



Department
for Education

The cadet experience: understanding cadet outcomes

Research report

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The Ecorys researchers undertaking the case study fieldwork included James Whitley, Martina Diep and Sophie Bratt. The cadet survey was scripted and administered by Duleepa Panadura-acharige. Anja Meierkord led on the design and implementation of the quantitative survey data analysis, including the Propensity Score Matching, with support from Facundo Herrera and Laura Kirchner-Sala. Rachel Gardner (formerly of Ecorys) oversaw the scoping phase. Susan Purdon of Bryson Purdon Social Research (BPSR) acted in an expert advisory capacity in the design and implementation of the survey data matching and analysis.

Glossary

ACF – Army Cadet Force

ATC – Air Training Corps

BME - Black and Minority Ethnic

BTEC – Business and Technology Education Council

CBF – Cadet Bursary Fund

CC – Contingent Commander

CCF – Combined Cadet Force

CEP – Cadet Expansion Programme

CFAV – Cadet Force Adult Volunteer

DfE – Department for Education

FSM – Free School Meals

LSYPE – Longitudinal Survey of Young People in England

MoD – Ministry of Defence

MSSC – Marine Society & Sea Cadets

NPD – National Pupil Database

PSM – Propensity Score Matching

RAF - Royal Air Force

RFCA - Reserve Forces and Cadets Associations

SCEO – School Cadet Expansion Officer

SEN - Special Educational Needs

Services – Single Services

SSI – School Staff Instructor

Executive Summary

In October 2014, Ecorys was appointed by the Department for Education (DfE) to conduct a research project entitled: *The Cadet Experience: Understanding Cadet Outcomes*. The project aimed to better understand how being a cadet affects young people's educational outcomes, and to demonstrate the benefits and challenges of Combined Cadet Force (CCF) units within state funded schools. It also aimed to establish how Cadet Expansion Programme (CEP) cadet outcomes and other characteristics such as resilience, confidence and self-esteem compare with other young people who are not cadets.

Methodology

This report presents the findings from two work phases carried out between November 2014 and June 2015 and the analysis of matched administrative data during the spring of 2016 comprising of:

- qualitative case study visits with a sample of nine CEP schools;
- a cadet survey administered with 348 young people in 55 CEP schools across England;
- a comparison of cadet characteristics from the survey with a matched sample of young people from the Longitudinal Study of Young People in England (LYSPE); and
- a comparison of cadet educational outcomes (attainment, absences, fixed-term exclusions, permanent exclusions) using Ministry of Defence (MoD) and Marine Society & Sea Cadets (MSSC) databases with a matched sample of young people from the National Pupil Database (NPD).

The research allows for a comparison of cadet's characteristics with young people from the school age population. However, care should be taken to avoid causal inferences regarding the effects of cadet participation on the reported outcomes. The research literature quite strongly suggests that the motivations leading young people to join uniformed groups are potentially significant in predicting their outcomes.

Key findings

Matched comparison analysis

The matched comparison analysis used historical data from MoD and MSSC databases of cadets who achieved Key Stage 4 (KS4) results between 2009-2014. This means that the included population is much larger than just CEP schools and may in effect not include any CEP cadets.

Demographic profile of cadets

- There are large differences between the different Cadet Forces. Royal Air Force (RAF) cadets are slightly more ethnically and linguistically diverse than other service sections (in particular through having larger shares of cadets with Asian background). RAF cadets are also less likely to be from a low socio-economic background than cadets in the other Cadet Forces and display the highest academic performance at Key Stage 2 compared to all other service sections, but also non-cadets.
- By contrast, out of all the Cadet Forces Army cadets are most likely to come from a background of socio-economic disadvantage. They also do less well academically than the non-cadets at Key Stage 2 and feature higher shares of young people with special educational needs.

Impact of cadet membership on educational outcomes

- There are significant differences between the different service sections. Significantly larger shares (69%) of RAF Cadets achieve high GCSE results compared to their matched comparison group (55-58%) as well as displaying lower shares of low attendance 3.7% compared to 6.9%-8.2%) and occurrence of fixed-term exclusions (3.2% compared to 4.0-5.7%).
- By contrast, Army Cadets and Sea Cadets¹ achieve relatively low shares of 5 A*-C GCSE results (44%), which are not significantly different to outcomes achieved by the matched comparison group. This implies that being a cadet member in those service sections did not affect young people's educational attainment at Key Stage 4 – either positively or negatively.
- One explanation for this pattern could be the fact that the RAF Cadet Force is recruiting those young people who are more able academically, as indicated by the higher achievement of Cadets at Key Stage 2. Indeed there is some evidence that the RAF Cadet Force is perceived to be more academically orientated than other service sections. RAF Cadets study an aviation focused academic syllabus and begin a BTEC in Aviation Studies as part of their training.
- However, it is likely that some unobserved differences between groups still remain, in particular with regards to the motivation, resilience and underlying ability before joining the cadets (i.e. 'selection bias'). Further, the model can only control for differences between cadets and non-cadets at Key Stage 2 (typically age 11),

¹ The data originally contained the Royal Marines as a separate service section. However, in agreement with the client and the steering group this group was amalgamated with the Sea Cadets due to its small size. The extremely small size of the Royal Marine cadets would have not allowed for statistically sound and valid analysis of the data. This is also consistent with the Memorandum of Understanding between the MoD and the DfE on the management of the Cadet Expansion Project from September 2014.

rather than differences between both groups when entering the Cadet Force (typically at age 13 or 14). This all implies that part of the education ‘impacts’ observed at Key Stage 4 may be due to these underlying and unobserved differences between groups. The estimated positive impacts could be considered an upper bound, with ‘true impacts’ of cadet membership likely to be lower.

- It should be noted that the absence of any observable impact from participation in the Army Cadets and Sea Cadets on educational attendance and attainment, when compared with a suitably matched comparison group, are in line with other published evidence on the impact of participation in uniformed youth groups (see for example: Gorard, et. al., 2016).
- Further research should explore differences in recruitment and delivery between different service sections to understand what drives the observed results.

Process evaluation and matched survey analysis

Setting-up a school-based unit

- The process of setting up a CCF unit in schools was often driven by an individual, with either prior experience of a cadet unit at another school, prior or current personal military or cadet experience, or current involvement in community cadet units. The active involvement from school governors had often assisted the process. These findings suggest that identifying different ways to generate demand from schools may be a good way to facilitate expansion.
- The time to organise facilities, train staff, and secure financial support was frequently underestimated by CEP schools. Based on the experiences of the participating schools, a lead-in time of approximately one year should be the minimum set aside to establish a new unit, prior to the planned first parading date.
- Schools reported varying motivations for setting-up a cadet unit. The main draw included the perception that cadet activities offer a challenging opportunity to develop young people’s skills and character and positively influence their behaviour; a safe environment to develop future leaders, and a means of enhancing the school’s portfolio to be attractive to parents and students. Having a cadet unit was also perceived to have potential benefits for a school’s Ofsted rating.
- Relative advantages and drawbacks were identified for establishing different models of CEP provision. The most suitable model was usually guided by schools’ organisational and resource capacity. However, in more general terms:
 - **The stand-alone model** was often well suited to embedding cadet activities within the wider school, and strengthening the community feeling amongst the participating students. However, it was comparatively resource intensive, and

benefitted greatly from prior experience of running cadet activities or previous Service knowledge.

- **The partnership model** (affiliated to community unit, established CCF units or other CEP schools) allowed for the sharing of resources and staff between host and partner schools, and had the potential to enable a more rapid start, with cadets parading whilst new Cadet Force Adult Volunteers (CFAV) were being trained. The main drawbacks included the risk of dependency on the host school, and travel times / distances for students.
- **The hub-and-spoke model** allowed smaller schools to engage, and to share resources once operating as a stand-alone. As with the partnership model, there were often longer travel times and potential negative effects on retention.
- Many schools across the different models put significant effort into establishing positive relationships with the local community. This was seen as vital for improving the visibility and acceptance of the unit and boosting the volunteer base, as well as contributing to the wider benefit of the community locally.

Staffing and funding arrangements

- Cadet units deployed varying strategies to recruit Cadet Force Adult Volunteers (CFAV), but with mixed success. The main barriers to recruitment and retention included the demands placed on the time of CFAVs; the shortfall in the availability of training courses in some areas, and the scarcity of trained female staff, who were essential for cadet units with a mixed gender profile. The contractual requirement to commit time to cadets, as is common in some independent schools, was sometimes perceived to have a negative impact on staff motivation, unless some incentive was offered.
- There was a perceived lack of clarity regarding funding arrangements for CEP schools, indicating that a clear, long-term funding strategy and guidelines might be beneficial to provide a stronger signal to schools about the longevity of the programme. The confusion surrounding the £225 per student contribution had led to substantial delays in the decision making process to set-up a CEP unit with knock-on effects. Moreover, some School Cadet Expansion Officers (SCEOs)/ MSSC Development Workers questioned whether the CEP had indeed managed to reach the schools in the most deprived areas as intended. There was a residual need to identify ways to reach schools in those particular areas.

Cadet profile and characteristics

Engagement with and attitudes towards school

- CEP cadets who were surveyed generally reported engaging positively with their school work. A considerable majority agreed or strongly agreed that school work is worth doing (88%), and liked being at school (76%). Cadets also generally reported

working hard at school (84%), getting good marks for their work (87%) and finding the content of their lessons interesting (74%). The vast majority (strongly) agreed that their school has a good reputation (76%).

- There were limited significant differences in terms of engagement to the wider population of school age young people (the LSYPE comparison group)
- CEP cadets were more likely to think that their school had a good reputation; reported receiving better grades, and were less likely to believe that school was a waste of time.
- The cadets who were surveyed indicated that they spent on average 2.9 hours per week doing home work. This is significantly more than the comparison group. Cadets also self-reported causing trouble in class significantly less frequently than the LSYPE comparison group.
- These findings do not imply causality as it was still too early in the CEP programme and the necessary data was not available. While it is possible that cadets might be more engaged with school due to their cadet participation, it is also possible that (prior) engagement with school is predictive of students joining the Cadet Force.

Civic engagement

- Cadets are quite highly engaged in their communities. Well over one third (40%) engaged at least once a month in volunteering activities (e.g. village clean-up, fundraising events, supporting local sport events). In contrast, a separate analysis of the Understanding Society Youth Questionnaire collected in 2010/2011 by Bennett and Parameshwaran (2013) showed that only 19% of the general population of young people age 10-15 carried out volunteer work at least once a month.

Other structured activities

- One third of CEP cadets reported taking part in activities such as scouts, girl guides or youth clubs at least once a week. This is noteworthy as these types of activities are known to produce similar effects in terms of soft-outcomes as cadets. However, no significant difference between CEP cadets and the LSYPE comparison group was found regarding their engagement in these types of activities.

Motivations for joining cadets

- Young people cited expected practical outcomes, such as learning new skills (59%) and gaining confidence (37%) as important reasons for joining the cadets. Other top-five reasons for getting involved included that “it sounded like fun” (55%), “friends go” (24%) and that it “is something to do” (21%). BAME students were comparatively more likely to join cadets because a parent suggested they should join.

Experience of cadet training

- Cadets were most impressed with skills and knowledge of staff delivering the cadet experience. This highlights the necessity to have highly skilled School Staff Instructors as well as adult volunteers available who have the technical expertise but are also capable of engaging with young people effectively.
- The cadets enjoyed most that they could learn new skills and engage in activities that they otherwise would not have had the chance to engage in. Gaining new qualifications also ranked highly.
- Increased self-reliance, self-confidence and self-efficacy along with an ability to better engage with peers were among the leading effects that cadets attributed to their participation in cadets. This needs to be viewed carefully though because of the wide engagement in other structured activities that produce similar effects and thus no causality can be established.

Ethos

- Partnerships between state funded schools and independent schools were viewed positively in terms of students' personal development and although some state school students were apprehensive about attending activities at an independent school, the experience was nearly always reported as a positive one. CEP units were widely perceived to have made a positive contribution to the schools' engagement with the wider community.
- School Staff Instructors and adult volunteers were generally cautious about attributing improvements in attendance, behaviour or attainment directly to young people's participation in cadets, as most were conscious of the range of other potential influences on these outcomes. Moreover, SSIs and adult volunteers were rarely in a position to observe subsequent behaviour in the classroom, and formal monitoring and feedback mechanisms were not used. Cadets occasionally reported teaching staff referring to their cadet participation to check or sanction their behaviour.

Retention and expansion

- Most case study schools indicated that they had put longer term plans into place to develop their personnel, grow their units in terms of cadet numbers and become a stand alone unit. Staff training and retention were amongst the main challenges for ensuring continuity. Those schools that were currently working in partnership had either set a date when they planned to start on their own, or had set a target in terms of participant numbers when a stand alone unit would be feasible.
- Current CEP schools identified the following range of key conditions / enablers for expanding the cadet programme:

- a substantial lead-in time is required.
- having senior level buy-in is necessary
- funding was important for schools; especially those in more deprived areas
- staffing is essential.
- actively approaching schools with information about cadets might be considered
- public perception of cadets needs to shift to recognise it more prominently as a youth organisation
- various partnership models (affiliated to community unit, current CEP and new CEP school, independent and state-funded school) may suit expansion under limited resources

Recommendations

A number of recommendations were identified for further policy and practice development, which are summarised below and detailed within the main report:

1. **Increasing information and publicity about cadets** and their aims and more actively approaching schools may help to change perception of cadets to increase interest among schools.
2. **Expanding the involvement of the SCEOs in conjunction with Brigades beyond the initial set-up** phase could facilitate a smoother implementation process.
3. **Increasing awareness at brigade level/ equivalents about school structures** and processes may help improve communication.
4. **Developing a “How to” guide for schools at brigade level/ equivalents** would enhance a general understanding of the armed forces context and facilitate better understanding of the different organisational cultures².
5. **Examining possibilities to deliver different training pathways and resource sharing** (e.g. online learning, access to training opportunities within and across Services) would facilitate smoother progression and retention of adult volunteers.
6. **Developing clear and transparent funding structures** that are easily accessible will enable schools to develop longer term strategies for their units and promote commitment.

² Since the qualitative research with schools took place (2014/2015), this element has been developed and is now available to schools.

7. **Considering wider partnership models** (e.g. with independent schools, current CEP schools, or Community units – where capacity allows) would facilitate further expansion.

8. **Further qualitative research** into the differences in underlying motivations to join the different Cadet Forces would help to explore the reasons behind the different effects on academic outcomes. This should be done longitudinally and could be combined with additional work tracking motivation and attitudes towards cadet membership. Of particular interest in this regard is academic progression at lower levels of achievement (i.e. below A*-C grade) at KS4 which could shed light on possible effects of cadet participation for academically weaker students, which has not been included in the current analysis. An interesting piece of research could also be a longitudinal study of the long-term mental health outcomes of cadet membership, after a recent study found positive effects for Scout and Guide members (Dibben, Playford and Mitchell, 2016)³.

³ Dibben C, Playford C, Mitchell R . Be(ing) prepared: Guide and Scout participation, childhood social position and mental health at age 50—a prospective birth cohort study. J Epidemiol Community Health
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1. Introduction

In October 2014, Ecorys was appointed by the Department for Education (DfE) to conduct a research project entitled: *The Cadet Experience: Understanding Cadet Outcomes*. The project aimed to better understand how being a cadet affects young people's educational outcomes, and to demonstrate the benefits and challenges of Combined Cadet Force (CCF) units within state funded schools.

This report presents the findings from the three strands of project work, which were carried out between November 2014 and June 2015 (Strands 1 and 2) and over the spring of 2016 (Strand 3):

1. a process evaluation, comprising of qualitative case study visits conducted with a purposive sample of nine Cadet Expansion Programme (CEP schools);
2. a cadet survey, administered with a sample of CEP schools to gather data on cadets' attitudes, and outcomes (n= 55 schools, n=348 young people), and a comparison of cadet characteristics with a matched sample of young people from the Longitudinal Study of Young People in England (LSYPE); and
3. a comparison of educational outcomes of cadets drawing on administrative data from Ministry of Defence (MoD) and Marine Society & Sea Cadets (MSSC) databases with a matched sample of young people from the general population using the National Pupil Database (NPD).

