalised. This was considered a reasonable amount of competitive or alternative offers based on the nature of the subject matter, number of attributes in the study, and the testing of smaller scores. We ran this simulation approach across thousands of random draws of competitor course specifications.

In each instance, the least preferred level for a given feature (e.g., maximum travel time, no form of support) was set as the reference point. This approach allowed us to calculate median WTP estimates and apply 95% confidence intervals to understand level of variation in the WTP estimates and test for significant differences.

Table 6   Attribute WTP results estimated

VET course attribute	Reference level	Estimated WTP
Delivery mode	Face-to-face	Online Blended
Travel time	Greater than 60 mins	Less than 30 mins Between 30-60 mins
Health & welfare support	None	Group One-on-one
Career counselling & job search support	None	Group One-on-one
Tutoring & study skill guidance	None	Group One-on-one

WTP by attribute

Estimated WTP values are presented below.

Figure 8   Generalised willingness to pay by feature
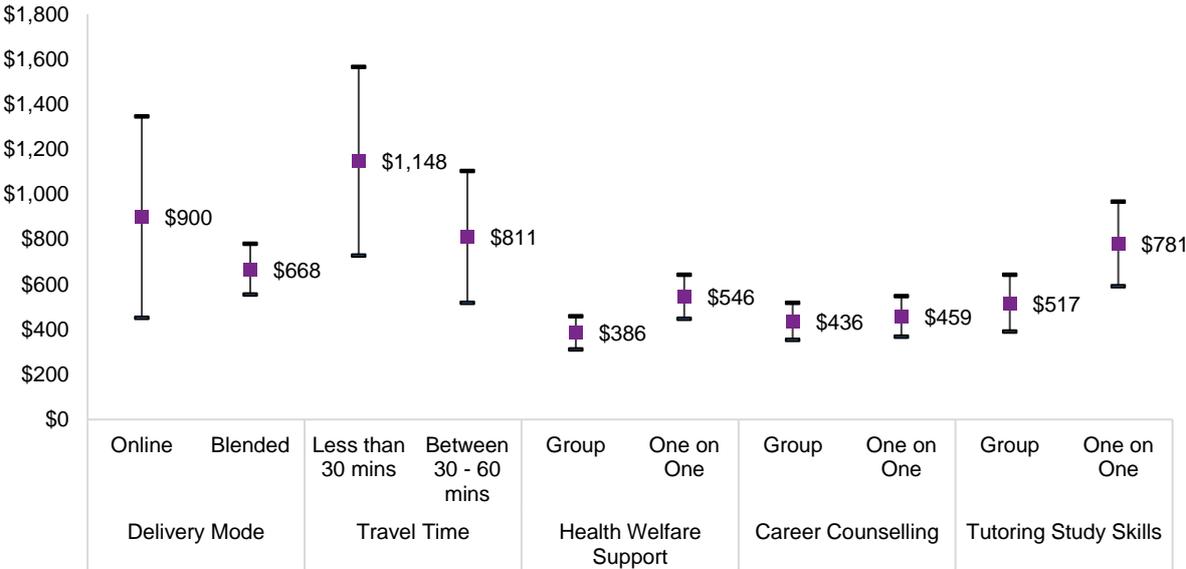
Across all forms of student support, respondents were prepared to pay at least an additional $300 for a level of support (health & welfare, career counselling, tutoring and study skills), relative to no support provided at all. Group health and welfare support had the lowest WTP of any form of support at an additional $386 per year (95% CI = $312, $460), while personalised, one-on-one tutoring and study skills commanded an additional $781 per year (95% CI = $593, $968) making it the most valued form of student support proposed.

Across simulations, people were generally prepared to pay more for one-on-one support compared with group support. The gap between these levels was especially noticeable for tutoring and study skills support ($781 - $517 = $264) and health and welfare support ($546 - $386 = $160). The WTP between group and one-on-one career counselling however was much closer, with only a $23 difference for the personalised one-on-one support (i.e., $459 - $436), indicating that group career counselling may be valued similarly to one-on-one levels. One-on-one tutoring and study skill support also had a considerably higher WTP ($781 - 546 = $235) than the one-on-one health and welfare support.

Within delivery mode, people showed the propensity to pay $900 more for an online course compared with face-to-face, and an additional $668 for blended over face-to-face. The confidence intervals were quite wide and overlapped between online and blended, suggesting that significant differences could not yet be detected between these particular modes, but both were substantially higher than purely face-to-face delivery.

In terms of distance to education, as distance decreased people were prepared to pay more for courses. For less than 30 mins (compared with more than 60 mins), simulations showed people were prepared to pay over $1,100 more than a course greater than 60 mins from home, and over $800 for those 30-60 mins from home. Travel time is clearly significant and equated to cost benefit.

WTP by support service type attribute (with fixed delivery mode)

Following on from the generalised WTP analysis we conducted further simulations, focusing on a specific support type within a fixed delivery mode. We held constant the course offer being considered, both in mode, base price ($1,500) and travel distance (30-60 mins where applicable) and set the other two support types to 'none'. We add one support level at a time (none to group to one-on-one), whilst no other support was available within the main fixed course offer. Competitor offers in the market were five, covering a full range of scenarios, course features and simulations as discussed previously.

As we plot and compare all WTP values and confidence levels across the modes, we see a slight increase in WTP as we move from online to blended to face-to-face modes, as shown in figure 9 below. This effect is most evident for health and welfare supports and tutoring supports, with more evenly distributed WTP for career counselling across different delivery modes. We note however that all confidence intervals between delivery modes substantially overlap, making differences in WTP here only tentative; future research could investigate whether there is a difference in WTP between modes.

Once again, figure 9 shows a clear significant difference in one-on-one support versus group support within delivery mode for both health and welfare support and tutoring skills. Also, when comparing within the same delivery mode and level of support, tutoring skills differs to both health and welfare support and career counselling, with significantly higher WTP values.

Figure 9   Willingness to pay within support service type (set delivery mode and base price)
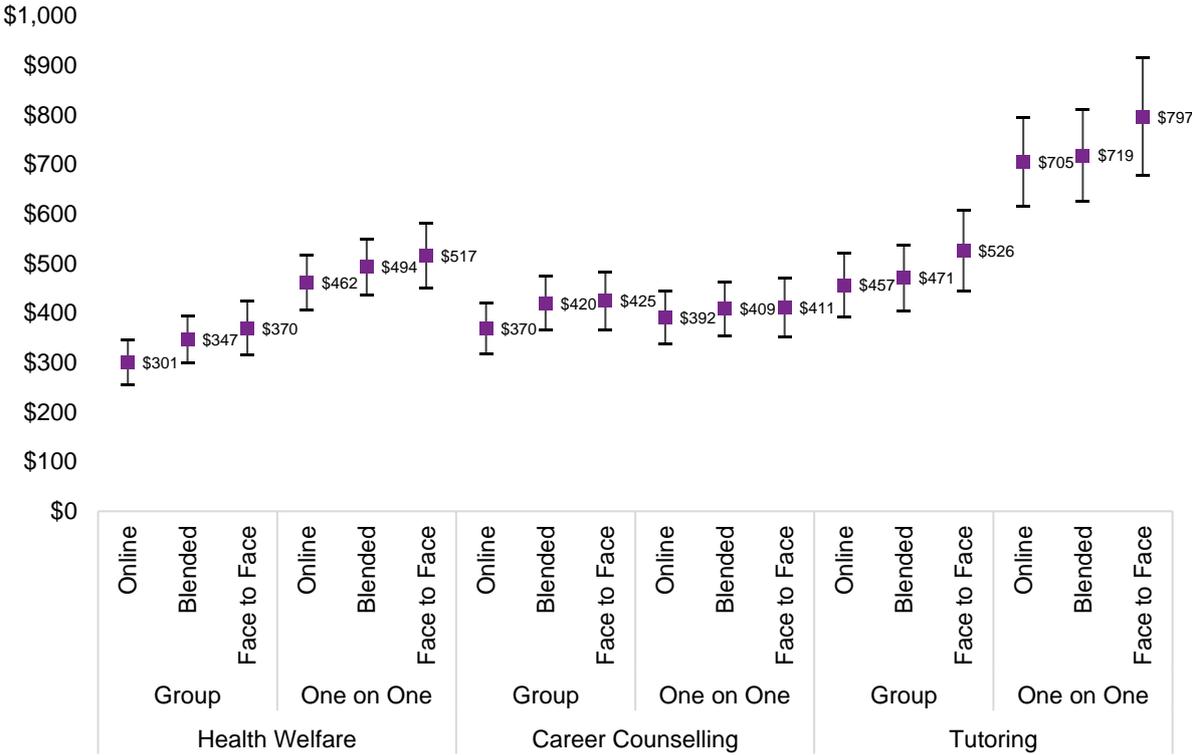
It is worth recalling from the previous generalised analysis, that the online mode attracted a higher WTP, regardless of additional features. This analysis is focusing on WTP within a mode, not the WTP for the course delivery mode overall. All of these values are based on the premise of a base course rate of $1,500, against any range of other courses which may be available out there in any price bracket.