The research was carried out under conditions of informed consent and confidentiality, and individual schools and participants have not been named in the report. The views expressed are those of the authors and do not necessarily reflect those of the DfE.

1.1. Policy and research background

The Ministry of Defence (MoD) sponsors and supports four Cadet Forces: Army Cadet Force, Air Training Corps, Sea Cadets, and Combined Cadet Forces. The Cadet Forces are one of the largest uniformed organisations in the UK aimed at young people with over 150 years of history. They are voluntary youth organisations with a military theme. The Sea Cadets are supported by the Royal Navy and units have independent charitable status, are community-based, responsible for raising their own funds and running their units within a broad national framework for delivering safe adventurous training activities for young people. Local Sea Cadet units are affiliated to the Marine Society & Sea Cadets (MSSC), their national charity. While the Army Cadet Force (ACF) and the Air Training Corps (ATC) are predominantly community-based, the Combined Cadet Force is school-based and can contain one or more sections from the Royal Navy, Royal Marines, the Army, or the Royal Air Force. Through a broad range of activities, underpinned by the values of the Armed Forces, the Cadet Forces aim to prepare young people for active

involvement in community life and to foster confidence, initiative, self-reliance and a sense of service to others.

1.2. The Combined Cadet Force in schools

Whereas the largest overall proportion of cadets (more than 100,000) is still based within community Cadet Force units, the Combined Cadet Force (CCF) is based within and part funded by schools with initial funding support available from both the Department for Education (DfE) and MoD⁴. Prior to the Cadet Expansion Programme (CEP), there were 237 CCF contingents (units) based in both state and independent schools and colleges throughout England, of which 61 were based in state funded schools and 176 in independent schools.⁵

The CCF contingent can comprise up to three service sections – Royal Navy, Army and Royal Air Force. Some Royal Navy sections also include Royal Marine detachments. However the CCF is not part of the UK Armed Forces. Sea Cadets are not part of the CCF framework and operate within separate governance and reporting arrangements⁶.

Each school contingent is run by a team of Cadet Force Adult Volunteers (CFAV) who are drawn, in the main, from teachers within the school. However, outside volunteers are often invited to help. Schools may employ a school staff instructor (SSI), either full or part-time, who is usually a retired Senior Non-Commissioned Officer or an individual with significant experience in the community cadet forces.

Training opportunities for cadets occur during weekly parades⁷ in school, whole day and weekend training periods (field days), at annual military camps, on courses run by the Armed Forces specifically for cadets and through adventurous training expeditions arranged on an ad hoc basis. Cadets follow the syllabus appropriate to the section⁸ they join. Training may include drill, skill at arms as well as the use of map and compass. Adventurous training opportunities offered mountain walking, canoeing or offshore

⁴ The MOD provides uniforms; weapons and ammunition; training for adult volunteers; training assistance; access to military facilities/transport; loans of stores and equipment; and remuneration for adult volunteers. The school provides the cadets; time within the curriculum to run the unit; accommodation and storage and adult volunteers.

⁵ Note since the initial research took place, the Cadet Expansion Programme has received continued funding of £50 million to further expand school-based CCF units. See for instance: <http://schoolsweek.co.uk/cadet-units-in-state-schools-to-increase-five-fold-with-50-million-budget-boost/>.

⁶ The Sea Cadets is the UK's largest maritime youth charity. The organisation was formed in 1856 to provide young people with instruction on a naval theme, and has since expanded to provide opportunities to 14,000 young people. It is supported by the Royal Navy, with corporate support from the commercial Maritime sector.

⁷ Parading covers all cadet activities which take place – it is not just drill.

⁸ For examples of instruction syllabi for Air Cadets, see: Community-based unit <http://www.967atc.co.uk/training/syllabus-and-classification/junior-cadet-training-resources/>
School-based unit: http://www.thomas-hardye.dorset.sch.uk/ccf/documents/raf_syllabus.pdf

sailing. It is envisioned that there will be the opportunity to obtain a BTEC qualification in public service, music and engineering, among others.

1.3. The Cadet Expansion Programme

On 30 June 2012, the Prime Minister announced the £10.85m Cadet Expansion Programme (CEP), with the aim of securing 100 new cadet units in state schools by September 2015. The CEP forms part of a wider DfE Military Ethos Programme, which aims to realise the full potential benefits of military ethos to achieve a good education for pupils and to positively shape their futures. The CEP is one of three strands of the Military Ethos Programme, which also includes Troops to Teachers and Alternative Provision.

The CEP was funded and delivered jointly between the MoD and DfE and was governed by a Memorandum of Understanding (MoU) between the two Departments. In the initial stages, a Joint Group oversaw the Cadet Bursary Fund (CBF), an independent fund of the Combined Cadet Force Association (CCFA) with the fund management a responsibility of the CCFA and DfE providing administrative support⁹. The fund aimed to raise £2m per year to support new CEP schools with the initial cost of running their units. The ongoing cost of running the units are the schools' responsibility with the MoD providing a small support grant. The CEP stood to make a significant contribution towards boosting the capacity and widening access to the Cadet Forces across England, and it was against this backdrop that the study was commissioned to ensure that the potential benefits were fully maximised during the rollout.

1.3.1 Establishing cadet units

Before going on to consider the evidence from the primary research it is first necessary to understand the more specific operational arrangements for the new cadet units that were set-up under the CEP. Some of the key points are as follows:

- CCF units can be set up as either 'standalone', in 'partnership' or affiliated with an existing community unit. Standalone units are solely responsible for delivering the activities. The partnership arrangement allows a school joining the Programme to link with another school with an established CCF unit. This can be a state or independent school. The rationale is to enable new schools to benefit from additional experience whilst they move towards a position where they are able to operate on a standalone basis. This also applied to the affiliation units who benefitted from the expertise developed within the community cadet units. Nine variants were originally agreed for a qualifying delivery model. These ranged from

⁹ Since the completion of the qualitative fieldwork the fund management and administration is now wholly supported by the Combined Cadet Force Association (CCFA).

a traditional CCF unit (Royal Navy, Army or RAF) through a stand-alone single Service unit (ACF, MSCC or ATC), to a partnership with an existing CCF unit or community unit (ACF, MSCC or ATC) and included both closed units (only pupils from school) as well as open units (pupils from the school and local community). These were distilled into seven options and were promoted under the CEP Directive covering a range of partnerships and affiliations, of which three were CCF specific.

- Each unit has a Contingent Commander (CC). This is normally a member of school staff with the headteacher often taking overall responsibility. The day-to-day running of the unit is typically administered by a School Staff Instructor (SSI) and adult volunteers. The SSI role is funded by the Ministry of Defence (MoD), sometimes jointly with the school and tends to be a paid full or part-time role frequently undertaken by a retired senior non-commissioned officer.
- At the time of the fieldwork, School Cadet Expansion Officers (SCEOs) were employed across 10 Brigade areas, through the Reserve Forces and Cadets Associations (RFCAs) to support the CEP. The SCEO role is to support prospective schools to the approval stage of the CEP programme and where requested by sServices¹⁰ to support further development. The Sea Cadets have development workers who alongside the initial facilitation can provide ongoing support which differs from the remit of the SCEOs.
- Once a unit has been approved the ongoing support for the unit is handed over to the relevant Service. The Brigade is the headquarters for the army cadet units in the region and provide training and support for the units. The Air Cadet units are commanded by HQ Air Cadets based at RAFC Cranwell, Lincolnshire. The Sea Cadets do not have brigades so the ongoing contact will be the Sea Cadet Development Worker and members of the Area team with support from District staff (CFAV).

1.4. The Research Evidence Base

The study was commissioned to respond to a number of specific gaps in the evidence base regarding the benefits of young people's participation in Cadet Forces, as well as to provide early evidence of success factors in setting-up and running CCF units in schools.

Despite a growing literature concerning young people's participation in structured youth activities more widely, the evidence base remains less well developed with regard to young people's participation in uniformed youth groups, and Cadet Forces specifically. A

¹⁰ The single Services (sServices) refer to the Royal Navy, Army and the Royal Air Force. In the context of the Cadet Forces, single Service is effectively the parenting Service (RN, Army or RAF) which the cadet unit, contingent, or section is sponsored and supported by.

number of studies have, however, shown promising results. Research by Feinstein and others using data from the 1970 British Cohort Study (2005) concluded that being a member of a uniformed group at age 16 increased young people's propensity to vote and to be a member of a civic organisation at age 30. Former cadets were also less likely to smoke and showed a higher propensity towards high educational achievement¹¹. These findings are echoed elsewhere. In their 2010 mixed methods study, Moon and Twigg (2010) found a positive relationship between Cadet Forces membership¹² and a range of outcomes, including personal and social development, key skills, and employability. Around two thirds (64%) of cadets who were surveyed¹³ thought that being a cadet had increased their likelihood of finding a job, and well over half reported benefits for school work (57%) and their likelihood to progress to further or higher education (56%).

Elsewhere, research indicates a positive relationship between participation in structured youth activities and pro-social behaviour, including reduced levels of anti-social behaviour (Mahoney and Stattin, 2000), and criminal behaviour (Pepper, 2010). In the Moon and Twigg study (2010), a significant majority of cadets who were surveyed (90%) said that they would intervene to help control threatening behaviour or violence and provide help for neighbours if this was needed. Cadets were also likely to report high levels of respect for authority.

While not exclusive to uniformed youth groups, the literature suggests a correlation between *sustained* engagement in youth activities, and positive academic, occupational and civic outcomes, compared with shorter programmes of activity.

This sustained engagement is a characteristic of membership-based schemes (Gardner, et. al., 2008). Indeed, Feinstein and others (2005) suggest that the ability to work with young people over a continuous period is a possible factor in achieving longer-term effects. Moreover, Margo and Sodha (2007) conclude from their analysis of data from the 1970 British Cohort Study that membership of youth groups with a clear hierarchy, well-defined goals and regular meetings is correlated with young people's locus of control – their sense of belief in the ability to influence their future.

Despite these positive findings, however, there are a number of shortcomings in the research conducted to date. Taken overall, the evidence is skewed towards self-reported outcomes; particularly 'soft' outcomes such as improved self-esteem or confidence, rather than harder outcomes that are independently verifiable using administrative data,

¹¹ A 2003 US study (Fletcher, et. al., 2003). Structured leisure activities in middle childhood: Links to well-being) on a sample of children in a suburban elementary school challenges this view. It finds that young people which are engaged in club activities (here mostly scouting) do not necessarily show improved academic performance, but are only perceived to be more socially and behaviourally competent than their peers as judged by their teachers.

¹² In this instance: Combined Cadet Force (CCF), Sea Cadet Corps/ Royal Marine Cadets, Army Cadet Force (ACF) and Air Training Corps (ATC)

¹³ Survey base n=5,100

such as improved academic performance. There remains a lack of evidence demonstrating the causal effects of participation in uniformed youth groups, despite widespread recognition of the correlation between participation and a range of outcome measures (Adamson, et. al., 2011). Moreover, uniformed activities in neighbourhoods with high levels of socio-economic disadvantage are still comparatively under-researched (Ibid., 2007).

One of the main challenges for demonstrating the effects of cadet membership is that the evidence points towards differences in the profile of young people who choose to participate. Feinstein and others found that young people who were a member of a uniformed group at age 16 scored better than their peers on reading and vocabulary tests, reported more positive attitudes towards homework, higher levels of motivation, and were more likely to report feeling in control over events in their lives. They were also more likely to come from higher socio-economic groups, and to speak English as a first language. Other studies largely support these findings (e.g. Moon and Twigg, 2010).

A principal challenge, therefore, is that the motivations leading young people to join uniformed groups – both observed and unobserved - are potentially significant in predicting their outcomes. If the likelihood of being a cadet is associated with strong levels of prior intrinsic motivation, then this makes a comparison with young people in the wider school age population less reliable. It also problematizes any efforts to directly attribute higher levels of motivation or attainment amongst the cadet population to their participation in cadet activities.

The current report sets out to further explore these issues and to compare the characteristics of cadets to the general population of school age young people. The full report in the autumn of 2015 will provide a comparison of outcomes, using matched administrative data-sets.

1.5. Aims and objectives of the project

The main purpose of the research project was to understand how being a cadet may affect young people's outcomes and to demonstrate the benefits and challenges of the new cadet units within state funded schools. To these ends, the main aims of the study, as set out within the specification, were to establish:

- whether there are quantifiable benefits of cadet membership (in all types of military cadet units) for pupils in state funded schools (including attendance, academic achievements etc.);
- the benefits and challenges for schools under the Cadet Expansion Programme (CEP); and,
- how CEP cadet outcomes and other characteristics (such as resilience, confidence and self-esteem) compare with other young people who are not cadets.

The study was commissioned to inform the development of the Cadet Expansion Programme by providing high quality evidence regarding effective practice and lessons learned from existing activity.

1.6. Structure of the report

The main body of the report is structured into two distinct parts:

- the matched comparative analysis of educational outcomes; and
- the process and impact evaluation, together with the survey results and a matched comparison analysis of the responses with a sample of LYSPE respondents.

The two strands of the research were carried out at different points in time with the process analysis dating back to 2014/15. There are also important methodological differences, with the administrative data analysis using large datasets of past cadets across all service sections, while the process evaluation and survey use newly collected primary data from at that time active cadets. The report concludes with a summary of the research findings and recommendations for the further expansion of cadet units in state schools.

Part I: Matched comparison analysis of administrative data

2. Overview of the administrative data analysis

The aim of this part of the study was to facilitate an understanding about whether and how being a cadet affects young people's education outcomes. Specifically, this strand of work aimed to quantify 'hard' effects of cadet membership, including attendance and academic achievement for pupils in state funded schools through the application of a quasi-experimental impact evaluation using administrative data.

This chapter begins by outlining the objectives and research questions for analysis, before summarizing the methodology applied. It then describes the characteristics of cadets in the different service sections and subsequently provides estimations of the likely effects of cadet participation on education attendance and attainment.

2.1. Aims, objectives and research questions

The key aims for this strand of the data collection and analysis were to:

1. describe the cadet members and analyse their characteristics (relative to non-cadets); and,
2. conduct a quasi-experimental impact evaluation to estimate the effect of cadet membership on educational attendance and attainment.

By using administrative data from the National Pupil Database and data on cadets held by the MOD and the MSSC, the analysis aimed to provide a robust account of cadet membership and its benefits. Previous research has primarily focused on self-reported and 'soft' outcomes, such as improved self-esteem (including Moon and Twigg 2010).

Key research questions for this strand of the analysis were as follows:

1. who are the cadets?
 - How diverse is the Cadet Force compared to the general school population?
 - Is there a creaming effect, i.e. do cadets tend to recruit pupils with higher than average academic achievement?
 - How long do cadets typically stay in the Cadet Force? Why do they exit?
2. How do cadets do academically? What is the impact of cadet membership?

- Do cadets perform significantly better at Key Stage 4 than they would otherwise have done with regards to educational attainment and attendance?

2.2. Methodology

Quasi-experimental impact evaluations are used to estimate the causal effects of a specific programme, policy or intervention on an observed outcome of the population. In this instance it aims to answer two questions:

- ‘Do we see positive outcomes for programme/policy/intervention participants after programme participation?’, and
- ‘Is the programme/policy/intervention responsible for these outcomes?’

Most outcomes can be affected by many other factors than the programme itself, e.g. cadets’ socio-economic background will impact on their performance at school. Impact evaluation aims to exclude those alternative explanations to attribute changes in the outcome to the programme. The better the design is at excluding alternative explanations, the more robust are its results.

To correct for these differences in the composition of both groups, matching methods were applied. Matching methods provide an opportunity to mimic an experimental setting through constructing a comparison group that is as similar as possible to the cadets with regards to observable factors relevant to the characteristics under analysis, such as socio-economic background and previous academic achievements. There are different ways to implement this matching process, with one of the most common being Propensity Score Matching (PSM) using a variety of different matching algorithms (Rosenbaum and Rubin, 1985). As different matching algorithms can lead to different estimates, the results are presented as ranges, e.g. 60-62% achieved 5 A*-C GCSEs or more.

For this study, National Pupil Database (NPD) data was used to conduct the propensity score matching. The group of cadets within the NPD was identified by Capgemini on behalf of the DfE using data on cadets provided by the MOD and the MSSC. It was then submitted to Ecorys for analysis in anonymised form. Following a number of data cleaning steps¹⁴, the final sample of cadets used for the analysis consisted of 60,698 cadets from three different Cadet Forces – RAF Cadets, Army Cadets and Sea

¹⁴ Merging of datasets, removal of duplicates, removal of implausible records, imputation of missings where possible (absences and exclusions)

Cadets^{15, 16}. This sample was restricted to those who spent more than one year in the cadets, who had achieved Key Stage 4 results between 2009 and 2014 and who joined the cadets age 12 or older. These restrictions were applied to ensure consistency across different service sections and over time, as well as taking into account only those for whom cadet membership could have realistically had an impact, i.e. those with more serious commitment to the Cadet Forces. Table 1 below provides an overview of the sample sizes by service section. A detailed description of the data cleaning and merging process can be found in the Annex.

Table 1 Sample sizes in the final cadet sample

Cadet Force	Sample size	Share of total sample
RAF Cadets	41,156	68%
Army Cadets	17,085	28%
Sea Cadets	2,457	4%
Total	60,698	100%

Source: NPD data, cadet datasets held by MOD and MSSC

The comparison group was generated from the general population of young people in the NPD who reached Key Stage 4 between 2009 and 2014 excluding those who had been identified as cadets. The final sample consisted of 3,751,938 individuals out of which a 20% random sample¹⁷ for the PSM analysis was drawn to facilitate faster analysis.

Matching variables, identified as relevant through logistic regression and hence used in the final analysis were: age, gender, ethnicity, mother-tongue, free school meal status, special educational need and English/Mathematics attainment at Key Stage 2. The following outcomes were compared across treatment and comparison group:

- Educational attainment - % of young people who achieved 5 A*- C GCSEs
- Absences - % of young people with less than 85% attendance at KS4
- Fixed-term exclusions - % of young people with at least one fixed-term exclusion in the last year of KS4
- Permanent exclusions - % of young people with at least one permanent exclusion in the last year of KS4.

¹⁵ The data originally contained the Royal Marines as a separate service section. However, in agreement with the client and the steering group this group was amalgamated with the Sea Cadets due to its small size. The extremely small size of the Royal Marine cadets would have not allowed for statistically sound and valid analysis of the data. This classification is also in line with the Memorandum of Understanding between the MoD and DfE on the management of the cadet expansion project.

¹⁶ Please note in the further analysis a short-hand of RAF, Army and Sea will be used to denote the service sections to improve legibility of the data.

¹⁷ A 20% sample meant we were able to include a comparison group, which was approximately 10 times the size of the cadet group.

Analyses were conducted for the overall cadet sample and for the different service sections separately. Different specifications were tested to ensure the robustness of the analysis. For a full description, please see the technical annex.

2.3. Who are the cadets?

This section provides a descriptive overview of the profile of cadets and compares this to that of non-cadets. Results from the description of the characteristics of both groups are interesting in their own right, for example to understand how diverse the Cadet Force is compared with the general population of pupils or if there is a 'creaming' effect with over-recruitment of young people with higher than average levels of academic attainment. Understanding the characteristics of both groups is crucial for interpreting the results from the impact evaluation.

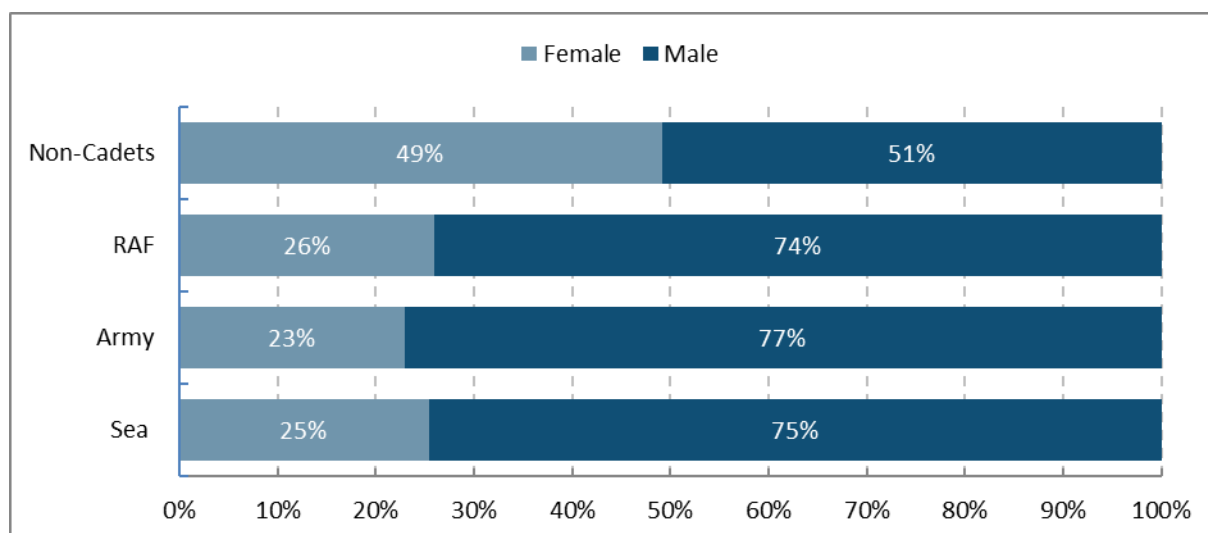
Following, we discuss the socio-economic background characteristics of cadets and non-cadets, their educational attainment at Key Stage 2, i.e. before entering the Cadet Force, and briefly the intensity of their involvement with the cadets. Results are presented separately for the different Cadet Forces¹⁸.

2.3.1 How diverse are different Cadet Forces compared to non-cadets?

Looking at the **gender** distribution within the cadets group and the non-cadets, the analysis shows that – perhaps unsurprisingly - the Cadet Forces are predominantly formed of boys (74-77% depending on the service section), compared to a more equal gender distribution in the comparison group (51% boys). Differences between different Cadet Forces are limited.

¹⁸ Note that for legibility purposes, short-hands for the different service sections have been used, i.e. RAF, Army, Sea to denote the RAF cadets, the Army Cadet Force and the Sea Cadets. Please also see the earlier comment on the integration of Royal Marine Cadets with Sea Cadets.

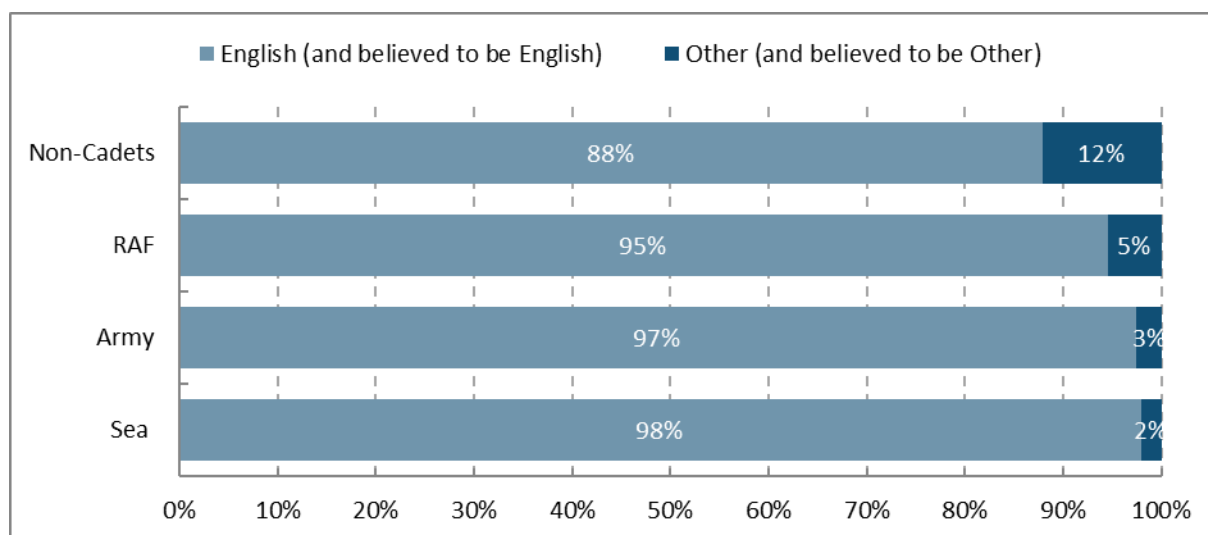
Figure 1 Gender distribution of cadets and non-cadets



Source: NPD data, based on own analysis. N=3,812,636

Beyond gender it is interesting to review if cadets are recruited from a diversity of **ethnic and socio-economic backgrounds** and reflect the diversity of the population as a whole. When looking at the **linguistic background** of cadets, it shows that cadets are on average predominantly English native speakers: between 95-98%, depending on Cadet Force, have (or are believed to have) English as a first language compared to 88% of native English speakers amongst non-cadets (see Figure 2). Again, there is little variation across service sections.

Figure 2 Native language of cadets and non-cadets

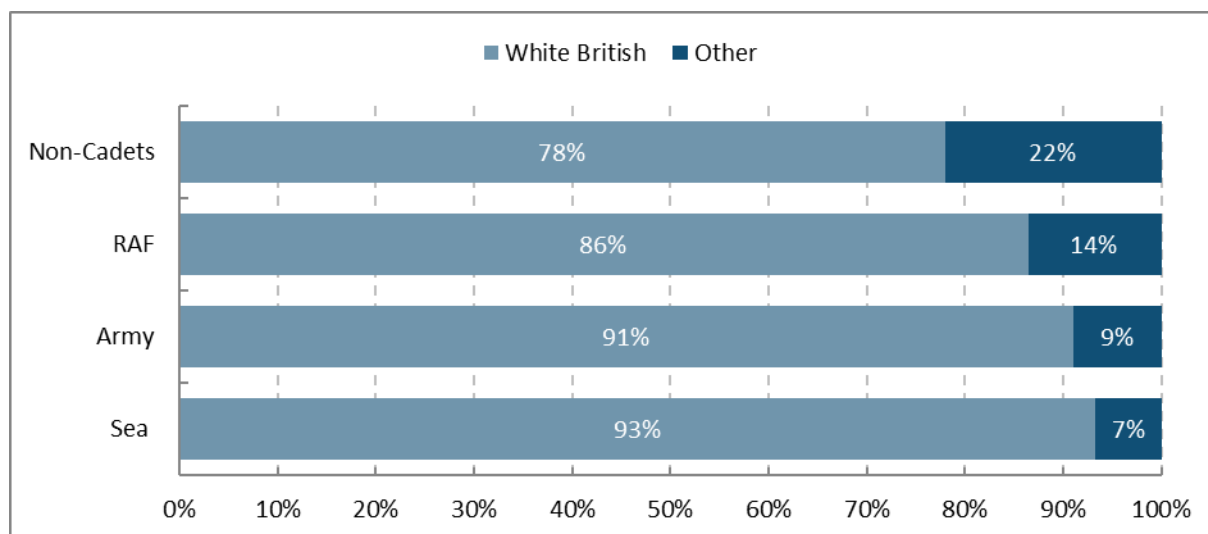


Source: NPD data, based on own calculations. N=3,441,395

Examining the **ethnic background** of both groups completes the picture. Similarly to the limited diversity of the Cadet Forces with regards to linguistic background, we find that on average the Cadet Forces are more “white British” than the comparison group of non-cadets: 86-93% versus 78%. Among the different Cadet Forces the Sea Cadets have the

largest proportion of “white British” (93%) and the RAF the lowest (86%), as shown in Figure 3 below.

Figure 3 Ethnic distribution of cadets and non-cadets



Source: NPD data, based on own calculations. N=3,425,144

Table 2 below provides further detail on the ethnic background of young people across service sections. While the proportion of mixed ethnic origin is similar for both the Cadet Forces and non-cadets (around 3%), we observe a smaller share of students from Black and Asian origin in the different Cadet Forces. The RAF cadets, the Cadet Force with the largest ethnic diversity, displays relatively high levels of cadets with Asian background compared to the other Cadet Forces.

Table 2 Ethnic distribution of cadets and non-cadets, by ethnic group

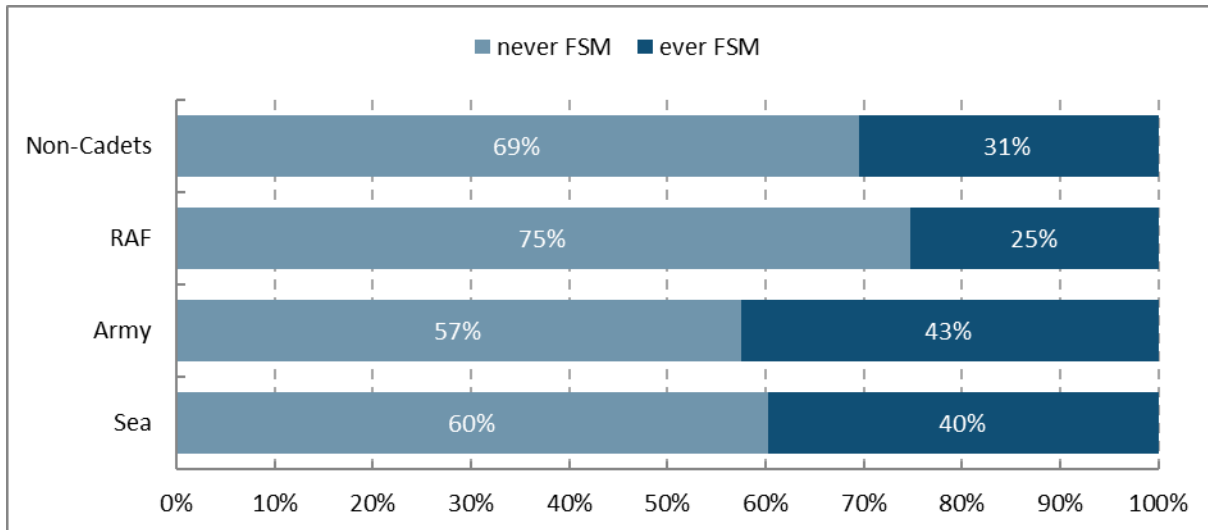
Ethnicity	Non-Cadets	RAF	Army	Sea
White British	78%	86%	91%	93%
Other White	4%	3%	2%	2%
Mixed	3%	3%	3%	2%
Chinese	0%	0%	0%	0%
Black	5%	2%	2%	1%
Asian	8%	5%	1%	1%
Other	2%	1%	0%	0%

Source: NPD data, based on own calculations, shares may not add up to 100% due to rounding.
N=3,425,144

While the national pupil database provides no direct measurement of a young person’s **socio-economic background**, e.g. the parental occupation or salary bracket, it does provide information on the free-school-meal status (FSM) of a young person. This indicator can be used to approximate socio-economic disadvantage. We use the indicator “ever on free school meals” to compare the socio-economic background of cadets and non-cadets.

If we look at the different Cadet Forces individually we observe larger differences between cadets and non-cadets. RAF Cadets come from a relatively less disadvantaged background and only 25% have ever received FSM in contrast to 31% of the non-cadet population (see Figure 4). By contrast, among the Army Cadets and the Sea Cadets, socio-economic disadvantage is more pronounced than amongst the non-cadets, with 43% and 40% having received FSM at some point in their life.