Preferences for student support offerings

To understand how different levels of student support impact preferences across the entire sample, we simulated three scenarios (one for each mode of delivery), each comparing three hypothetical VET programs varying only on the levels of support.

Within each scenario, the three hypothetical course offerings have identical delivery modes, travel times, prices, and other forms of support offerings (i.e., career counselling, tutoring and study skills). This means that the share of preference is only impacted by the support under consideration.

Health and welfare support

Figure 10 below shows the share of preferences for the three scenarios, where options within the scenario progressively increase in their level of health and welfare support provided.

Figure 10 Share of preference by VET delivery mode and level of health & welfare support
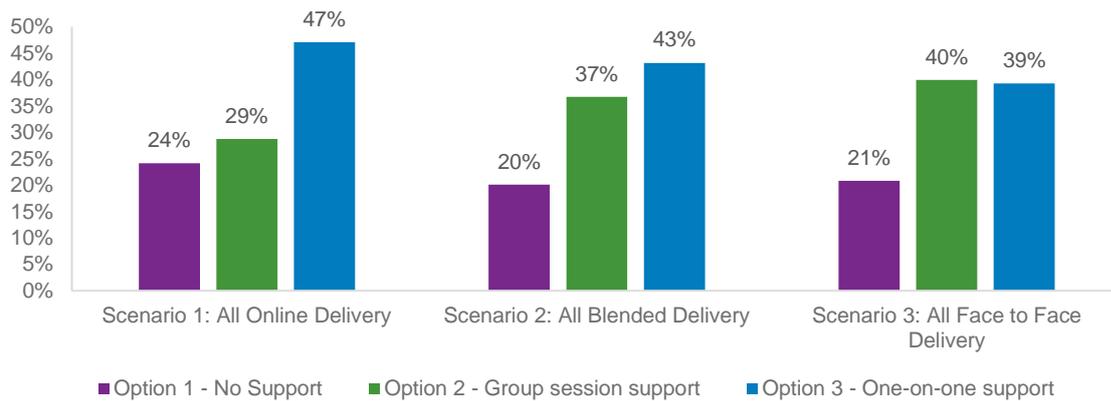
As can be seen, higher levels of support tend to be preferred overall. When courses are offered online, a higher comparative share can be seen for courses offering one-on-one health and welfare support compared with group session offerings or no support provided. On the other hand, when courses are offered face-to-face, group sessions and one-on-one support appear to be approximately equal in their desirability to prospective students. Group sessions show a higher preference in either face-to-face or blended delivery, and no support has a slightly higher preference in the online mode.

Career counselling and job search support

Figure 11 below shows the share of preferences for the three scenarios, where options within the scenario progressively increase in their level of career counselling and job search support provided.

Once again, higher levels of support tend to be preferred overall. When courses are offered online, the share of preference is relatively equal for group sessions and one-on-one career counselling and job search support. In contrast, when courses are offered face-to-face, one-on-one support appears to be preferable to group sessions and no support offerings. The preference for no support in career counselling is higher in blended and face-to face-delivery.

Figure 11 Share of preference by VET delivery mode and level of career counselling & job search support
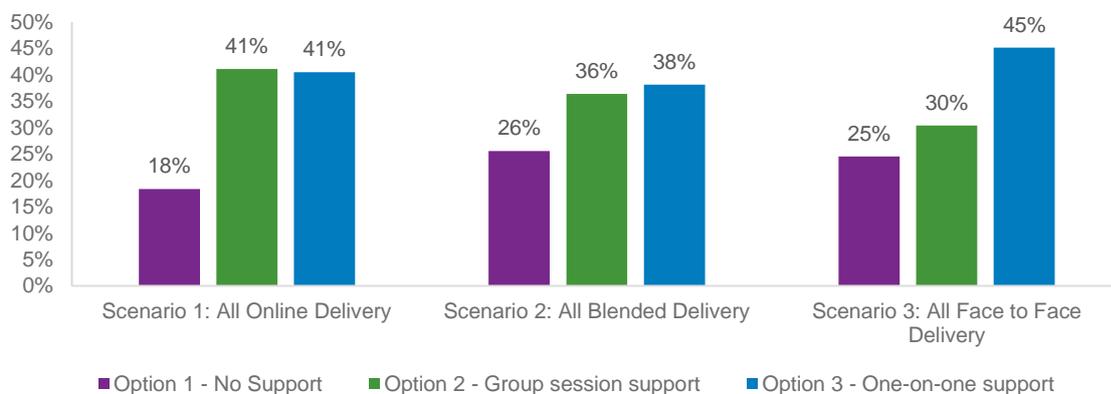
Tutoring and study skills guidance

Figure 12 below shows the share of preferences for the three scenarios, where options within the scenario progressively increase in their level of tutoring and study skills guidance support provided.

Figure 12 Share of preference by VET delivery mode and level of tutoring & study skills guidance
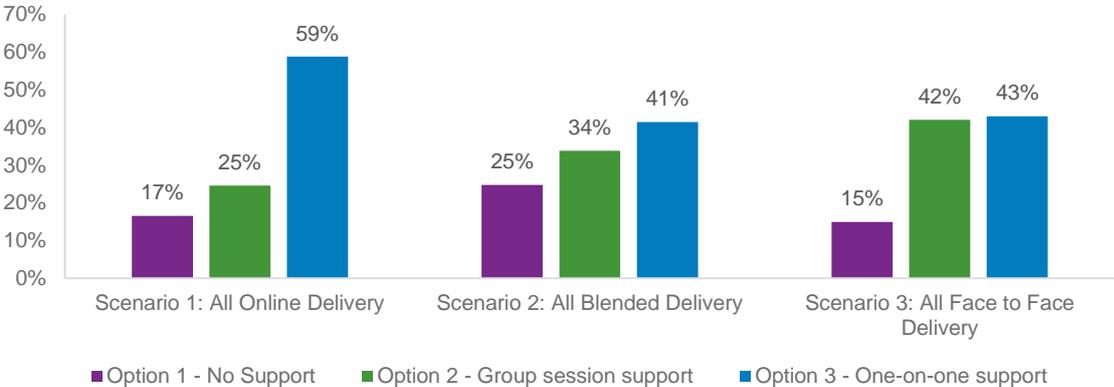
Here, higher levels of support were most noticeably beneficial for courses delivered online. Holding all other attributes fixed, roughly 3 in 5 would choose an online course offering one-on-one tutoring and study skills guidance over otherwise identical courses offering only group sessions or no such support. However, when courses are delivered face-to-face, the share of preference for a course offering group session support was close to equal with a course offering one-on-one support. In the blended mode, there is a considerably higher proportion for no support required. One hypothesis may be that students may feel more supported by a face-to-face component in their blended delivery course.

VET course attributes and demographics

Below, we present importance of each attribute by demographic factors, as well as some indicative findings illustrated with simulations between course offerings.

Note that the importance presented in all plots below have been scaled to sum to 100 within each group, giving a rough estimate of proportionally how important each attribute is for the groups. Standard errors for importance values are plotted using error bars to support informal comparisons between groups.

Regional locations

To determine how attributes of the VET course choices impacted respondents across different geographic areas, we plotted the average importance of each attribute by ARIA classification. The results are shown below in figure 13. Due to small sample sizes, outer regional and remote categories were grouped.

Figure 13 Average importance by ARIA region
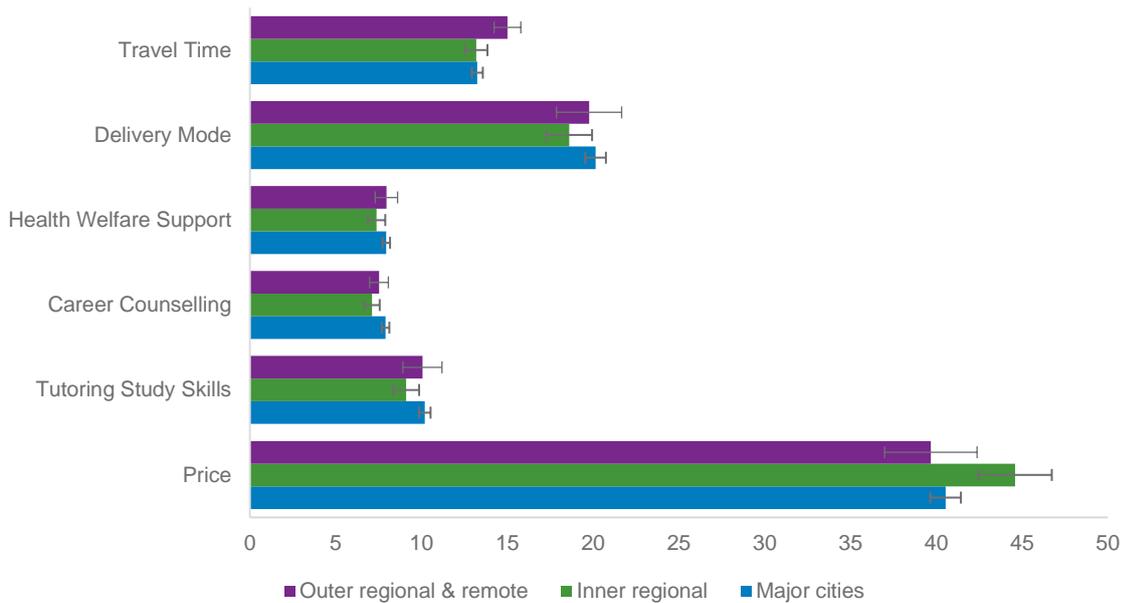
Note: Major cities, n = 508; Inner regional, n = 91; Outer regional & remote, n = 51.