Figure 4 Free School Meal distribution of cadets and non-cadets



Source: NPD data, based on own calculations. N= 2,813,996

2.3.2 How do cadets perform academically before joining the cadets?

It might be assumed that there is a positive self-selection bias or ‘creaming effect’ of cadets, i.e. that those who are most academically able self-select themselves into becoming a cadet member, as is the case in many structured youth activities. In order to study whether the cadets are higher achievers before joining the cadets, we use two attainment indicators at the end of Key Stage 2 (year 6, approx. age 11):

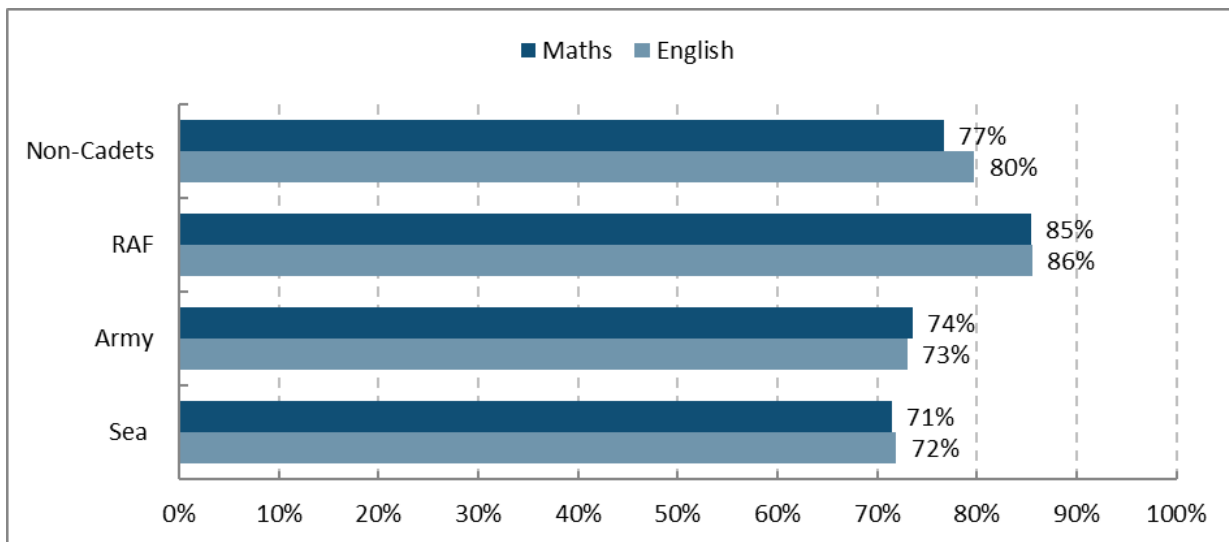
- Whether or not the young person achieved Level 2 or below in Maths or English of the national curriculum. Achieving at Level 2 or below implies that the young person performs well below the expected level at Key Stage 2 and can be described as ‘low achiever’.
- Whether or not the young person achieved Level 4 or above in Maths or English of the national curriculum. Achieving at Level 4 or above means that the young person performs at least as the expected level at Key Stage 2.

High achievers

Overall, 80% of non-cadets achieve at least Level 4 of the national curriculum in English and 77% in Maths at Key Stage 2. This stands in contrast to the large variation among the different Cadet Forces (see Figure 5). RAF cadets, of which 85% (in Maths) and 86% (in English) achieve at the expected levels or above perform better than non-cadets in

Maths and English. By contrast, the other Cadet Forces, i.e. the Sea Cadets and Army Cadets, display lower educational attainment at Key Stage 2 on average. In the case of the Sea Cadets for example, only 72% of cadets achieve at the expected level in English, compared with 80% amongst the non-cadets. This finding is in line with the lower socio-economic background of Army cadets compared to non-cadets as outlined above, in that those Cadet Forces with larger shares of young people from socio-economically disadvantaged backgrounds also show lower educational attainment at Key Stage 2 on average.

Figure 5 Key Stage 2 attainment – achieved Level 4 of the national curriculum or above

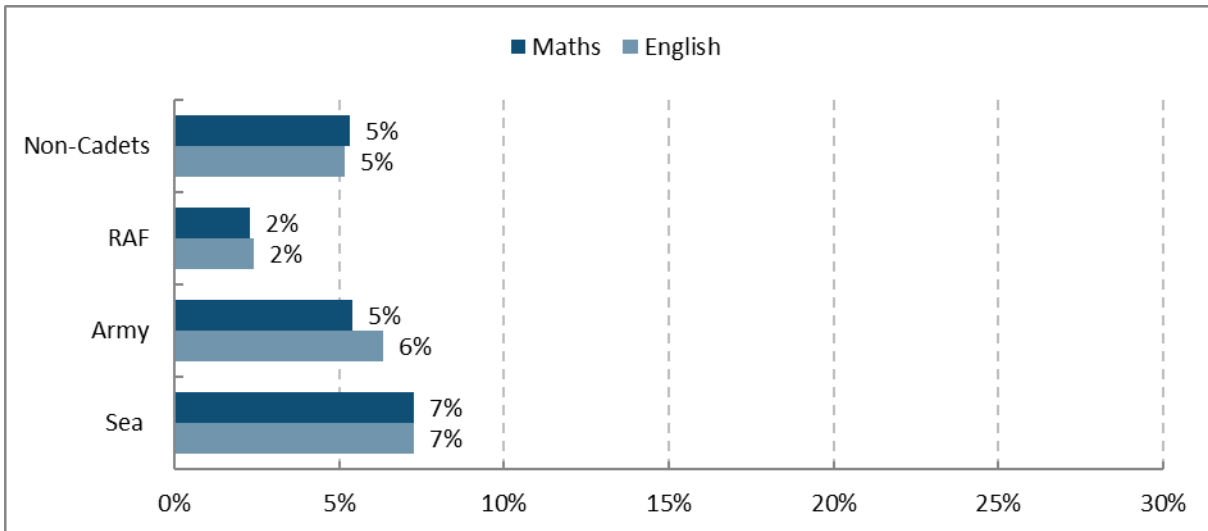


Source: NPD data, based on own calculations. Maths: N= 3,493,812 ; English: N= 3,493,820

Low achievers

Among non-cadets 5% are low achievers, meaning they achieve Level 2 or below at Key Stage 2 in English and Maths. However, there is again a large difference between the different Cadet Forces. While as little as 2% of RAF cadets are low achievers at Key Stage 2, the other service sections display higher or at least equal shares of low achievers compared to the non-cadets (see Figure 6).

Figure 6 Key Stage 2 attainment – achieved Level 2 of the national curriculum or below

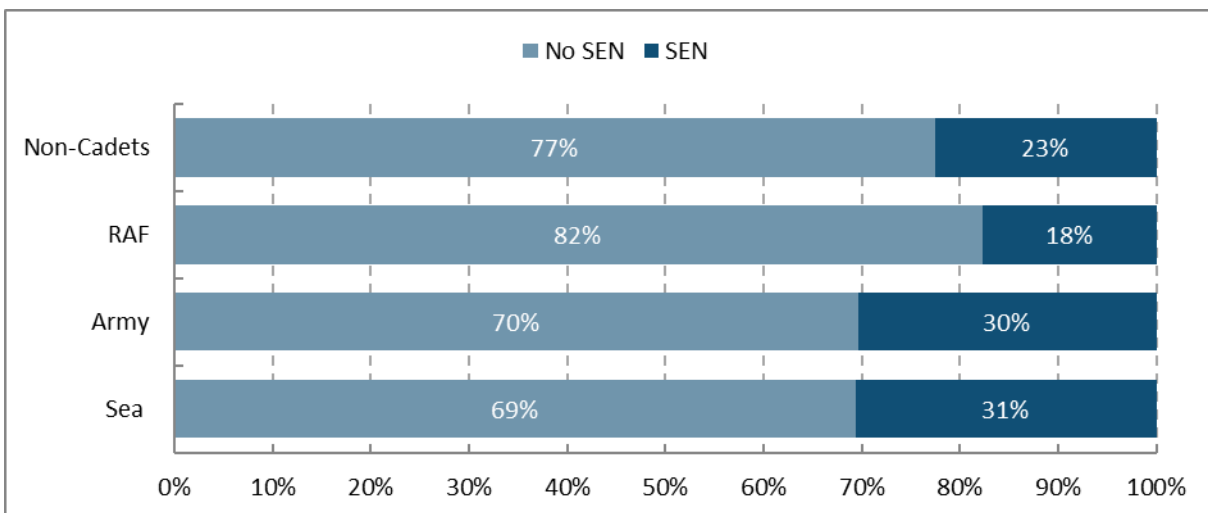


Source: NPD data, based on own calculations. Maths: N= 1,726,155; English: N= 1,726,161

Special Educational Needs (SEN)

Finally, when looking at the shares of young people with **Special Educational Needs** in the cadet and non-cadet group, yet again there are significant differences between the different Cadet Forces as well as compared to the non-cadet population (see Figure 7). Cadets in the RAF are far less likely to have Special Education Needs compared to the non-cadets (82% and 77% respectively). Sea Cadets and Army Cadets have a higher number of people with special educational needs compared with the general population of non-cadets (31% and 30% respectively).

Figure 7 Special Educational Need distribution of cadets and non-cadets



Source: NPD data, based on own calculations. N= 3,415,118

2.3.3 How involved are young people in the Cadet Force and why do they leave?

There was only little information on involvement of cadets in activities in the data provided. We found that in the sample included in our analysis, the vast majority (99%) spent at least two years in the Cadet Force. A number of reasons were quoted for leaving the Cadet Force eventually. The most common were: loss of interest (18%), poor attendance (17%) and education reasons (16%).

2.3.4 Summary

Overall, there are several differences between the different Cadet Forces as well as compared to the non-cadet population. The RAF cadets in our cadet sample are slightly more ethnically and linguistically diverse than other service sections (in particular through having larger shares of cadets with Asian background). RAF cadets are also less likely to be from a low socio-economic background than cadets in the other Cadet Forces and display the highest academic performance at Key Stage 2 compared to all other service sections, but also in comparison to non-cadets. By contrast, out of all Cadet Forces Army cadets are most likely to come from a background of socio-economic disadvantage. They also do less well academically than the non-cadets at Key Stage 2 and feature higher shares of young people with special educational needs. Table 3 provides an overview of these differences.

Table 3 Overview of background characteristics of cadets and non-cadets, %

Ethnicity	Non-Cadets	RAF	Army	Sea
Male	51%	74%	77%	75%
First language is EN	88%	95%	97%	98%
White-British	78%	86%	91%	93%
Ever received FSM	31%	25%	43%	40%
Achieved at least Level 4 at KS 2 Maths	77%	85%	74%	71%
Achieved at least Level 4 at KS 2 English	80%	86%	73%	72%
Achieved level 2 or below at KS 2 Maths	5%	2%	5%	7%
Achieved level 2 or below at KS 2 English	5%	2%	6%	7%
Special Educational Needs	23%	18%	30%	31%

Source: NPD data, based on own calculations. N= 3,812,636 overall

These differences between individual Cadet Forces will be taken into account in the subsequent analysis of the impact of being a cadet on educational attendance and attainment. As the composition of the different Cadet Forces varies, it will be interesting to see how cadet membership impacts differently on the educational perspectives of these groups of young people.

2.4. What is the impact of cadet membership on educational outcomes?

Beyond describing the differences between cadets and non-cadets prior to them joining the Cadet Force, this study is interested in understanding the causal impact of cadet membership on educational outcomes. It aims to establish if being a cadet has made a positive (or negative) contribution to young people's educational attainment and attendance at Key Stage 4, potentially setting them on a positive trajectory for further education and employment.

However, as outlined previously these outcomes for cadets and non-cadets cannot simply be compared, as initial differences in the socio-economic and educational background of both groups may bias the results. RAF Cadets, for example, may display more positive results than non-cadets at Key Stage 4 simply because they had higher educational attainment at Key Stage 2 already and continued on this positive trajectory. To control for differences in the background between cadets and non-cadets, this analysis applied Propensity Score Matching (PSM) taking into account differences in age, gender, ethnicity, mother-tongue, free school meal status, special educational need and English/Mathematics attainment at Key Stage 2.

It is important to keep in mind that the methodology applied can only control for background factors, which are observable (e.g. it is 'observable' if someone is eligible for FSM or not) and for which data is available in the NPD. It can not control for any unobservable differences, e.g. differences in the motivation, resilience or self-esteem of cadets versus non-cadets prior to joining the cadets. This implies that a certain degree of bias of our estimates of the impact of cadet membership on education outcomes may exist even after controlling for differences in background characteristics. This is discussed in further detail below.

The following outcomes were compared across treatment (cadets) and comparison group (non-cadets):

- Educational attainment - % of young people who achieved 5 A*- C GCSEs
- Absences - % of young people with less than 85% attendance at KS4
- Fixed-term exclusions - % of young people with at least one fixed-term exclusion in their last year of KS4
- Permanent exclusions - % of young people with at least one permanent exclusion in their last year of KS4.

All results are displayed as ranges, rather than point estimates, paying justice to the fact that different matching algorithms lead to slightly different results.

2.4.1 Impact of cadet membership by service section

When analysing the impact of cadet membership on educational outcomes at Key Stage 4 one can observe large differences between different Cadet Forces. As shown in table

4 below, RAF Cadets experience significantly higher shares of positive educational outcomes than the matched comparison group at Key Stage 4. 69% of RAF Cadets achieve 5 A*-C GCSEs at KS4 and only 55-58% of young people in the matched comparison group achieve similar results. This difference is statistically significant. Further, RAF Cadets are significantly less likely to be low attenders (3.7% versus 6.9–8.2%). This implies that RAF Cadets are close to half as likely to be low attenders as the matched comparison group. They are also less likely to have experienced at least one fixed-term exclusion in their last year of KS4 (3.2% versus 4-5.7%) than the matched comparison group. A small, but significant difference between both groups is observed for the occurrence of permanent exclusions. As discussed in section 2.3.2 above, RAF cadets were the Cadet Force which had the highest academic achievement even before joining the Cadet Force and seem to accelerate their positive trajectory upon joining the RAF Cadet Force.

Table 4 Educational outcomes of RAF cadets and the matched comparison group at KS4

	RAF cadets	Matched comparison group	Significant difference
Share of young people who achieved 5 A*-C GCSEs	69%	55% - 58%	yes
Share of young people with less than 85% attendance	3.7%	6.9 - 8.2%	yes
Share of young people with at least one fixed-term exclusion	3.2%	4-5.7%	yes
Share of young people with at least one permanent exclusion	0.04%	0.06-0.5%	yes

Source: NPD data, estimated with PSM, 0.05 significance level, n= 725,935 overall

These results stand in contrast to the outcomes achieved by Army Cadets at Key Stage 4. With 44% a comparatively small share of Army Cadets achieves 5 A*-C GCSEs at KS4 and results are not significantly different from that of the matched comparison group. As discussed in section 2.3.2 Army Cadets start from a lower level of academic achievement compared to the (non-matched) general population already at Key Stage 2. These different starting points are controlled for in our analysis.

The share of Army cadets with low attendance levels is 4.1%, which is slightly but significantly lower than the share observed for the matched comparison group (4.2-5.3%). Notably, Army Cadets fare worse than the comparison group when it comes to fixed-term, with significantly higher shares of Army Cadets being excluded at least once in their last year of KS4 (see table 5). It should be noted however, that our model does not control for differences between Army Cadets and their matched comparison group in exclusions before taking part in the Cadet Force at Key Stage 2. This is due to the low prevalence of exclusions at Key Stage 2 in general. Hence, it is possible that the differences observed for Key Stage 4 originate in differences between both groups at the outset, which are not captured in our model.

It was not possible to estimate differences in the share of young people with at least one permanent exclusion with the models applied.