Few clear differences emerged when considering the average importance by ARIA region, with most attributes appearing to be roughly equal. In terms of the support attributes, all three forms of support are less important than the other attributes and there are only minor differences between the different regions.

Compared with those in major cities, respondents in inner regional locations did appear to be slightly more sensitive to price, such that cheaper VET course offerings tended to have a higher share of preference. For example, figure 14 shows the share of preference between four identical online VET course offerings with mid-level group supports available. These courses vary only in fees. As shown, inner regional respondents have a higher probability of selecting the $300 option over more expensive alternatives.

Figure 14 Price sensitivity for inner regional respondents
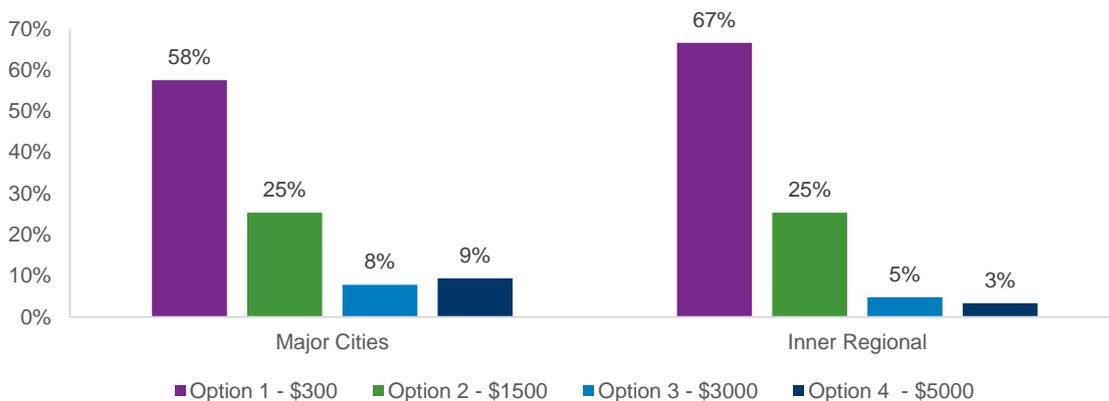
Note: Delivery mode arbitrarily to set to online for all options.

Disabilities

To determine how attributes of the different VET course choices impacted respondents with various forms of disability, we plotted the average importance of each attribute by the disability status of respondents. The results are shown below in figure 15.

Amongst the support options available, tutoring and study skills tended to be prioritised higher by those with mental health-related or physical disability relative to those without, while those with physical disability also found health and welfare supports somewhat more important.

Figure 15 Average importance by disability status

A. Learning-related disability

B. Physical disability

C. Mental health-related disability

D. Disability related to medical condition

■ Identifies with disability   ■ Does not identify with disability
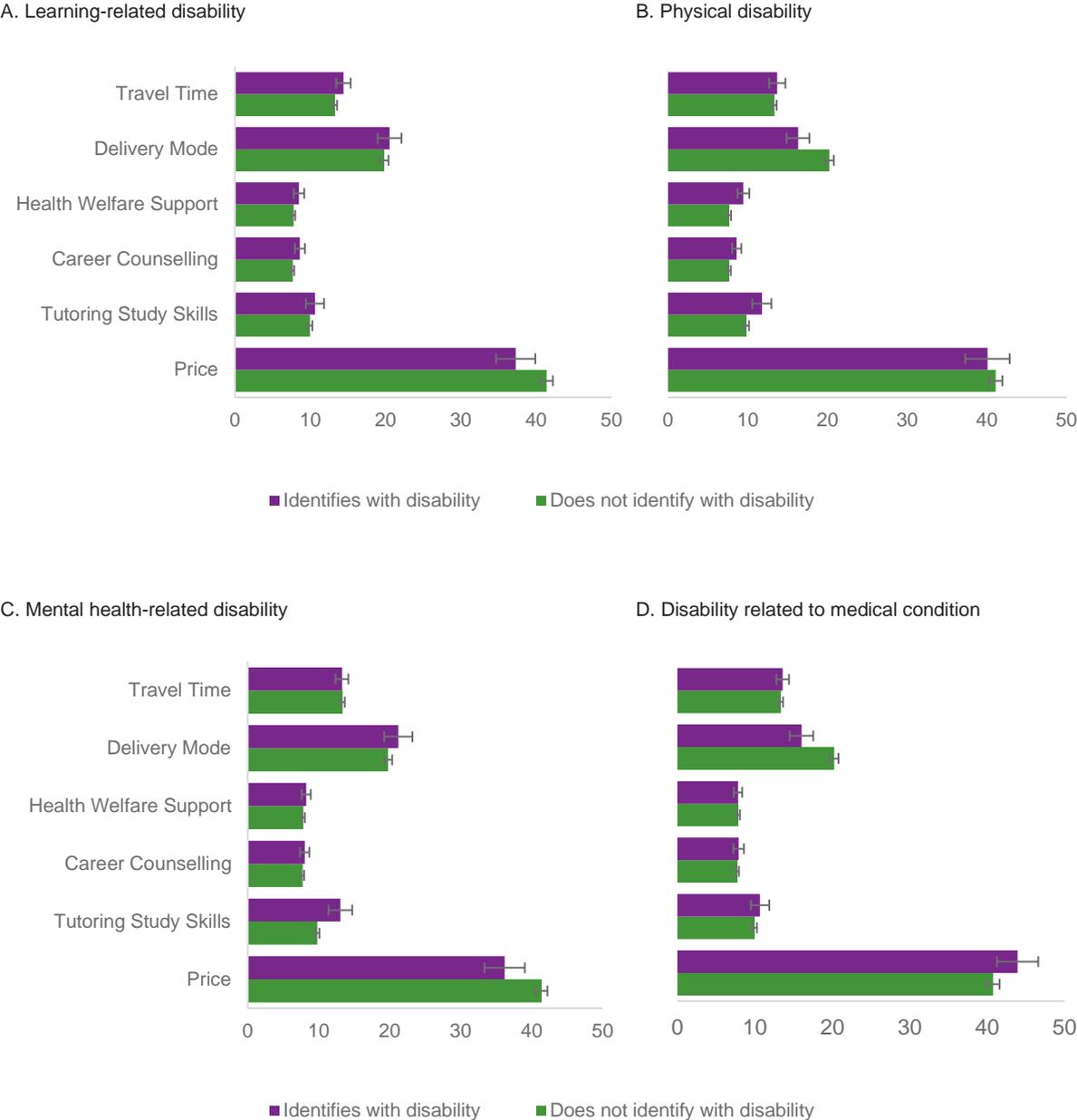
Note: Learning-related disability, n = 57; Physical disability, n = 57; Mental health-related disability, n = 46; Disability related to medical condition, n = 54. Although results are presented separately, respondents may have listed having more than one form of disability.

For example, when comparing two otherwise identical online VET courses individuals with physical disability are more likely (relative to those without) to opt for the option that provides a higher level of health and welfare support, as illustrated in figure 16.

Figure 16 Sensitivity to health & welfare support amongst those with a physical disability

Chart legend:
- Option 1 - No health & welfare support (purple)
- Option 2 - One-on-one personalised health & welfare support (green)

Identifies as having physical disability: 26%, 74%
Does not identify as having physical disability: 34%, 66%
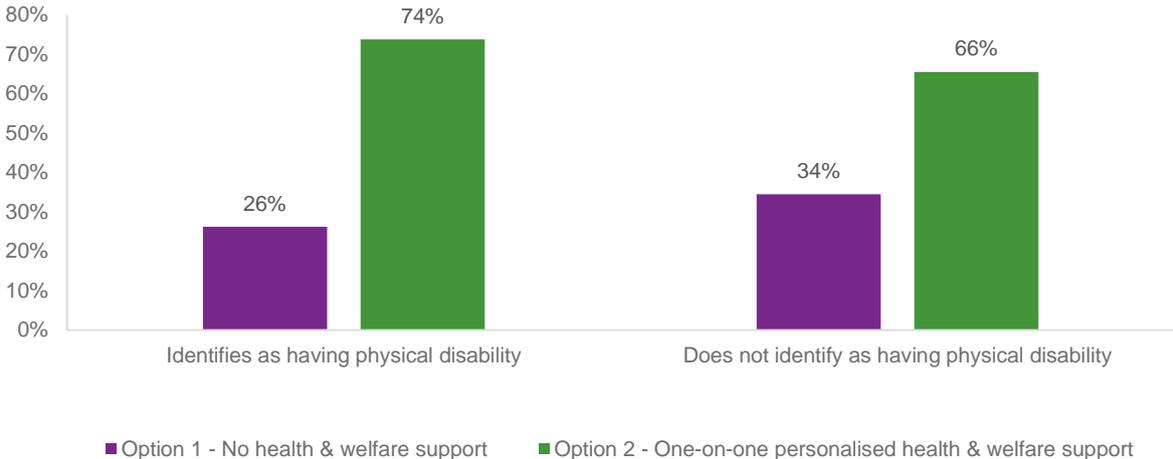
Note: Delivery mode arbitrarily to set to online for both options.