Table 5 Educational outcomes of Army cadets and the matched comparison group at KS4

	Army cadets	Matched comparison group	Significant difference
Share of young people who achieved 5 A*-C GCSEs	44%	42.1-44.2%	no ¹⁹
Share of young people with less than 85% attendance	4.1%	4.2-5.3%	yes ²⁰
Share of young people with at least one fixed -term exclusion	8.7%	6.3-7.6%	yes
Share of young people with at least one permanent exclusion	n/a	n/a	n/a

Source: NPD data, estimated with PSM, 0.05 significance level, n= 657,304 overall

Sea Cadets display limited significant differences to the matched comparison group with regards to all education outcomes analysed. They display relatively low rates of academic attainment at Key Stage 4 – 43.6% achieve 5 A*-C GCSEs – and relatively low rates of absentees (4.0%), fixed-term (5.8%) and permanent exclusions (0.08%) (see table 6 below). Only for low attendance do Sea Cadets display significantly different results than the matched comparison group – they are less likely to be low attenders than the matched comparison group. It was not possible to estimate difference in the share of young people with at least one permanent exclusion with the models applied.

Table 6 Educational outcomes of Sea Cadets and the matched comparison group at KS4

	Sea cadets	Matched comparison group	Significant difference
Share of young people who achieved 5 A*-C GCSEs	43.6%	43.6-45.5%	no ²¹
Share of young people with less than 85% attendance	4.0%	4.3-5.5%	yes ²²
Share of young people with at least one fixed -term exclusion	5.8%	5.7-6.3%	no
Share of young people with at least one permanent exclusion	n/a	n/a	n/a

Source: NPD data, estimated with PSM, 0.05 significance level, n= 642,245 overall

¹⁹ This difference is statistical insignificant/ has low significance in half of the matching algorithms applied.

²⁰ This difference is statistical significant not in all, but the majority of matching algorithms applied.

²¹ This difference is statistically insignificant/ has low significance in half of the matching algorithms applied.

²² This difference is statistically significant not in all, but the majority of matching algorithms applied

2.4.2 Qualifications gained in the Cadet Forces

Beyond the formal qualifications achieved in the school setting, cadets can also obtain specific qualifications, such as general first aid and heart-start qualifications and different levels of swimming competences, during their time in the Cadet Force. They can also obtain vocational qualifications, for example a wide range and different levels of BTEC certificates in Aviation Studies.

Looking at it by service section, we observe that all cadets in the Army Cadets and the Sea Cadets obtained at least one qualification, while only 32% of RAF Cadets did (see Table 7).

Table 7 Share of cadets obtaining at least one qualification

	Number of cadets	%
RAF	12,996	32%
Army	17,085	100%
Sea	2,457	100%

Source: NPD, MoD and MSSC data and own calculations

2.5. Summary

This chapter set out to find answers to two key questions using administrative data from the National Pupil Database and data on cadets provided by the MOD and the MSSC: i.) ‘Who are the cadets?’ and ii.) ‘What is the impact of cadet membership on educational outcomes?’. Using this hard data, it adds to the existing evidence base, which primarily relies on self-reporting and focuses on ‘soft outcomes’.

The analysis shows that there are differences between the different Cadet Forces. Significantly larger shares of RAF Cadets achieve high GCSE results than their matched comparison group as well as displaying lower shares of low attendance and occurrence of fixed-term exclusions. By contrast, Army Cadets and Sea Cadets achieve relatively low shares of 5 A*-C GCSE results (44%), which are not significantly different to outcomes achieved by the matched comparison group. This implies that being a cadet member in those service sections did not affect young people’s educational attainment at Key Stage 4 – neither positively nor negatively.

Army Cadets had a significantly higher occurrence of fixed-term exclusions than the comparison group, but equally did significantly better at general attendance. It should be noted however, that the model applied in this analysis does not control for differences between Army Cadets and their matched comparison group in exclusions before taking part in the Cadet Force at Key Stage 2. This is due to the low occurrence of exclusions at Key Stage 2 in general. Hence, it is possible that the differences observed for Key Stage 4 can not be interpreted as impact of membership in the Army Cadets, but originate in differences between both groups at the outset which are not captured in the model.

One may conclude that taking part in the RAF Cadets for a period of at least one year has indeed a positive impact on attainment and attendance at Key Stage 4, while participation in other service sections has no significant or even slightly negative impacts on young person's educational outcomes. One explanation for this pattern could be the fact that the RAF Cadet Force is attracting those young people who are more able academically, as indicated by the higher achievement of Cadets at Key Stage 2, because they are more academically orientated than other service sections. RAF Cadet Forces follow an academic syllabus which focuses on aviation and start a BTEC qualification in Aviation as part of their training, this may explain the greater impact on academic achievement. Further, the selection of a group of academically able young people into the RAF Cadet Force may also lead to positive impacts through bringing together a group of high achieving young people who may motivate each other to even better academic results. This stands in contrast to other service sections, which may be perceived as less academically oriented and hence bring together the less academically able.

An alternative explanation for the observed patterns is that while the applied model does control for a large number of individual background characteristics of young people, it is likely that some unobserved differences between groups remain, in particular with regards to the motivation of young people. The fact that RAF cadets on average are less likely to be in receipt of free school meals and show much higher attainment at KS2, hints at the fact that there might be other differences that distinguish RAF cadets from young people in other Cadet Forces, e.g. their motivation, resilience and underlying ability before joining the cadets. Further, the model can only control for differences between cadets and non-cadets at KS2 (typically age 11), rather than differences between both groups when entering the Cadet Force (typically at age 13 or 14). This all implies that part of the education 'impacts' observed at Key Stage 4 may be due to these underlying and unobserved differences between groups. The estimated positive impacts could be considered an upper bound, with 'true impacts' of cadet membership likely to be lower.

It should be noted that the absence of any observable benefit of participation in the Army Cadets and Sea Cadets on educational attendance and attainment are in line with recently published findings of an evaluation by the Education Endowment Foundation (Gorard, et. al., 2016) on the Youth United Youth Social Action Trials. The impact evaluation, using survey and national, as well as school level administrative data, found that there was no evidence that participation in uniformed youth organisations in schools (including The Scout Association, Fire Cadets, Sea Cadets or St John Ambulance) had any benefit for pupil's academic performance. The results even suggested that there was a small negative impact of the intervention on pupil's academic performance, but the data quality was deemed too low to confidently draw this conclusion.

In reality, the interpretation of the results is likely to lie between the different explanations discussed above. Further research should explore differences in recruitment and delivery between different service sections to understand what drives the observed results.

Part II: Process evaluation and comparative analysis of the cadet survey

3. Overview of the process evaluation and survey data analysis

The aim of this part was to establish enablers and barriers to the set-up and operation of school-based cadet units and to gain insights to what extent cadets differed in softer outcomes such as confidence and self-esteem from non-cadets. This part of the study was carried out between 2014 and 2015 and consisted of two distinct work strands which are outlined in more detail in the methodology section.

Below the aims, objectives and underlying research questions are outlined. The applied methodology is then summarised before the results of the two work strands are presented. Lastly, some overall conclusions are drawn summarising the findings of both parts of the research, outlining some recommendations and highlighting areas for future research.

3.1 Aims, objectives and research questions

The main purpose of the research project was to understand how being a cadet may affect young people's outcomes and to demonstrate the benefits and challenges of the new cadet units within state funded schools. To these ends, the main aims of the study, as set out within the specification, were to establish:

- the benefits and challenges for schools under the Cadet Expansion Programme (CEP); and,
- how CEP cadet outcomes and other characteristics (such as resilience, confidence and self-esteem) compare with other young people who are not cadets.

The study was commissioned to inform the development of the Cadet Expansion Programme by providing high quality evidence regarding effective practice and lessons learned from existing activity.

3.1.1 Research Questions

Each of the main strands has separate but inter-related research questions (see below).

Process Evaluation

- a) What are the motivations in schools joining the CEP?
- b) How has the cadet unit influenced the school in terms of: ethos and improving the performance of cadets within school?

- c) What are the challenges facing newly established cadet units? How are they being tackled in schools?
- d) Which factors help the success of a cadet unit?
- e) What are the quantifiable benefits of cadets for the schools involved in the CEP?
- f) How has the cadet experience influenced the pupil (cadet) in terms of: Attitudes to learning; Future aspirations; Behaviour/discipline; Academic performance; Self-esteem/confidence; Employability skills; and, Relationships with others?
- g) Social and cultural capital - how do those cadets in partnership units with independent schools benefit from the experience of being cadets alongside independent school pupils with regard to social and cultural capital?
- h) How does a partnership between an independent school and a state funded school affect the behaviour and progress for the cadets?
- i) Does the profile of the cadets in the unit reflect the profile of pupils in the school? If not, how does it differ?
- j) Which kinds of pupils/school are likely to benefit most from the cadet bursary fund? Why?
- k) To help encourage more schools to become involved in the Cadet Expansion Programme, what lessons need to be learned? What changes can be made?

Cadet Survey and LSYPE Comparison

- a) What do young cadets think of the cadet experience?
- b) How engaged are they with school? Do they enjoy it? Do they complete their homework? Are cadets more engaged with school work than non-cadets?
- c) How do cadets differ from non-cadets?
- d) Do cadets report higher levels of confidence, resilience and self-esteem than other young people?
- e) Do cadets have different aspirations than other young people?
- f) Are cadets more involved in the community than other young people?

3.2 Methodology

This strand of the research project consisted of two work strands:

- a process and impact evaluation;
- a cadet survey, including a comparison to nationally representative sample of LSYPE respondents; and

The methodology applied to each work strand is outlined below.

3.2.1 Process and Impact Evaluation

The Process and Impact Evaluation was designed to provide good practice, ‘lessons learned’ and recommendations to schools and policymakers in order to improve the delivery of new and existing cadet units in the future, as well as engaging new schools and young people to participate. This involved:

- **Document Review and Consultations** – a short rapid review of the research evidence, and a desk-based review of key operational documents relating to the CEP; and a focus group with ten School Cadet Expansion Officers (SCEOs) also including Sea Cadet Development Workers, to ensure a sound understanding of the strategic context for the development of the programme.
- **CEP School Case Studies** – purposive sampling of nine CEP schools for a case study visit. A sampling matrix was devised, grouping CEP schools into nine pools, according to three primary sampling criteria (delivery model, school type, and unit type²³). The final sample was drawn from the pools, with attention to geographical distribution. The visits each comprised a set of interviews using semi-structured topic guides, including face-to-face interviews with a senior member of school staff; individual or paired interviews with adult volunteers, a focus group with young people in the cadet unit, and a follow-up telephone interview with the School Staff Instructor.
- **Governor and Brigade telephone Interviews** – semi-structured telephone interviews with school governors and representatives from the local Brigade from the nine case study schools, to ensure comprehensive coverage of the key stakeholders. Table 9 below outlines the number of interviews conducted by type of interviewee.

Table 9 Number of interviews conducted by type of interviewee

Contingent Commander/ School Staff Instructor	Adult volunteers	Cadet focus groups	Governors/ Headteachers	Host School	Brigades	Total
14	12	9	4 / 5	6	6	56

The notes from the various sets of interviews were written up manually and added to a structured analytical template, enabling further tiers of coding and analysis under common topic headings. The views of different types of respondents were compared and contrasted, prior to triangulating the data with the survey results and desk research.

²³ 1) Delivery model categories: New, Partnership, Affiliated; 2) School type: ASL, AC, Comm, FS, Found, UTC, and VA; 3) Unit type: CCF, SCC, and ATC

3.2.3 Cadet Survey

An online survey was carried out with CEP cadets to capture their experiences as well as assess attitudes towards school and leisure time activities. Additionally, a series of questions from the first wave of the Longitudinal Study of Young People in England (LSYPE2) – also known as “Our Future” regarding school experiences and behaviour; family relationships; activities; and aspirations were included to compare attitudes of CEP cadets with those of non-cadets. Additionally, questions from the Understanding Society survey were included focussing on self-perceptions, self-confidence, assertiveness and motivations, which were however not used in the comparison analysis²⁴. The full set of survey questions is included in the annex.

As the survey formed the basis for the comparison with the LSYPE survey, the initial assumptions about the necessary sample size were driven by the projected size of the impact the intervention was going to have on children. Longer-term and consequential (rather than direct) outcomes such as communication skills and problem solving skills, are expected to produce smaller impacts, which requires a larger sample size. Broadly speaking, for an intervention that improves outcomes for 1 in 10 participants, sample sizes of around 400 per group are needed.

The sampling strategy was therefore based on the following elements:

- At the time of the survey a relatively small number of CEP units were established and assumed to be parading (n=55), reflecting the range of CEP delivery models and the relatively small numbers of cadets engaged per unit (ca. 15-50), it was important to select a number of schools which represented this diversity, while also assuring that a sufficiently large number of survey responses could be secured.
- Similarly, while it may have been desirable to randomise individual cadets at CEP schools, this was inefficient in practice, as a relatively small number of cadets were associated with each CEP school.

Therefore, it was necessary to engage all CEP schools with units which were established by spring 2015. An average cadet-group size of 25 and an opt-out rate of 30% was assumed which would be sufficient to achieve the projected 400 survey responses. In reality, of 56 schools who were reported to have established units 28 schools participated in the survey (school response rate 50%), 13 opted out due to administrative reasons including delays to the set-up of their CEP units and problems with staff and cadet recruitment (23%), and 15 schools did not respond (non-response rate 27%). A response rate at cadet level cannot be determined, because the size of the total cadet population within the newly established CEP units is unknown.

²⁴ A matched comparison analysis was not carried out due to time constraints in accessing an additional data set. In agreement with DfE,

The survey was available for completion for 4 months with reminders issued. In total, 348 CEP cadets submitted valid responses to the survey, with response numbers per school ranging from 1 to as high as 46, an average of 12 per school.

3.2.4 Matched Comparison (with LSYPE 2 Data)

This study sought to provide a robust assessment of how CEP cadets differ from non-cadets across a range of characteristics, including engagement with school, home relationships and aspirations.

It is likely that differences between CEP cadets and non-cadets are due to differences in the composition of both groups, based in the self-selection of cadets into the programme. For example, CEP cadets are more likely to be male or from a White-British background than non-cadets – characteristics that are likely to have an impact on the characteristics under observation. To correct for these differences in the composition of both groups, we applied the Propensity Score Matching (PSM) technique²⁵.

In the context of this study, data on the treatment group was collected through the survey of CEP cadets (see above), while the match comparison group was generated using data from the first wave of the Longitudinal Study of Young People in England (LSYPE2) – also known as “Our Future”. This data was collected on 14-year olds, with data collection concluded in September 2013 (Baker, et. al., 2014). The final dataset consisted of 348 respondents of the CEP cadet survey (the treatment group) and 13,100 respondents of the LSYPE survey (the comparison group).

Matching variables included in both surveys, identified as relevant through logistic regression and hence used in the final analysis were: age, free school meal status, special educational needs, gender, as well as school type. The following characteristics were compared across the treatment and comparison group:

- School experiences and behaviour
- Family relationships
- Activities
- Aspirations

Different specifications were tested to ensure the robustness of the analysis. For a full description, please see the technical annex.

²⁵ See the Methodology section of Part I for a more detailed explanation of PSM techniques applied.

4. Setting-up and Managing School Based Cadet Units

This part of the report examines the process of setting up the CEP units in schools and the day-to-day management of the units. It explores the motivations of schools to get involved with the programme and provides insights into the advantages and disadvantages of the different implementation models from the point of view of the case study schools, as well as the SCEO/ MSSC Development Officers and the Brigades. The research was conducted in the spring of 2015.

4.1. Setting-up the unit

The process of setting up a cadet unit in schools was often driven by an individual, with either prior experience of a cadet unit at another school, prior personal military or cadet experience, or current involvement in community cadet units. Their main driver was that they had personally experienced the benefits that engaging in military training had for them and saw the programme as an ideal opportunity to make it available to a wider student community who might otherwise not engage.

Despite this, prior experience and knowledge of cadet programmes differed widely across the case study schools. While there were some schools who had no prior knowledge of or involvement with cadets, several of the case study schools had some involvement with cadets prior to the Cadet Expansion Programme (CEP). Some had been involved in military ethos outreach programmes, where specifically identified student groups, took part in intensive four-day interventions. This then evolved into the idea of setting up a school-based Combined Cadet Force (CCF) when CEP was introduced. Others had already established a partnership with another school based on students' requests and the CEP provided an opportunity to set-up a stand alone unit. In another case, the school had close links with a community based cadet unit and allowed cadets to wear their uniforms for example on Remembrance Day, instead of school uniforms. This partnership worked to make the cadet unit more visible in the school. In one other case, the school was sponsored by a foundation which required member schools to set-up cadet units as part of their ethos. Prior to CEP, this proved difficult for the school and was mainly outreach based. The CEP allowed the school to successfully set-up a school-based unit with a healthy membership and with a second cadet intake just recruited.

Given that in many cases there was some prior knowledge and understanding of cadets and the aims, it is perhaps surprising that so many underestimated the time it would take to set-up the unit within their schools. The need to recruit and train teaching staff, the timing of the training and the number of required qualifications (e.g. for weapons training), as well as securing funding often took longer than anticipated and compounded by a combination of school decision making processes, identification of appropriate other

funding sources as well as changes in policy, which triggered new school-level decision processes. This ultimately affected recruitment of students and the set-up of parading units. Therefore, it was seen as advantageous by many School Heads and Contingent Commanders, to plan for at least a full year to prepare staff and put in place all other processes and policies before considering to start recruiting cadets.

4.2. Motivations/ Reasons for getting involved

While the set-up of the units was often driven by an individual, it required the buy-in of governors and Governing Boards to retain momentum and facilitate the implementation process. In some cases this required selling the programme to the governing board by demonstrating the benefits and the alignment of the CEP programme with the school's aims and ethos. However, the interviews showed that the school governing bodies often fully supported the CEP programme and in some cases demonstrated their commitment through one of the governors being involved as an CFAV.

In the main, motivations for schools to join CEP revolved around providing a challenging opportunity for academic as well as personal development to prepare young people for the challenges of life ahead of them. Involvement in cadets was seen as an ideal way to develop young people into responsible leaders through gradually evolving the amount of responsibility given to them (through promotion to higher ranks) in a safe and controlled environment. Some schools thought it was a logical extension to the Duke of Edinburgh scheme and offered new challenges and development opportunities to their students. To a lesser extent, involvement in cadets was seen as a way to gain insight into life in the Armed Forces and a way to explore this career option without a longstanding commitment.

Additionally, having a cadet unit was seen as positively adding to the credentials and portfolio of the school and, therefore, it was an important marketing tool to attract parents and future students. One School Head outlined that *"[the cadets programme] directly translates into behaviours that are wanted in school"*. These behaviours might include respect for teachers and others, team work, and discipline. In his view, parents preferred schools with good discipline systems for their children and cadets added to that.

4.3. Standalone and Partnership models

There were various models of how CEP units were set up in schools. These models included standalone units; partnership units, and affiliation units. Standalone units were those where a school set-up their own CCF programme at the school including providing their own facilities and resources. Partnership units generally involved one, or in the case of the hub-and-spoke model several, state-funded school/s partnering with a school with an established CCF unit (frequently an independent school) and using their facilities and resources. In affiliation units, a state-funded school partnered with a community based

cadet unit. Stand alone and partnership models had different advantages and disadvantages that the interview participants outlined.

Schools that had prior experience of cadet programmes, including one school that had established a partnership with a nearby school prior to CEP on student request, were happy to set-up a standalone unit because they had the staff, resources, knowledge as well as an already established student interest to carry the programme forward. For them it was an easy transition. Another school had no prior experience, but commented that while the set-up of an independent unit from scratch was 'a steep learning curve', they did not perceive the lack of a partner school as a disadvantage. They had found it to be a manageable process, subject to the availability of appropriate and sufficient staffing and resources.

The main advantages cited by standalone units included:

- a) flexibility to schedule their cadet activities within the school's wider schedule, rather than having to coordinate with the partner school; this included for instance time table clashes between partnerships schools, where one school had to change the status of its cadet programme to make it part of extracurricular activities (rather than one that receives timetabled time).
- b) creating a shared strong community and a feeling of purpose, rather than forming a small part within a much larger partner school unit; and,
- c) the scope to nurture the school's own ethos within the Cadet Force rather than conforming with that of the partner school, and thus supporting the development of a strong school spirit.

The school that had been in a prior partnership also observed a clear differentiation in attitude and commitment towards cadets, as participation in their own unit was voluntary as opposed to mandatory in the partner school. This observation was shared by cadets and staff in some of the partnership schools who reported a stronger commitment, care and deeper engagement by those participating on a voluntary basis

Different types of partnerships had been set-up. Generally, they consisted of a private school partnering one or multiple state funded schools to provide initial support (generally for the first year of parading), with the aim to eventually enable the partner school to become a standalone unit. By far the most common model was that of two individual schools forming a partnership. This enabled the partner school to benefit from the resources (weapons, training grounds, kit required, trained staff) already available at the host school. Additionally, the partner school could build up their staff expertise while simultaneously providing the cadet experience to a cohort of students (although many had opted to first train their staff and then recruit cadets), This way, the host school did not get overburdened, which was a concern some partner schools had when the idea of partnership was originally brought to them. The case study fieldwork also showed that

some host schools were more than happy to partner with more than one school in one-to-one relationships, which they viewed as a quality badge for their own cadet programme.

In one case, schools that were part of a trust had formed a hub-and-spoke model, with the host school being the hub and the trust schools forming the spokes. In practice, this had the same advantages as the one-to-one partnership in terms of staff development and use of facilities and resources. Looking ahead, the model had the potential advantage that the trust schools would move to an independent model together, sharing cost and facilities, while also having a larger base of cadets and potential cadets to draw upon. The hub and spoke model worked particularly well for this group of schools, as they were united through the trust and thus shared a vision, objectives and aims. The disadvantage of this kind of set-up was that engagement in the weekly parades was time consuming, with partner schools travelling for about an hour to reach the host school.

A unique case was a partnership, where neither the host nor the partner school had prior experience of setting-up and running a cadet unit. Here it was vital that the staff responsible at both schools (Contingent Commander, School Staff Instructor and Adult Volunteer) had prior experience from a different school, had own prior cadet experience and/ or a military background so that there was knowledge of the requirements to effectively set-up the unit. The main difficulty identified by the interview participants in this case was coordination and communication across the two schools.

4.4. Support through the SCEO/ MSSC Development Worker

There was a universal view amongst the case study schools that SCEOs and MSSC Development Workers had a key role in the set-up and support of CEP units. Their involvement included approaching schools to set-up CEP units, brokering relationships with partner schools, providing support on the administrative side and sign-posting and guiding the units in the set-up process. One Contingent Commander expressed his gratitude saying "*Without him [the SCEO] we wouldn't have been able to move forward the way we have done*".

Technically, the role of SCEOs ends with the approval of the unit by the Joint Team when the lead role was transferred to s-Services. In some cases SCEO involvement continued through the establishment and official start of parading of the unit. However, from the case study interviews it appears that some SCEOs have retained occasional contact to check on any support needs. In contrast, the role of the MSSC Development Worker is not time limited and support for the setting-up and continued operation of the units fall within their role profile.

The extent of support needed depended on the prior experience of the unit. Schools with prior experience tended to need less support, and if needed this tended to focus on completing the necessary paperwork. In contrast, schools with little or no prior experience or knowledge often had extensive contact with their SCEO/ MSSC Development Worker

who put in a substantial amount of work to broker the partnership and deal with administrative and organisational issues.

SCEOs had concerns about the scope of their role. They would have liked a more active role in recruiting schools, but were limited to word of mouth promotion through the Local Authority, which affected the publicity and promotion of the CEP. Additionally, their time limited involvement was seen as an issue. There was a lot of investment from schools as well as SCEOs to establish a relationship which abruptly ended with the official recognition of the unit, and subsequently had to be re-established with the relevant Service. It may be preferable to reframe the roles of the SCEOs to go beyond the initial recruitment phase in co-operation with the Services to support a smoother transition. Due to their background and knowledge about cadets they are also familiar with the procedures and language and may therefore be in a better position to work, at least initially, alongside the Services.

4.5. Staffing

Staffing was an issue for schools, particularly finding adult volunteers. With one exception, all Contingent Commanders and School Staff Instructors at the case study schools had a military or cadet background. Some had been commissioned officers, some had longstanding careers in the Armed Forces, whilst others were members of the Army Reserve. Others still had a longstanding involvement with community cadet units, including sea cadets. Some Contingent Commanders fulfilled multiple roles, in that they were also Head or Deputy Headteachers and as such had a direct link to School Governors and Governing Boards. This facilitated the negotiations and reporting within the school and also eased the language barrier that those without armed forces or cadet experience reported.

School Staff Instructors (SSI) tended to be ex-military personnel with relevant experience and training. They were employed by schools and some had part-time contracts while others were shared between schools (with schools also sharing the cost). Partnership schools tended to start without an SSI, but in preparation to become standalone units, some had recruited SSIs to ensure that technical expertise was built in-house to ease the transition to become a standalone unit.

The recruitment of Adult Volunteers (CFAV) differed widely across schools. One case study school reported they had had no problem recruiting volunteers with teachers and parents getting involved, mainly because their children were cadets and they thought it was worth supporting. Most of these volunteers had at some point either been in the armed forces or had been cadets, although there were also some who had no prior experience. This meant they had to be trained which took additional time, which in this case had little effect on the operation of the unit because it had wide support among parents. The vast majority of the case study schools, however, reported difficulties with volunteer recruitment. They had employed various strategies including open days, parent

information sessions and invitations as well as appeals to alumni. These activities all generated interest, but struggled to convert them into active volunteers. Other commitments within the school and outside, the substantial long-term commitment and times of parading, as well as the training requirements were seen as barriers to recruiting and retaining adult volunteers.

One headteacher pointed out that at their private partner school, teachers new to the school were contractually required to support the school-based cadet unit for a certain period of time. However, he felt that this approach was not necessarily desirable because staff commitment and buy-in to the ethos and values that cadets brought to the school might not be reflected as prominently as in staff who committed their time on a voluntary basis. He felt that teachers who were contractually required to support the cadets unit would see it as a chore and thus only deliver and engage to a minimum standard rather than aim to deliver an outstanding experience for the students involved. He was also concerned about the cost of training staff to the required standard and for them to disengage once they had completed their required period or leaving before they could convert any of the training.

Staff turnover was reported to be a challenge at all levels. In one case, the Headteacher who had acted as Contingent Commander changed schools. However, the decision was taken to retain him in the Contingent Commander role, as the new Headteacher did not bring the equivalent experience to the CEP.

4.6. Governance and future planning

It was not possible to determine schools' precise amount of financial investment in their cadet units from the research data collection. However, two case study schools were prepared to invest substantial amounts and thus demonstrated their commitment to establishing a cadet detachment at their school. In these cases, the schools reported that there was a strategic decision to ring fence the amount that was originally intended to cover the £225 fee per cadet, which was subsequently waived²⁶. This money will be re-invested in cadet activities and staff recruitment. In a handful of other cases, schools have devised mid- to long-term development plans including how they intend to proceed with financing their detachment in the future.

All case study schools reported securing substantial levels of in-kind investment particularly with regard to staff and volunteer time, but also in making school facilities and resources available. Schools reported releasing teachers from classroom time to fulfil cadet responsibilities, which then had to be covered. In other schools, teachers

²⁶ Initially, the MoD planned to charge each school a contribution to the running cost of cadet units of £225 per cadet. However, due to the slow take-up and based on feedback, this requirement was waived in December 2014 to increase take-up of the programme.

committed some of their own spare time. This occurred most frequently in partnership arrangements where attending the host school often required significant travel time.

The ability to secure this level of in-kind support largely depended on the commitment of the individual teachers and other volunteers, as well as the endorsement of headteachers and governors/ boards. While most case study schools were extremely supportive and bought into the idea of the cadet ethos, there was evidence from the SCEO/ MSSC Development Worker and Brigade level interviews, of a distinct lack of support from some headteachers; particularly in inner city areas. The interviewees reported that this was mostly due to a lack of a wider understanding that cadets were not a military organisation. This highlighted the need to promote and inform the public to a greater extent about the nature and aims of cadet units, whether school or community based.

4.7. Challenges in the set-up process

The lack of (trained) staff was a recurring issue cited by many of the cadet units. While most had staff with some military experience, they still needed to go through a number of training courses to instruct cadet units, including in more technical competences such as weapons handling. The availability of these courses was limited, and for some schools there was also an issue with accessibility in terms of location as well as with regards to the timing of the courses. Where this was identified early, schools often decided to postpone cadet recruitment in the first instance but instead focus on the necessary staff training. In other cases, schools benefitted from teachers being active in the local community cadet unit and thus already being qualified.

Qualified female Cadet Force Adult Volunteers (CFAV) were particularly sought after, and it proved a significant draw for host schools where partner schools could offer qualified female personnel, especially if the Cadet Force was mixed. In one school, this situation had forged extensive cooperation between partner and host school where both parties reported the intention to continue the cooperation beyond the date when the partner school converted to a standalone unit. However, the recruitment of female staff was an area that many schools found difficult to address, unless they had female teaching staff with a military background, or mothers willing to engage.

Despite the willingness to commit and trying to attract additional funding (e.g. through fundraising activities of the units), money proved an issue for many schools. As the SCEOs/ MSSC Development Workers pointed out, the investment of £225 per cadet that was initially required presented a hurdle for some schools and acted as a barrier to signing-up to the CEP. With the withdrawal of the requirement, more interest was generated. However, SCEOs/ MSSC Development Workers questioned whether the CEP managed to reach the schools in the most deprived areas, as resources would be directed into other aspects of school expenditure for student support. A clear commitment to making additional funding available through the school beyond the Cadet Bursary Fund was seen as necessary to establish a functioning and sustainable cadet unit.

Administrative hurdles often proved difficult, particularly during the set-up phase, where short time frames had to be adhered to. For instance, one unit reported that they were not assigned a unit identification number which affected their ability to order equipment and uniforms for the cadets. Weapons and other equipment had not been issued which made it difficult to adhere to the prescribed syllabus and prepare the cadets for the relevant tests and qualifications.

Having school leadership staff who were experienced in running cadet units prior to joining a CEP school was viewed as a key success factor. They were aware of the challenges, had the knowledge of relevant contacts and had developed strategies to engage staff and cadets. This eased the set-up process significantly.

4.8. Recruitment of cadets

With very few exceptions, schools implemented a wide mix of activities to promote their units and recruit students. These included parent information evenings, special assemblies with presentations from current cadets or staff, participation of cadets in school and community events to raise visibility, newsletters, or stands at school open days. This was seen as quite effective and it was important to involve the students themselves, where possible to add weight and credibility. Some schools, targeted particular school years (e.g. year 8 and 9) hoping that these students would continue as a cadet in later school years, and thus build a more sustainable basis.

Several schools provided what they called a “taster session”, where they gave students interested in joining an opportunity to experience the cadets programme for six weeks, after which they had to decide whether they wanted to continue or not. One SSI explained: *'You can talk to a kid about it all day long but once they've actually got hands-on experience, doing something, that's when they're going to be more interested.'*

This strategy was quite successful, as it gave students the opportunity to explore whether they enjoyed being part of the cadets before making a longer term commitment and thus promoted retention.

4.8.1 Selection process

The recruitment process differed substantially across the case study schools. In most instances, a recruitment process similar to applying for a job was implemented. Students were required to submit a CV and a short application letter outlining their motivation to join the school-based unit. This was followed by an interview where students were questioned about their motivation, aspirations and why they thought they would benefit from taking part, among other things. In most schools, the aim was to recruit 10-15 cadets in the first instance. There was no evidence from the case study schools that any

applicants were rejected at this stage. However, school staff and cadets saw this process as useful experience to prepare them for later when they applied for proper jobs or university. Additionally, staff pointed out that it gave the cadet programme more weight, that it required effort and that such a process would reduce the applicant pool to those students who truly wanted to be engaged, and thus reduce drop-out rates.