Notably, career counselling support options tended to be equally important to individuals with and without any given form of disability, indicating that the two other forms of support incorporated into this DCE have a higher relative impact on VET course choices made.

Education

To determine how education influenced VET course choices, we plotted the average importance of each attribute by educational attainment. The results are shown below in figure 17.

Figure 17 Average importance by educational attainment

Chart legend:
- VET (purple)
- Higher education (green)
- School leaver (blue)
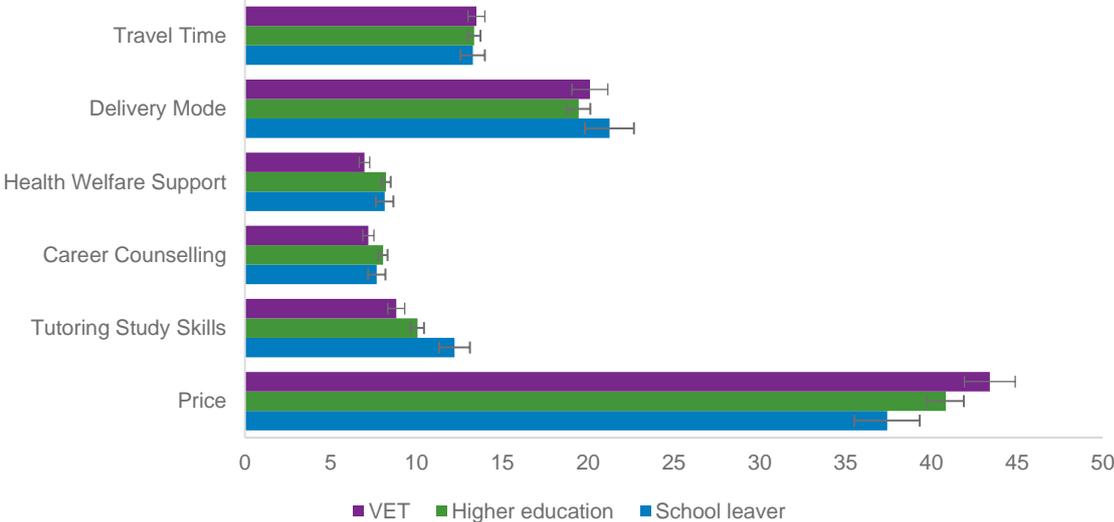
Note: School leaver, n = 96; VET, n = 179; Higher education, n = 375.

From the support options available, tutoring and study skills showed the most substantial differences between education attainment levels. Respondents with lower levels of educational attainment tended to prioritise higher levels of tutoring and study skills. To illustrate, the share of preferences for a scenario involving a choice between three otherwise identical VET courses but with increasing tutoring and study skills support is shown by educational attainment below in figure 18.

Figure 18 Tutoring and study skills sensitivity by educational attainment

Option 1 - No tutoring & study skills offered
Option 2 - Group tutoring and study skills offered
Option 3 - Personalised one-on-one study skills offered
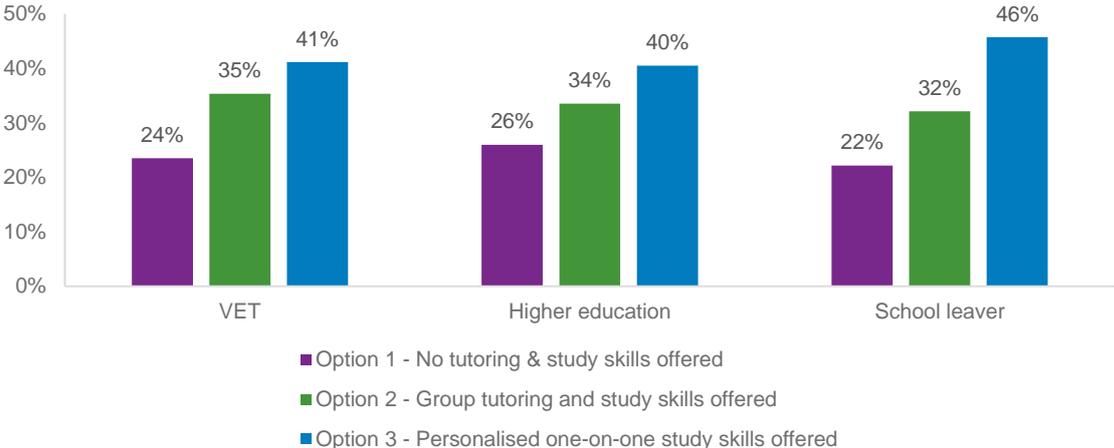
Note: Delivery mode arbitrarily to set to blended for all options.

Young people

To determine how age influenced VET course choices, we split age into two categories representing younger individuals (24 years and younger) and older individuals (25 years and above). We then plotted the average importance of each attribute, as shown below in figure 19.

Age threshold sensitivity analyses can be found in appendix a.

Figure 19 Average importance by younger and older individuals

Age ≥ 25   Age ≤ 24
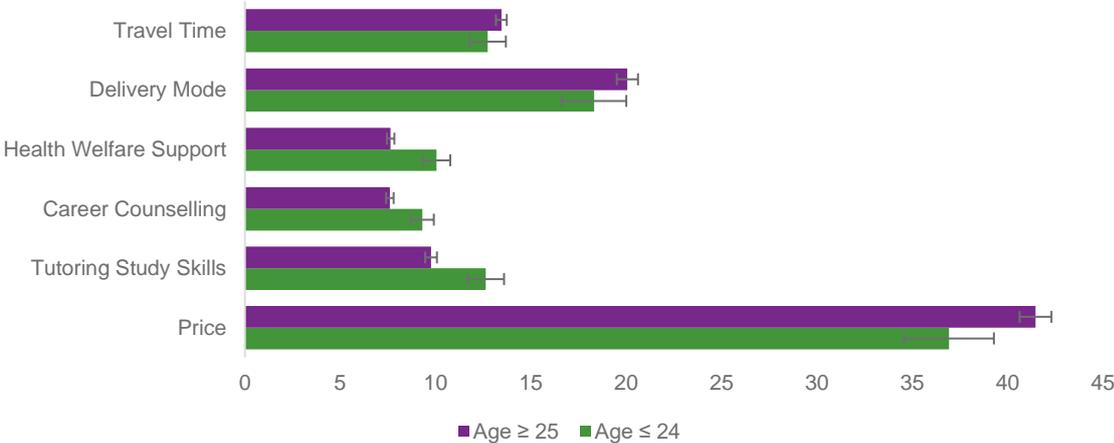
Note: Age ≤ 24, n = 61; Age ≥ 25, n = 589.

Overall, younger people placed higher levels of importance on supports. Simulating various hypothetical VET courses with increasingly comprehensive health and welfare support, career counselling, and tutoring and study skills showed that the share of preference increased at a higher rate amongst younger people for options with higher levels of support, as compared with older people. At times, group-level supports were sufficient for this young cohort. For example, the shares of preference for several different VET course options by age is shown below in figure 20.

Figure 20 Sensitivity to career counselling and job search supports by age cohort
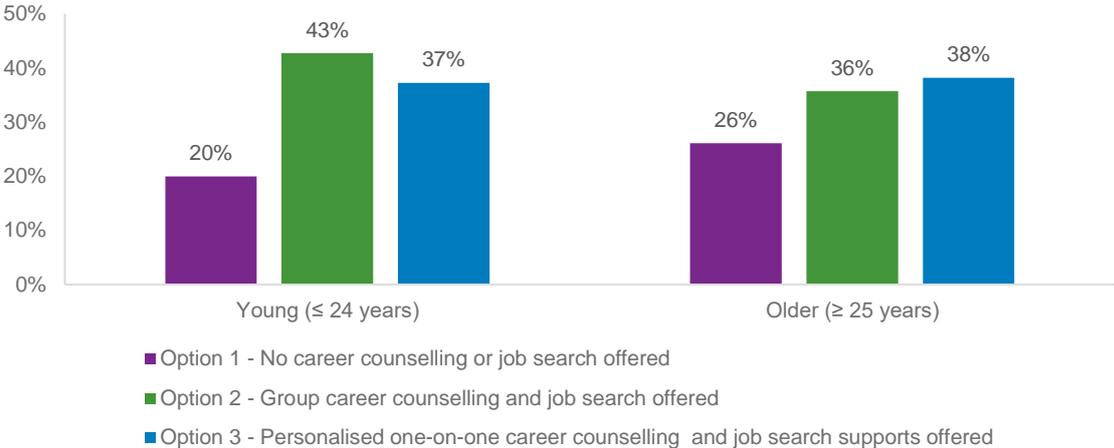
Note: Delivery mode arbitrarily to set to blended for all options.