While running counter to the aim of the CEP programme to engage particularly disadvantaged and potentially disengaged students, some schools had also put in place basic eligibility criteria (e.g. minimum grades) to ensure that participation in cadets would not negatively impact on students' educational outcomes. There is some evidence though that decisions were made on a case by case basis, particularly where it was felt that participation in cadets would be beneficial to a student's learning experience, behaviour, attendance and thus overall (re)engagement with learning.

Exceptionally, one school targeted specific students to be part of their first generation of cadets. They were generally students who were well reputed within the school, aspired to by some of the younger students, and had some "clout" with their peer group. The motivation behind this was to make the cadet unit more attractive to other students because they wanted to emulate their role models. It was anticipated that future generations of cadets would have to go through a regular application process.

It is difficult to say whether the profile of cadets in the units reflected the pupil profile in the respective schools, as some of the units had very small memberships. The bigger units were judged by staff to reflect the general pupil population at the school. Several schools and particularly governance boards in the early stages of decision making, had considered opening cadet membership to specifically targeted student populations, where cadet participation was hoped to have a positive impact on student behaviour. However, these considerations were discarded due to the risk of stigma that such an approach to targeting might create. One Contingent Commander outlined:

"They wanted to target certain students who were maybe low achievers, poor attenders... but it was made clear that it wasn't a 'naughty student club' because that then emigrates to the uniform".

4.8.2 Timing of recruitment

The majority of case study schools had, or at least plan to have, one intake a year, generally in September to allow students to achieve the appropriate training standards to attend summer camps. Recruitment for this usually took place in the spring. This sometimes depended on the year the students were in. One unit aimed to recruit students from a higher year in the first instance and therefore recruitment had been in May to prepare them for leadership and support roles with future younger intakes in September.

4.8.3 Issues with cadet retention

Retention was frequently seen by staff as a bigger issue than recruitment. Drop-outs were frequently associated with other school commitments such as participation in sports teams, as well as students losing interest or feeling overstretched. Staff indicated that it was important, and often the most difficult part, to keep interest levels high. One school had approached this through making cadet participation part of their BTEC in Public Service, so that pupils could draw an immediate benefit from their participation. In other cases, qualifications, such as first aid, were integrated into adventurous outdoor activities to directly show the relevance of the skill and qualification; other schools offered regular weekend activities to retain interest.

In a case study school with a longer tradition of cadets as a partner school prior to becoming standalone under CEP, there were significant alumni and parent activities, such as an annual tattoo or dinners, where family and friends were invited as well as other cadet units with whom they had completed exercises. This provided an opportunity to recognise those involved, celebrate the unit, and refresh friendships; which acted as an incentive to stay part of the unit.

Staff saw the ability to work well with children as a key to cadet retention. While staff needed to be able to instil discipline and be authoritative, they also needed to be relatable. This meant, that in some cases people with an armed forces background, while extremely skilled in the technical aspects, were not in all cases the most skilled in working with children.

4.9. Management and operation of the cadet unit

The day to day management and operation of the CEP units in the school was usually the responsibility of the Contingent Commander and the School Staff Instructor. It was common that administrative duties such as retaining registers and inventories and organising events, were shared between the two roles. Contingent Commanders tended to be more involved in strategic issues such as the sustainability and expansion of the unit due to their connection and involvement in school leadership. SSIs were more concerned with the military and training aspects.

Several of the schools had developed detailed profiles of their strategic strengths and development opportunities, to assess how best to manage and develop their units. These considerations included issues such as finance, staff, the sustainable expansion of the cadet unit with regards to participating students, as well as strategic alignments with other units, and the position the CCF unit wanted to occupy in any new partnerships and alliances.

From an operational point of view, the involvement of governors and school governing boards varied greatly among the CEP case study schools. Some engaged mainly with the Contingent Commander for regular reports. In other schools, governors were highly involved from a health and safety perspective, but also to ensure that the school's values would be reflected in all other school related activities. In other schools again, cadets reported directly to school governors about their activities and experiences, adding weight in their support of the unit and also showing students that the unit was important to them. In schools where governors were highly involved with the unit, there was a better understanding of the needs of the unit as well as smoother implementation of the set-up process.

One of the hurdles to successful management and operation of the unit was an issue of language. Those who had no prior experience within the armed forces frequently reported that they felt disorientated by the language. Those who had experience within the armed forces, but from a different service section also reported of having to learn new terminology and slightly different processes. One Contingent Commander, who had experience of an RAF community cadet unit, explained that he had to learn "the Army way" when taking up his current position. A glossary of language provided by MoD or a "How to..." guide explaining the appropriate processes and contact points was suggested as a possible solution. Another option would be to resort to common terminology and definitions.

The lack of a central information source was also highlighted. Administrative, organisational and operational information was reported as widely dispersed and it took valuable time to track down a particular piece of information. Several of the Adult Volunteers commented that there was little recognition of the fact that volunteers with no prior military experience needed a bit more leeway and support. Adult volunteers indicated that it was a steep learning curve for them and that amongst competing pressures with school procedures it was difficult to absorb and apply the new gained knowledge or that they simply lacked the procedural knowledge which seemed to be assumed at Brigade level. Again a detailed handbook was requested as well as possibly creating more awareness of school procedures at Brigade level to create a mutual understanding of organisational cultures.

4.9.1 Awareness of the CEP

The exact processes of how schools became involved in the Cadet Expansion Programme and how they became aware of it, were difficult to establish, mainly due to staff changes. Many of the staff, headteachers and governors took up their roles after the decision had been made to establish a unit in their school. SCEOs and MSSC Development Officers occupy a key role in informing schools and governors about the programme and helping them to establish the programme. Others heard of the opportunity by word of mouth.

The data from the SCEO/ MSSC Development Officer focus group in part supports this, as it was mentioned that they were not mandated to take a pro-active approach in the recruitment of schools, but rather had to wait until they were approached.

4.9.2 Support of operational units

sServices²⁷ were responsible for supporting the CEP units once they had been approved and were parading. The case study schools reported that support from sServices had been good to excellent, but also recognised that in some cases Services were limited in the support they could provide. In one particular case, this centred on training opportunities which due to restructuring and lack of staff had become less frequent than desired. The affected sServices were frustrated about the situation, because it affected their ability to provide support to CEP units. sServices were also well aware of the effects this had on the units' ability to recruit and train adult volunteers. Schools as well as sServices highlighted this as a major issue that also affected the retention of adult volunteers. Where possible, alternative training routes could be explored (such as online training or webinars), additionally, staffing levels at sServices should be considered, although this is unlikely in light of the budget situation.

Where possible, sServices tried to be involved and visible by attending parades for instance. Additionally, they provided e-mail and telephone support where needed. Schools as well as interview participants at Brigade level agreed that the extent of support necessary depended on a school's prior experience and the experience of the staff involved.

4.10. Cadet Bursary Fund and funding

The evidence from the school interviews regarding the uses of the Cadet Bursary Fund (CBF) was limited as participants did not provide much detail this issue, other than that it enhanced delivery. Where there is evidence, it has enabled schools to pay for staff salaries (e.g. School Staff Instructors). This enabled them to provide their students with a fuller and richer cadet experience. Having funding through the Cadet Bursary Fund enabled some schools to develop a longer term strategy, which they hoped would allow them to embed the CEP unit fully in their school. As such the Cadet Bursary Fund greatly enhanced CEP delivery.

Overall, funding was a decisive factor for many of the case study schools. Headteachers commented that the availability of funding to set up a cadet unit as part of the CEP programme had enabled them to go ahead and establish, and in some cases retain their

²⁷ The single Services refer to the Royal Navy, Army and the Royal Air Force. In the context of Cadet Forces, single Service is effectively the parenting Service (RN, Army or RAF) which the cadet unit, contingent, or section is sponsored or supported by.

unit. This was to do with the wider funding for schools. Wider schools funding arrangements put some schools, where the socio-economic mix of the pupil population was very diverse, in a position where parents had to pick up a large amount of the cost for activities such as cadets and other out-of-regular-school hours provision, which then affected those pupils from more disadvantaged backgrounds. Many schools reported having to resort to alternative strategies such as fundraisers to support these activities financially. Other schools reported that because they had funding available, they were in a position to free up teaching staff so they could invest it in out-of-regular school hours activities such as cadets.

4.11. Embedding the unit in the school and the community

In all case study schools, interview participants, stakeholders as well as the cadets reported that the CEP unit had over time become part of the school and was now fully integrated. Cadet staff particularly highlighted the importance of the buy-in of school leadership to facilitate this process. In two cases the interviewees reported of resistance from other teaching staff, to a point when in one case they had reportedly restricted students' participation in the activities surrounding a tattoo organised by the school unit. Over time, resistance towards the unit had waned and teaching staff became more accommodating. Generally, reports of teaching staff and other school staff supporting the unit and their attitude towards cadet activities were extremely positive.

Activities that helped integrate the cadet unit into the school included for instance that students wore their cadet uniform on parade days (generally once a week), which increased the visibility of the cadets and generated interest among those who were not part of the unit. In some schools cadets formed part of the enrichment activities which were allocated class time and enhanced the curriculum, while in others they were classed as out-of-regular school hours activities. But they had a fixed place in the schools' offering to their students.

Students sometimes participated in community units alongside the school-based CCF unit, and viewed it as an opportunity to solidify their training and knowledge. There was also a view that the school unit allowed students to engage with cadets that for whatever reason (e.g. access to transport) could not attend the community unit and as such the two offerings were complementing each other. Through the participation of students in both units, there was an automatic link and integration of the school and the community.

Many CEP units were highly engaged and had good visibility in their communities as a result of a lot of hard work by their Contingent Commanders and SSIs. One of the biggest events for nearly all case study school units was participation in the Remembrance Day parade. One reported that their participation had grown from initially 12 cadets to over 40, which made them a highly visible and recognisable group. People in the community were interested in them and enquired about their activities. Additionally, staff and cadets reported that they organised community activities and fundraisers, and carried out

voluntary work within the community. This contribution to the community was recognised by one council which awarded a school-based CCF unit the Charity and Voluntary Group Award as part of their annual Youth Awards.

This embeddedness has been well documented, for instance in a video introducing a school, which won the Department for Education Character Awards. Cadets are highly visible throughout the introduction and in the commentary, highlighting their skills, leadership competences and their contribution to the school²⁸. Elsewhere, cadet units have had extensive media coverage in television and radio, where reporters attended inauguration events and parades. This coverage highlighted not only the activities and the engagement of the school-based unit but shone a spotlight on the Cadet Expansion Programme overall, highlighting its aims and the activities within a local school so far.

4.12. Summary

Setting-up and running a cadet unit requires careful planning as well as support and buy-in from staff, Governing Boards and parents and can be a challenging experience for schools. However, there are many positive approaches that schools can benefit from to facilitate this process. The table below briefly summarises the main benefits and challenges for cadet units.

Table 8 - Summary of findings

Area	Benefits	Challenges
Setting-up the unit	<ul style="list-style-type: none"> Individual prior experience of cadets or military service 	<ul style="list-style-type: none"> Set-up/ preparation time often underestimated Limited availability of training courses
Motivations for getting involved	Opportunity to provide a challenging academic and personal development opportunity that extends/ complements some of the other offers (e.g. Duke of Edinburgh)	Buy-in of Governing Board beneficial to retain momentum in the implementation
Standalone and Partnership models	<p>Standalone units:</p> <ul style="list-style-type: none"> Flexibility with scheduling and coordination Creating a strong sense of community and purpose Nurturing school's own ethos <p>Partnership models:</p> <ul style="list-style-type: none"> Sharing of resources and staff Opportunity to train new staff while unit is already operational Sharing of best practice between schools Exposure of students to other young people from different socio-economic and cultural backgrounds in a safe environment 	<p>Standalone units:</p> <ul style="list-style-type: none"> May be more challenging to set-up due to lack of experience Longer set-up preparation time <p>Partnership models:</p> <ul style="list-style-type: none"> Requiring adjustments to time tables and coordination between schools Often extensive travel required Communication between schools

²⁸ See https://www.youtube.com/watch?feature=player_detailpage&v=jAs1gW2x4Ww

Area	Benefits	Challenges
Support through SCEO/ MSSC Development Worker	<ul style="list-style-type: none"> • Support in setting up the unit and brokering partnerships • Central contact point for advice and guidance 	<ul style="list-style-type: none"> • Handover once the unit was operational
Staffing	<ul style="list-style-type: none"> • Prior military or cadet experience an advantage • For partnership model: early recruitment of a School Staff Instructor to facilitate transition to standalone unit. 	<ul style="list-style-type: none"> • Finding adult volunteers that were willing to commit the time and go through the training required • Shortage of female staff • General staff turnover in secondary schools
Governance and future planning	<ul style="list-style-type: none"> • Having in-kind investment/ strong support from teachers and parents 	<ul style="list-style-type: none"> • Understanding of cadets as an organisation as well as their purpose and aims is lacking in the wider public which affects support and buy-in. Requires further promotion and information activities at both national as well as local level..
Cadet recruitment	<ul style="list-style-type: none"> • Involving students directly in recruitment of cadets adds credibility among peers • Taster sessions • Offering a recognised qualification (e.g. BTEC in Public Service) to boost employability 	<ul style="list-style-type: none"> • Developing a sustainable recruitment process (e.g. application process and selection criteria) • Timing of recruitment • Student retention in cadets (competition from other activities as well as personal priorities) • Staff's ability to work with children
Management and operation of the cadet unit	<ul style="list-style-type: none"> • Having a clear understanding of the schools' strengths and weaknesses • Having a development plan 	<ul style="list-style-type: none"> • Involving the Governing Board closely for better understanding of the needs of the unit • Military jargon specific to each branch (RN, RM, Army, RAF) • Dispersion of information sources is a challenge for schools
Support of operational units	<ul style="list-style-type: none"> • Support access to training opportunities • Attend and be visible at parades 	<ul style="list-style-type: none"> • Structural limitations (e.g. staff shortages) to the support that can be provided
Embedding the unit in the school and the community	<ul style="list-style-type: none"> • Wearing cadets uniform instead of school uniform on parade days • Establishing cadets as a fixture in the school's offering • Engagement with activities within the Community (e.g. Remembrance Day Parade, voluntary work in the community (e.g. litter picking)) 	<ul style="list-style-type: none"> • Overcoming staff resistance • Not appearing as competition to the community cadet unit (if existing)

5. Profile of cadets

Having examined the procedural aspects of setting-up and managing a CEP unit on a day-to-day basis, this chapter focuses on the profile of the cadets and their experience. This part is based on the CEP survey data. The responses of the CEP cadets are compared, where possible, with a comparison group of LSYPE respondents as the CEP cadets using propensity score matching. Propensity score matching ensures that outcomes of CEP cadets are compared with outcomes of a comparison group, which has a similar composition in terms of background characteristics than the CEP cadets. Where CEP cadets are compared with the LSYPE comparison group, the data reported are averages and show differences between the CEP and the LSYPE population.

5.1. Socio-economic background

To understand how far CEP cadets differ with regards to socio-economic characteristics that may be predictors of their outcomes, we compare them with the general population of pupils in state-funded secondary schools in England (see table 9).

Table 9 Socio-economic background of CEP cadets compared with the general population of young people at secondary schools, %

	CEP cadets (Survey sample)	Pupils in state-funded secondary schools ²⁹	General population RAF cadets ³⁰	General population Army cadets	General population Sea cadets
Male	61%	51%	74%	77%	75%
English as a first language	85%	85%	95%	97%	98%
FSM eligibility ³¹	10%	15%	25%	43%	40%
White-British	76%	72%	86%	91%	93%
SEN status	11%	18%	18%	30%	31%

Note: Data on CEP cadets based on survey data (n=348), other data based on DFE school census data, SFR16/2015 (published 11.06.2015), SEN statistics, SFR26/2014 (published 04.09.2014) and NPD data

²⁹ 11-15 years of age, includes academies

³⁰ This is historic data of those cadets that completed KS4 between 2009-2014. See section 2.2.