Employment status

To determine how employment status shaped respondents' VET course choices, we categorised individuals into five groups – those employed full-time or part-time, those unemployed and looking for work, those studying part-time or full-time, those unable to work due to sickness or disability, and a carer/other category capturing homemakers, carers, and retirees. We then plotted the average importance of each attribute amongst these groups, as shown below in figure 21.

Figure 21 Average importance by employment type
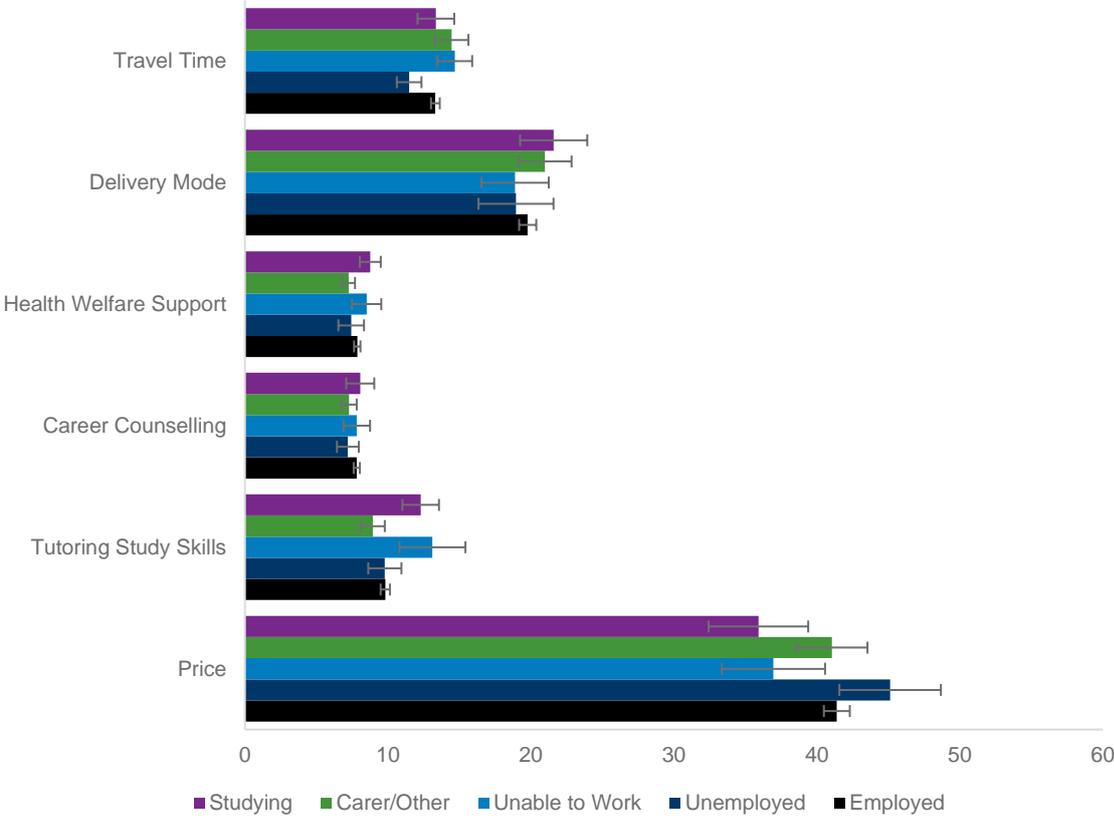
Note: Employed, n = 500; Unemployed, n = 32; Unable to work, n = 29; Carer/other, n = 52; Studying, n =37

The importance placed on both health and welfare support, as well as career counselling and job search support tended to be approximately equal between these employment groups, with no clear distinctions in how employment shaped the influence of these supports. However, individuals currently studying or unable to work appeared to place higher importance in tutoring and studying skills overall, as illustrated below in figure 22.

Interestingly, no clear pattern of preference for greater degrees of career counselling and job search support were observed amongst individuals currently unemployed. Although we may have expected this group to find this form of support more attractive in a VET course offering, it is possible that amongst our sample this group were not actively seeking employment, and therefore were not particularly responsive to this attribute.

Figure 22 Sensitivity to tutoring and study skills by employment group
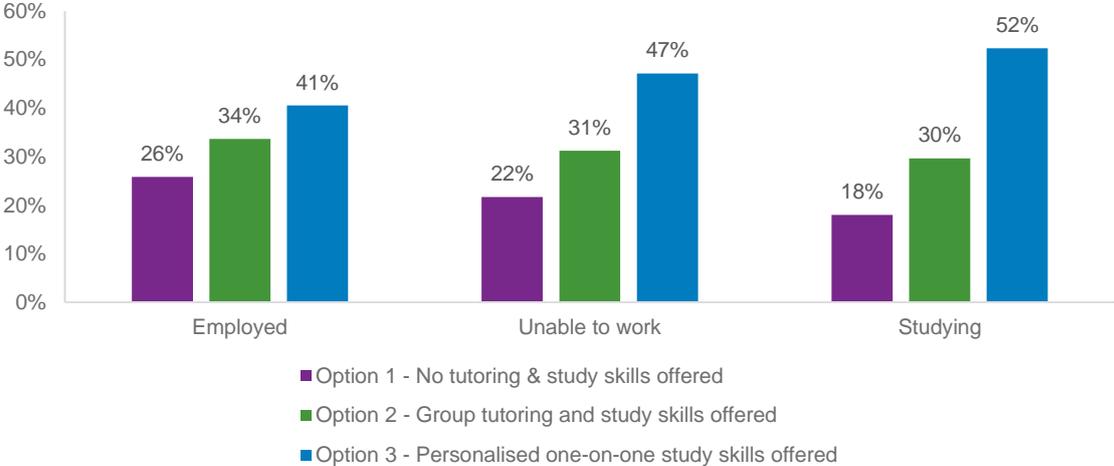
Note: Delivery mode arbitrarily to set to blended for all options.

Language other than English spoken at home

To determine how languages other than English spoken at home influenced VET course choices, we plotted the average importance of each attribute by those who speak English and those who speak another language, as shown below in figure 23.

Figure 23 Average importance by language spoken at home
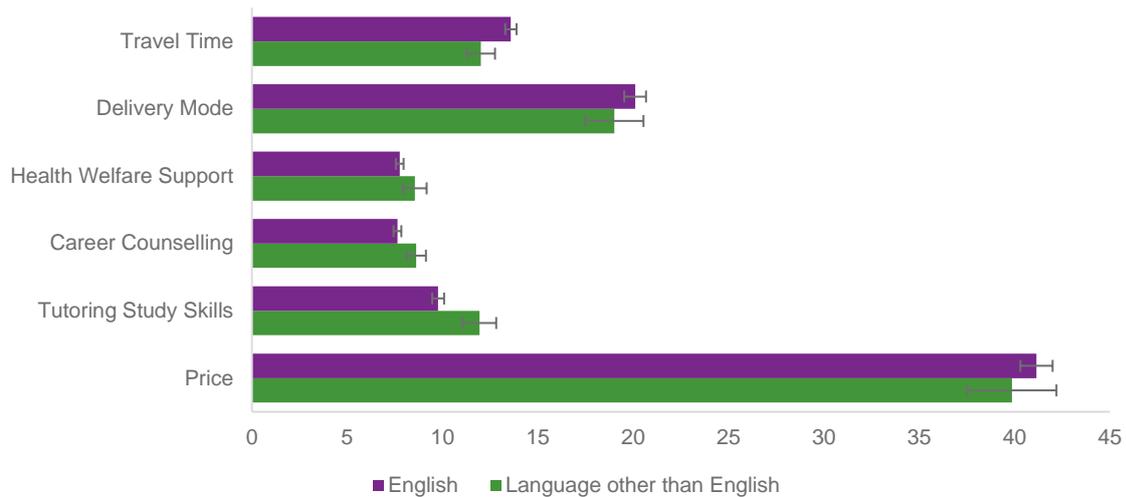
Note: English, n = 557; Language other than English, n = 84; No answer provided; Prefer not to say, n = 9 (not shown).

All supports showed a slightly higher degree of importance amongst those who speak a language other than English at home, although this was most noticeable for tutoring and study skills guidance. Respondents who spoke a language other than English at home tended to prefer courses offering any tutoring and study skills support (relative to those who spoke English at home), and particularly personalised supports when the delivery mode was blended, as shown below in figure 24.

Figure 24 Sensitivity to tutoring and study skills support amongst those speaking a language other than English at home
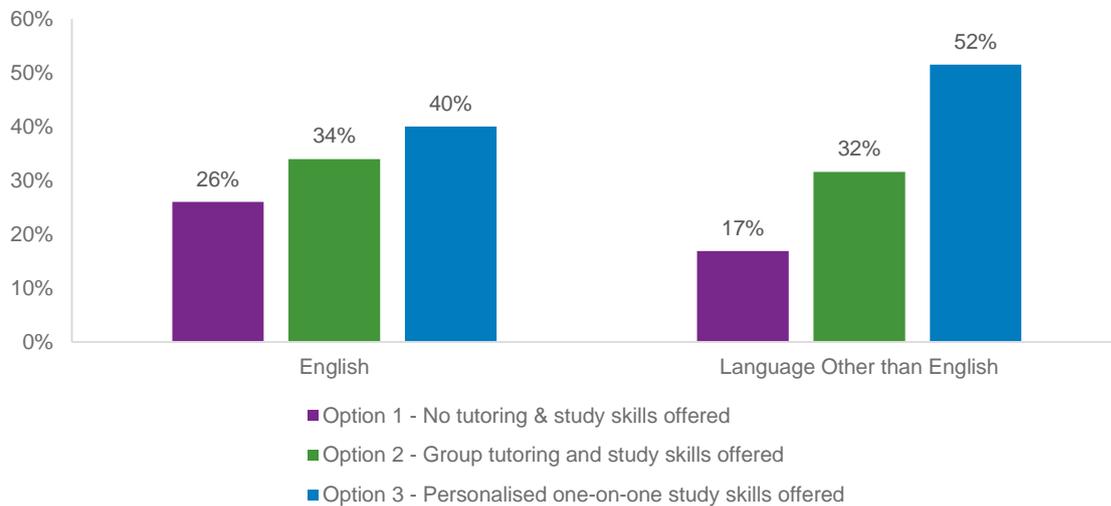
Note: Delivery mode arbitrarily to set to blended for all options.

Aboriginal and/or Torres Strait Islander identifying

To determine how Aboriginal and/or Torres Strait Islander identities influenced preferences in VET course options, we plotted the average importance of each attribute below in figure 25.

Figure 25 Average importance by Aboriginal and/or Torres Strait Islander identities
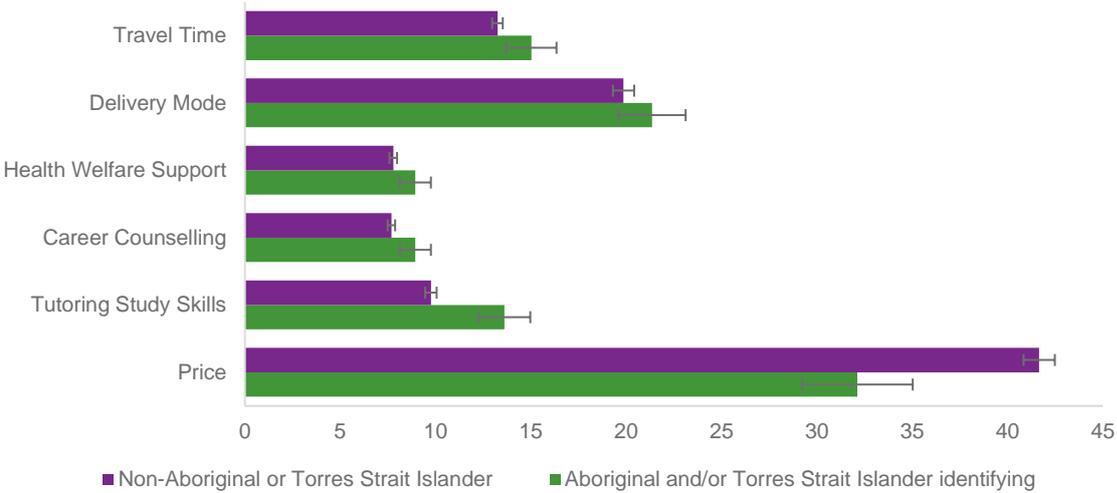
Note: Aboriginal and/or Torres Strait Islander identifying, n = 41; Non-Aboriginal or Torres Strait Islander, n = 602; Prefer not to say, n = 7 (not shown).

There was some preference amongst individuals from an Aboriginal and/or Torres Strait Islander background towards VET course offerings with higher levels of support, particularly for tutoring and study skills. Across various simulations, group level supports (rather than more personalised one-on-one) often appeared to receive a higher share of preference from this group, relative to non-Aboriginal or Torres Strait Islander respondents. An example of this is shown below in figure 26.

Figure 26 Sensitivity to tutoring and study skills support amongst Aboriginal and/or Torres Strait Islander identities
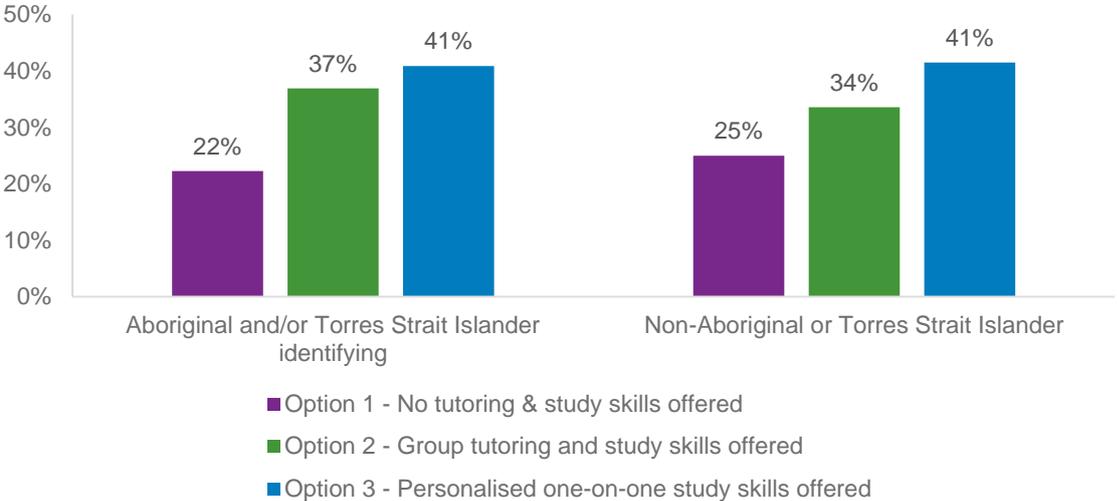
Note: Delivery mode arbitrarily to set to blended for all options.

Additional characteristics shaping VET course choice

Respondents were additionally asked to rate nine different characteristics of a VET course in terms of their importance in choosing a training provider. These additional questions were not built into the DCE, but rather formed an additional assessment of possible influences on student VET course choices. Respondents rated each characteristic using a scale from 0 to 10, where 0 represented 'not at all important' and 10 'extremely important'.

The mean importance rating with associated standard errors is presented below in figure 27 for the entire sample.

Figure 27 Average importance rating on nine VET course provider characteristics

Note: Results from full sample, n = 650.

Overall, the quality of teachers and flexibility in timetables were the most important in deciding on a VET course, relative to the other characteristics listed. Availability of full-time and part-time options, as well as reputational factors (both of the course and training organisation) were roughly equally important.

Results for demographic groups

Presented below are the results on mean importance for these additional characteristics by seven different demographic variables.

Regional locations

Table 7   Mean importance on nine VET course provider characteristics for regional locations

Code	Statement	Mean Importance (SE)		
		Major Cities of Australia	Inner Regional Australia	Outer Regional Australia
Q9.1	Views of friends or family who have attended the training organisation	6.8 (0.11)	6.5 (0.3)	6.3 (0.43)
Q9.2	Reputation of the training organisation	8.2 (0.07)	8.7 (0.16)	8.5 (0.21)
Q9.3	Success rate of students at the training organisation translating their course into a job	8.1 (0.08)	8.3 (0.2)	7.8 (0.28)
Q9.4	Availability of both full-time and part-time training options	8.3 (0.08)	8.5 (0.18)	8 (0.37)
Q9.5	Information provided on the training organisation website	8 (0.08)	8.5 (0.16)	8.3 (0.24)
Q9.6	Facilities available at/provided by the training organisation	7.8 (0.08)	7.7 (0.2)	7.7 (0.3)
Q9.7	Quality of the teachers	8.5 (0.07)	8.9 (0.14)	8.6 (0.22)
Q9.8	Reputation of the course	8.2 (0.07)	8.5 (0.17)	8.4 (0.23)
Q9.9	Timetable matches my needs	8.5 (0.07)	8.6 (0.2)	8.9 (0.21)
	n =	508	91	51

Disabilities

Table 8   Mean importance on nine VET course provider characteristics for disabilities

Code	Statement	Mean Importance (SE)				
		None	Learning-related disability	Physical disability	Mental health-related disability	Medical condition
Q9.1	Views of friends or family who have attended the training organisation	6.8 (0.12)	6.9 (0.33)	6.9 (0.36)	6.2 (0.42)	6.5 (0.33)
Q9.2	Reputation of the training organisation	8.2 (0.07)	8.4 (0.24)	8.7 (0.21)	8.4 (0.24)	8.6 (0.2)
Q9.3	Success rate of students at the training organisation translating their course into a job	8.1 (0.08)	8.2 (0.23)	8.3 (0.24)	8.2 (0.28)	8.4 (0.22)
Q9.4	Availability of both full-time and part-time training options	8.3 (0.08)	8.2 (0.25)	8.7 (0.2)	8.6 (0.23)	8.6 (0.2)
Q9.5	Information provided on the training organisation website	8.1 (0.08)	8.2 (0.21)	8.4 (0.26)	8.5 (0.22)	8.3 (0.22)
Q9.6	Facilities available at/provided by the training organisation	7.8 (0.08)	7.5 (0.35)	8.3 (0.23)	7.6 (0.38)	7.9 (0.25)
Q9.7	Quality of the teachers	8.5 (0.07)	8.3 (0.24)	8.7 (0.21)	8.7 (0.21)	8.9 (0.16)
Q9.8	Reputation of the course	8.2 (0.07)	8.4 (0.23)	8.6 (0.23)	8.5 (0.27)	8.5 (0.21)
Q9.9	Timetable matches my needs	8.5 (0.07)	8.5 (0.2)	8.8 (0.22)	8.4 (0.28)	9 (0.16)
	n =	507	57	57	46	54

Education

Table 9   Mean importance on nine VET course provider characteristics for education

Code	Statement	Mean Importance (SE)		
		School leaver	VET	Higher Education
Q9.1	Views of friends or family who have attended the training organisation	6.4 (0.3)	6.8 (0.2)	6.8 (0.13)
Q9.2	Reputation of the training organisation	8.2 (0.18)	8.3 (0.12)	8.3 (0.08)
Q9.3	Success rate of students at the training organisation translating their course into a job	8.1 (0.18)	8.1 (0.14)	8.1 (0.09)
Q9.4	Availability of both full-time and part-time training options	8.1 (0.2)	8.5 (0.15)	8.3 (0.09)
Q9.5	Information provided on the training organisation website	8.1 (0.2)	8.2 (0.13)	8.1 (0.09)
Q9.6	Facilities available at/provided by the training organisation	7.7 (0.21)	7.7 (0.15)	7.8 (0.09)
Q9.7	Quality of the teachers	8.5 (0.16)	8.6 (0.11)	8.5 (0.08)
Q9.8	Reputation of the course	8.3 (0.17)	8.4 (0.12)	8.2 (0.09)
Q9.9	Timetable matches my needs	8.5 (0.17)	8.6 (0.13)	8.5 (0.08)
	N =	96	179	375

Young people

Table 10   Mean importance on nine VET course provider characteristics for young people

Code	Statement	Mean Importance (SE)	
		Age ≤ 24	Age ≥ 25
Q9.1	Views of friends or family who have attended the training organisation	6.8 (0.28)	6.7 (0.11)
Q9.2	Reputation of the training organisation	7.5 (0.27)	8.4 (0.06)
Q9.3	Success rate of students at the training organisation translating their course into a job	7.5 (0.24)	8.2 (0.07)
Q9.4	Availability of both full-time and part-time training options	7.2 (0.27)	8.4 (0.07)
Q9.5	Information provided on the training organisation website	7.2 (0.3)	8.2 (0.07)
Q9.6	Facilities available at/provided by the training organisation	7.4 (0.24)	7.8 (0.08)
Q9.7	Quality of the teachers	8.1 (0.23)	8.6 (0.06)
Q9.8	Reputation of the course	7.9 (0.24)	8.3 (0.07)
Q9.9	Timetable matches my needs	7.8 (0.28)	8.6 (0.06)
	n =	61	589

Employment status

Table 11   Mean importance on nine VET course provider characteristics for employment status

Statement	Mean Importance (SE)				
	Employed	Unable to Work	Unemployed	Studying	Carer/Other
Views of friends or family who have attended the training organisation	6.8 (0.12)	5.7 (0.52)	7.2 (0.47)	6.9 (0.41)	5.9 (0.41)
Reputation of the training organisation	8.3 (0.07)	8.5 (0.29)	8.6 (0.28)	8.2 (0.25)	8.2 (0.25)
Success rate of students at the training organisation translating their course into a job	8 (0.08)	8.2 (0.33)	8.7 (0.25)	8.2 (0.3)	8.3 (0.21)
Availability of both full-time and part-time training options	8.3 (0.08)	8.7 (0.28)	9.1 (0.25)	7.7 (0.4)	8.5 (0.25)
Information provided on the training organisation website	8.1 (0.08)	8.6 (0.29)	8.5 (0.29)	7.8 (0.37)	8.2 (0.25)
Facilities available at/provided by the training organisation	7.8 (0.08)	7.8 (0.47)	8.1 (0.3)	7.5 (0.38)	7.9 (0.2)
Quality of the teachers	8.5 (0.07)	8.9 (0.3)	8.8 (0.26)	8.6 (0.27)	9.1 (0.13)
Reputation of the course	8.3 (0.07)	8.1 (0.36)	9 (0.24)	8.1 (0.27)	8.3 (0.25)
Timetable matches my needs	8.5 (0.07)	9 (0.22)	9 (0.22)	8.4 (0.25)	8.8 (0.25)
n =	500	29	32	37	52

Languages other than English

Table 12   Mean importance on nine VET course provider characteristics for languages other than English

Code	Statement	Mean Importance (SE)	
		Language other than English	English
Q9.1	Views of friends or family who have attended the training organisation	7.2 (0.27)	6.7 (0.11)
Q9.2	Reputation of the training organisation	8.3 (0.17)	8.3 (0.07)
Q9.3	Success rate of students at the training organisation translating their course into a job	8.2 (0.19)	8.1 (0.08)
Q9.4	Availability of both full-time and part-time training options	8.3 (0.19)	8.3 (0.08)
Q9.5	Information provided on the training organisation website	8 (0.2)	8.1 (0.07)
Q9.6	Facilities available at/provided by the training organisation	8.1 (0.18)	7.7 (0.08)
Q9.7	Quality of the teachers	8.7 (0.15)	8.5 (0.07)
Q9.8	Reputation of the course	8.5 (0.17)	8.3 (0.07)
Q9.9	Timetable matches my needs	8.7 (0.15)	8.5 (0.07)
	n =	84	557

Aboriginal and/or Torres Strait Islander identifying

Table 13   Mean importance on nine VET course provider characteristics for Aboriginal and/or Torres Strait Islander identities

Code	Statement	Mean Importance (SE)	
		Aboriginal and/or Torres Strait Islander identifying	Non-Aboriginal and/or Torres Strait Islander
Q9.1	Views of friends or family who have attended the training organisation	7.4 (0.37)	6.7 (0.11)
Q9.2	Reputation of the training organisation	8.6 (0.21)	8.3 (0.07)
Q9.3	Success rate of students at the training organisation translating their course into a job	8.2 (0.27)	8.1 (0.07)
Q9.4	Availability of both full-time and part-time training options	8.5 (0.22)	8.3 (0.08)
Q9.5	Information provided on the training organisation website	8.1 (0.23)	8.1 (0.07)
Q9.6	Facilities available at/provided by the training organisation	8 (0.26)	7.8 (0.08)
Q9.7	Quality of the teachers	8.4 (0.22)	8.6 (0.06)
Q9.8	Reputation of the course	8.5 (0.24)	8.3 (0.07)
Q9.9	Timetable matches my needs	8.3 (0.28)	8.6 (0.07)
	n =	41	602

Appendix A – Age threshold sensitivity analyses

We surveyed individuals across a range of different ages. We took particular interest in younger individuals closer to school-leaving age, somewhat arbitrarily defined as 24 years or younger, because we hypothesised that their choices in VET providers may differ relative to older individuals who may have different needs and priorities having spent longer in the workforce. The age of 24 was also chosen as a reasonable split ensuring sufficient sample size to compare between distinct older and younger cohorts.

However, because age is a continuous variable, we sought to determine whether this threshold impacted the results and better understand how the importance of different course attributes varied across different age profiles. We examined individual importance data and simulated shares across various different scenarios for each individual. We then plotted the results by age, using a Loess smoothing curve[5] to capture how importance scores and shares of preference shifted. This allows us to see more detailed patterns and ensure the results reported are robust. We present our findings below.

Consistent with our reporting using a 24-year age split, we found that price steadily increased in importance with age as a predictor of VET course choice. Delivery mode appeared to peak slightly towards middle age. All forms of support, but especially tutoring and study skills, tended to have higher importance scores amongst younger individuals (see figure A1).

Figure A1 Average importance by age

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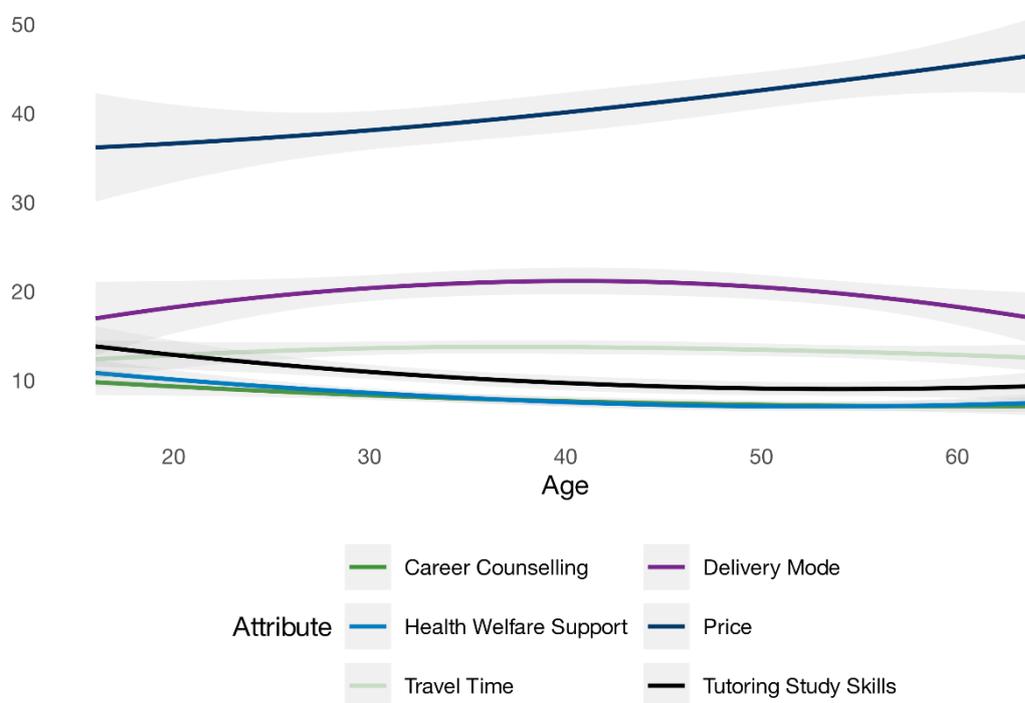
5 Loess (Locally Estimated Scatterplot Smoothing) is a non-parametric regression method that fits a smooth curve through scatterplot data points. The Loess procedure works by dividing the x-coordinate (here, the numeric age) into small subsets, estimating the trend in each subset, and then fitting a curve through the estimated trend points to produce a smoothed line. The size (or 'span') of the subsets determines the smoothness of the curve; we chose a span of size 2.

Although any form of support was preferred to none across all ages, more intensive support became especially attractive at the ends of our age ranges (i.e., amongst younger and older people). When examining differences in simulated choices between three different choices increasing in the level of career counselling and job search support, we found that group and personalised options were strongly favoured over none for younger individuals, but this effect diminished somewhat as people approached middle age. Towards older age, there was a higher preference for personalised supports, rather than group ones (see figure A2). This pattern of results matches our findings in the report.

Figure A2 Share of preference for career counselling options by age

Type
- Option 1 - No career counselling or job search offered
- Option 2 - Group career counselling and job search offered
- Option 3 - Personalised one-on-one career counselling and job search supports offered
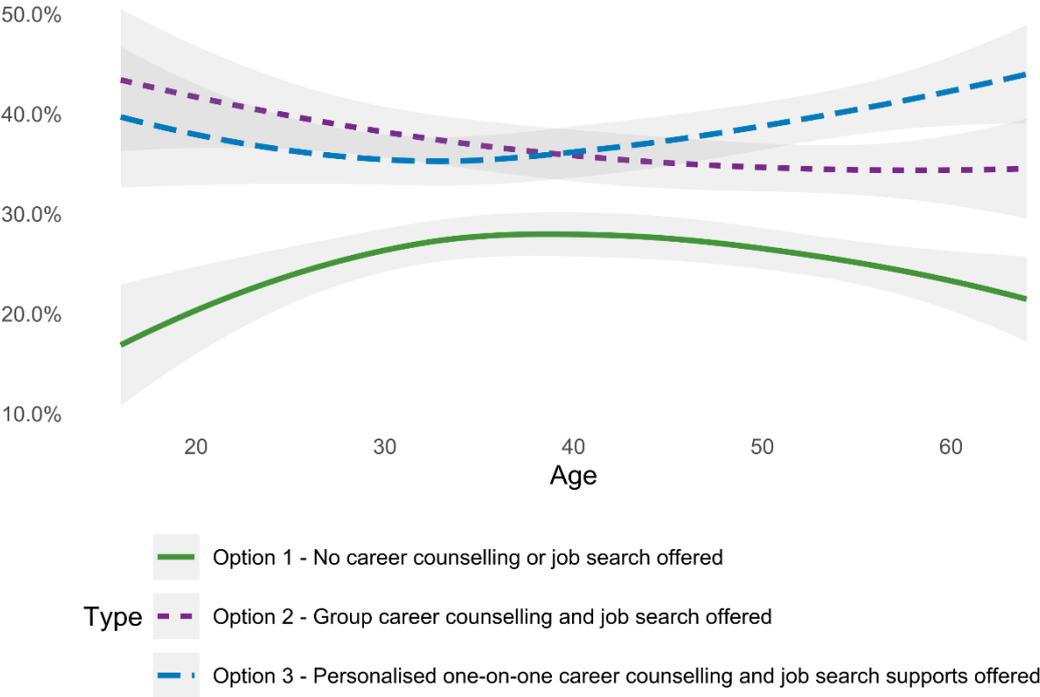
We next examined simulated shares of preference for tutoring and study skills. The share of preferences for each level of support was consistent across all age groups, with increasing levels attracting a higher share of preference. Having no tutoring and study skills support on offer was clearly less attractive for younger people however, and the share of preference for personalised approaches closer to school-leaver age was quite high, mirroring our findings from the report (see figure A3).

Figure A3 Share of preference for tutoring and study skills options by age

Type
— Option 1 - No tutoring & study skills offered
-- Option 2 - Group tutoring & study skills offered
-- Option 3 - Personalised one-on-one tutoring & study skills offered
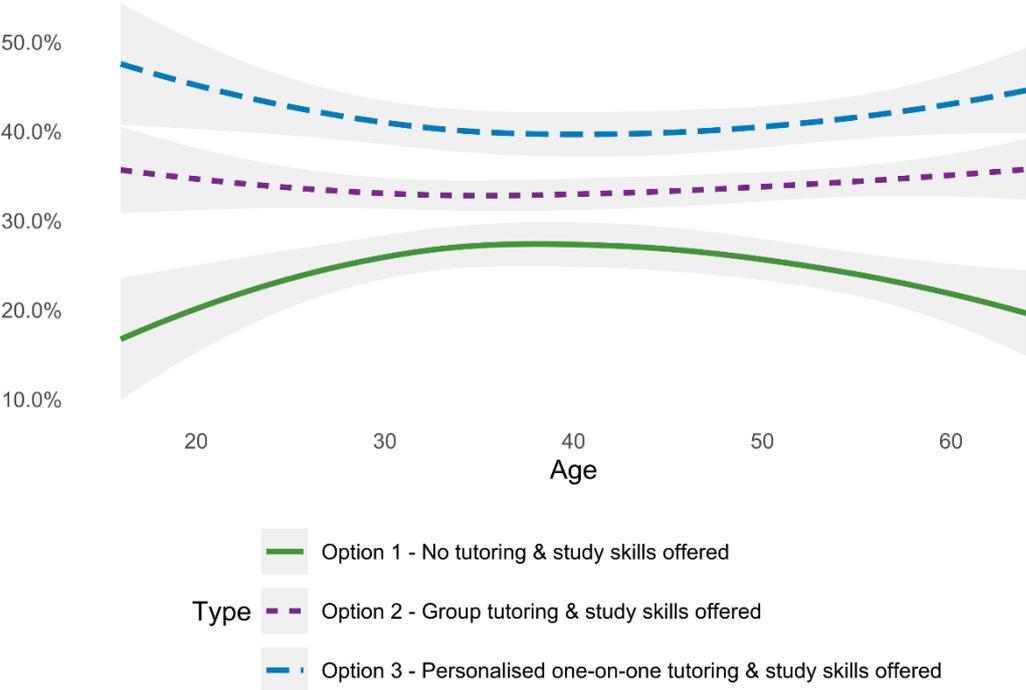
Finally, we examined differences in simulated shares of preference for health and welfare support across different ages. At all points, having no support was less desirable than options providing support, but there was some tentative evidence that middle-aged individuals had a stronger preference for personalised one-on-one welfare support, relative to older and younger people. This effect is somewhat uncertain however and should be interpreted with caution, as there was substantial variability in estimated share of preference for group supports amongst younger people (see figure A4).

Figure A4 Share of preference for health and welfare support options by age

Type
— Option 1 - No health & welfare support offered
-- Option 2 - Group health & welfare support offered
-- Option 3 - Personalised one-on-one health & welfare support offered