³¹ Self-reported eligibility for FSM for CEP cadets, eligibility and claiming free school meals for pupils in secondary schools and academies

As can be seen, CEP survey respondents differed from the general population of young people in their age group on a number of characteristics:

- As may be expected, CEP cadets were more likely to be male - 61% of CEP survey respondents were male. 51% of pupils in state-funded secondary (including academies) were male.
- CEP cadets were slightly more likely to be of White-British ethnicity (76% of the CEP survey sample compared to 72% in state-funded schools).
- They were less likely to be eligible for free school meals³². Only 10% of CEP cadets reported that they were eligible for free school meals, compared with 15% of students at state-funded secondary schools who were *both eligible and claiming* free school meals. However, this difference may be due to methodological differences (see below).
- CEP cadets were also less likely to have special educational needs (11%) compared with the general population of pupils in state-funded secondary schools (18%). Again, this may be due to methodological differences.

However, there is little difference between CEP cadets and the general population of pupils in secondary schools when it comes to the share of young people with English as a first language. Equally, the share of CEP cadets who are white-British (76%) is only slightly higher than in the age group overall.

In comparison to the general cadet population from the NPD data broken down by individual services, the CEP cadet survey population is more diverse in terms of gender, English as a first language and ethnicity. However, less CEP survey cadets received free school meals and less had special educational needs in comparison the general cadet population from the NPD data. This is possibly a feature of where CEP schools are located as well as the different approaches of engaging students (see also Section 4.8). Achievement data could not be compared from the survey cadet population to the general student population nor to the NPD/ MoD dataset as it is too early in the implementation of CEP cadets to observe this kind of effect.

It should be noted that the methodologies for collecting this socio-economic information differ between the survey conducted in the context of this study and the DfE school census data. FSM eligibility and SEN statements could only feasibly be collected as self-reported by CEP cadets in the survey, while they are based on official school census statistics for pupils in state-funded secondary schools and academies. While this implies that they are not directly comparable, the self-reported socio-economic information should give an approximation of the actual socio-economic background of an individual.

³² Free-school meal eligibility is here used as a proxy for deprivation

5.2. Engagement with school

Previous studies have found that young people in uniformed groups, including cadets, show greater engagement with school, including higher academic achievement and motivation (Feinstein et al 2005, Moon and Twigg 2010). However, issues around the direction of causality as mentioned earlier apply.

Respondents from the CEP survey were generally positively engaged with the school. Close to nine in ten CEP cadets agreed or strongly agreed that school work is worth doing (88%) and just over three in four cadets agreed or strongly agreed that they liked being at school (76%). The surveyed cadets generally reported working hard at school (84%), getting good marks for their work (87%) and finding the content of their lessons interesting (74%). The vast majority (strongly) agreed that their school had a good reputation (76%).

Comparing the engagement of CEP survey respondents to that of a matched wider group of young people (the LSYPE survey respondents), we found that both groups displayed similar levels of school engagement, with limited significant differences between them.

While the surveyed CEP cadets more frequently agreed that their school had a good reputation, they less frequently agreed on a number of other statements related to school engagement, including that they liked being at school, worked hard when they are in school and found their school work interesting. However, most differences between CEP cadets and the comparison group were not statistically significant. Statistically significant differences were limited to CEP cadets being less likely to agree that school work is worth doing and more likely to think that their school was a good school.

Complementary to these overall positive attitudes towards school, 88% of surveyed cadets (strongly) disagreed that school was a waste of time and 84% (strongly) disagreed that the work they did in lessons was a waste of time. However, as many as 35% (strongly) agreed that they did not want to go to school most of the time and 44% state that they were bored in lessons. As above, differences between CEP cadets and the matched comparison group were mostly not statistically significant.

The only significant differences related to the statement that “school is a waste of time for me”, which CEP cadets were significantly more likely to agree with. However, although differences were significant, they were very small. Only 9% of CEP cadets (strongly) agreed that school was a waste of time.

Additional indicators of engagement with school included in the survey were hours spent on school-work each week, which showed that CEP cadets spend statistically significantly more time on doing their school-work than the matched LSYPE comparison group. Moreover, CEP cadets self-reported to cause trouble in class significantly less frequently than the matched LSYPE comparison group.

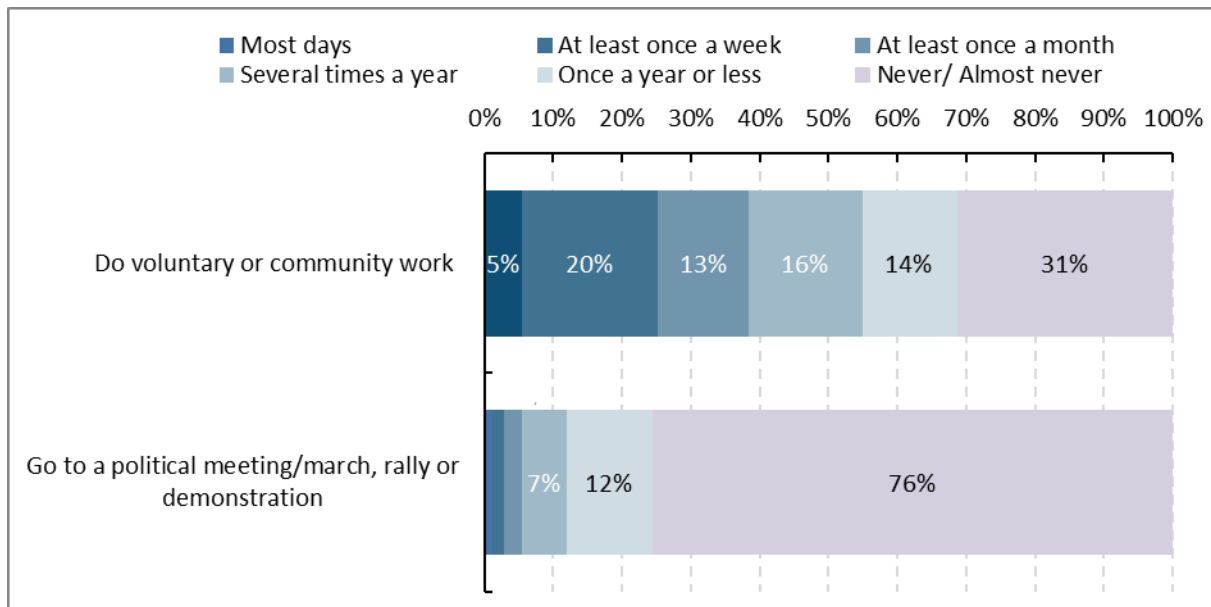
5.3. Family relationships

To understand the family background of CEP cadets, the survey asked CEP cadets about the quality of their relationship with their mother and father and how frequently they discuss issues that matter to them. The self-assessment did not provide evidence to suggest that the CEP cadets got on better with their father or mother. However, it was found that CEP cadets discussed issues that were important to them less frequently with their mother than the matched comparison group.

5.4. Social and political engagement

Previous research has found that participation in uniformed groups is positively related to civic engagement (Moon and Twigg 2010). To understand the levels of social and political engagement of CEP cadets, the survey asked how frequently they engage in voluntary or community work and in political activities, such as political meetings/marches, rallies or demonstrations. These insights were collected using a set of questions from “Understanding Society”. However, the relevant data set to carry out a matched comparison was not accessed due to time constraints. Any comparisons made are therefore only indicative.

Figure 8 Regularity of participation in voluntary work/political activism



Note: Survey on CEP cadets, n=348

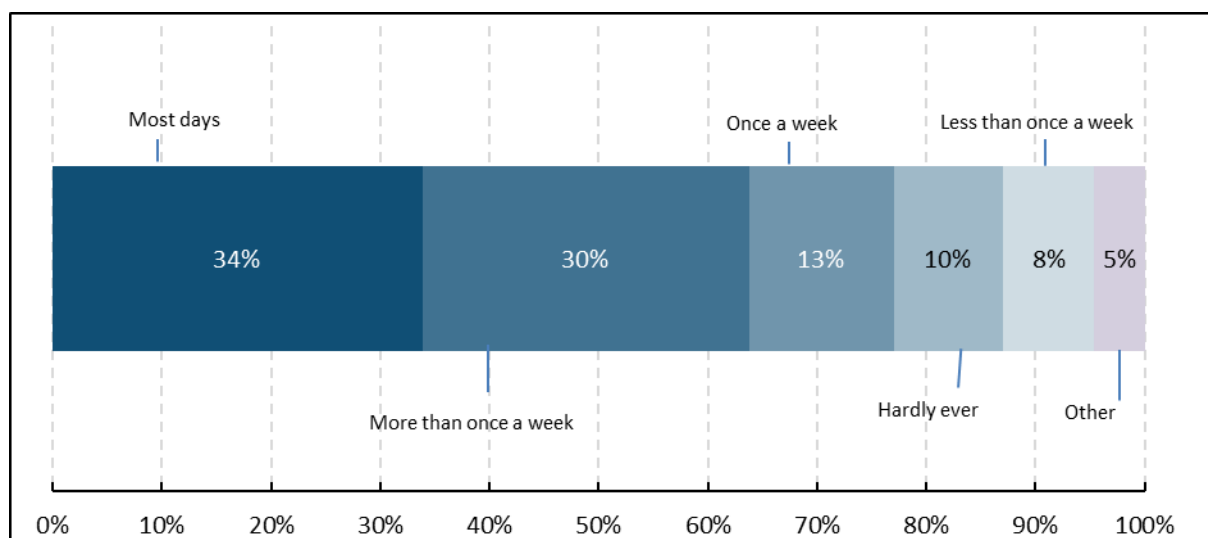
Two in five surveyed CEP cadets were active in voluntary or community work at least once a month (40%), while one in four were active even at least once a week. Just under one in three surveyed CEP cadets said they were never involved in voluntary or community work. When comparing CEP cadets with the general population of young

people aged 10-15³³, it shows that CEP cadets have a higher propensity to be involved in volunteering. Only 19% of young people aged 10-15 in the general population volunteer at least once a month, while close to one in two young people are never involved in voluntary or community work (Bennett, Parameshwaran 2013)³⁴.

5.5. Other activities

Although there is some evidence that cadet activities and other extra-curricular activities sometimes compete for time (see above), cadets were generally active in their spare time. One in three cadets reported taking part in **other structured activities** at their school, such as a youth club, scouts, or girl guides at least once a week. Around two in three cadets were **playing sports** more than once a week, however there were no differences in activity levels with the non-cadets comparison group.

Figure 9 How often do you do sports like football, aerobics, dance classes or swimming?



Note: Survey on CEP cadets, n=348

5.6. Self-esteem

It has previously been found that being a cadet had a positive impact on young people and adult volunteers in terms of personal development, skill acquisition and self-esteem (Moon and Twigg 2010). To understand the self-perception of CEP cadets, the survey used the Rosenberg's Self-Esteem Scale (8-question item short form). Overall, the surveyed cadets display high levels of confidence, with close to nine in ten young people agreeing or strongly agreeing that they have a number of good qualities (93%), that they

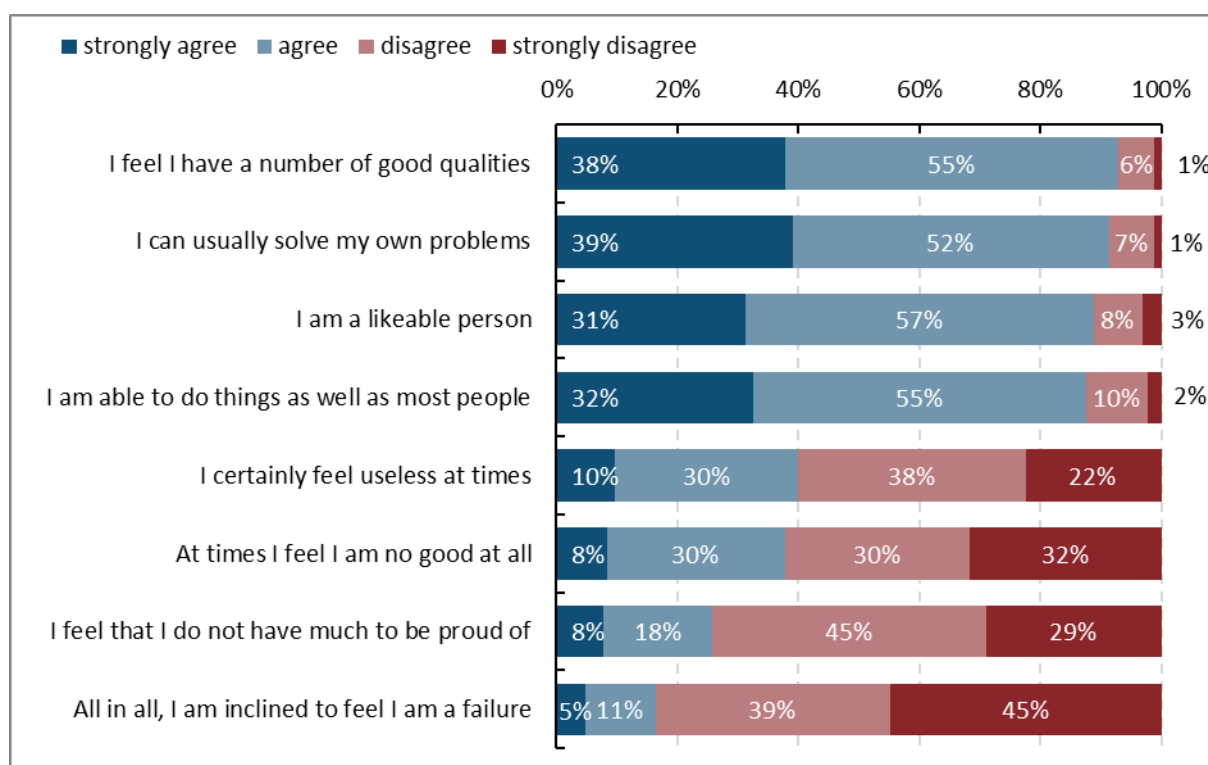
³³ As surveyed through the Youth Questionnaire of the Understanding Society Survey

³⁴ Please note that this comparison does not take into account composition effects, data used is Wave 2 of the Understanding Society Youth Questionnaire collected in 2010/2011

can usually solve their own problems (91%), that they are a likeable person (89%) and that they are able to do things as well as most people (88%).

However, as many as two in five cadets felt useless at times (40%) or said that they are no good at all (38%). Around one in four agreed or strongly agreed that they have not much to be proud of (26%) and 16% feel like a failure overall. While a matched comparison analysis was not carried out with this particular dataset, when compared to all respondents of Wave 2 of the “Understanding Society” survey, more CEP cadets identified themselves as good problem solvers (91% compared to 87% of Understanding Society respondents). In all other scale items CEP cadets rated themselves similar or worse than the “Understanding Society” respondents.

Figure 10 Cadets’ views using Rosenberg’s Self-Esteem Scale



Note: Survey on CEP cadets, n=348, answer options: strongly agree, agree, disagree, strongly disagree

5.7. Aspirations

Lastly, we were interested in the aspirations of CEP cadets, i.e. whether they intended to go to university and the kind of jobs they would like to do in the future. Looking ahead, four in five cadets surveyed (81%) stated that it was likely or very likely that they would apply to go to university to get a degree. This was not significantly different from the matched LSYPE comparison group.

CEP cadets were asked what kind of job they imagine to take up in the future, i.e. if it mattered to them to have a job “where they help other people”, a job that paid well, an interesting/non-routine job or to be self-employed/have their own business. CEP cadets

most frequently stated that it mattered a lot to them to have a job that was interesting and not routine (65%), which was closely followed by having a job which pays well (64%). 47% stated that it mattered a lot to them to have a job where they could help other people. A small share stated that it mattered a lot to them to be their own boss or have their business (18.4%).

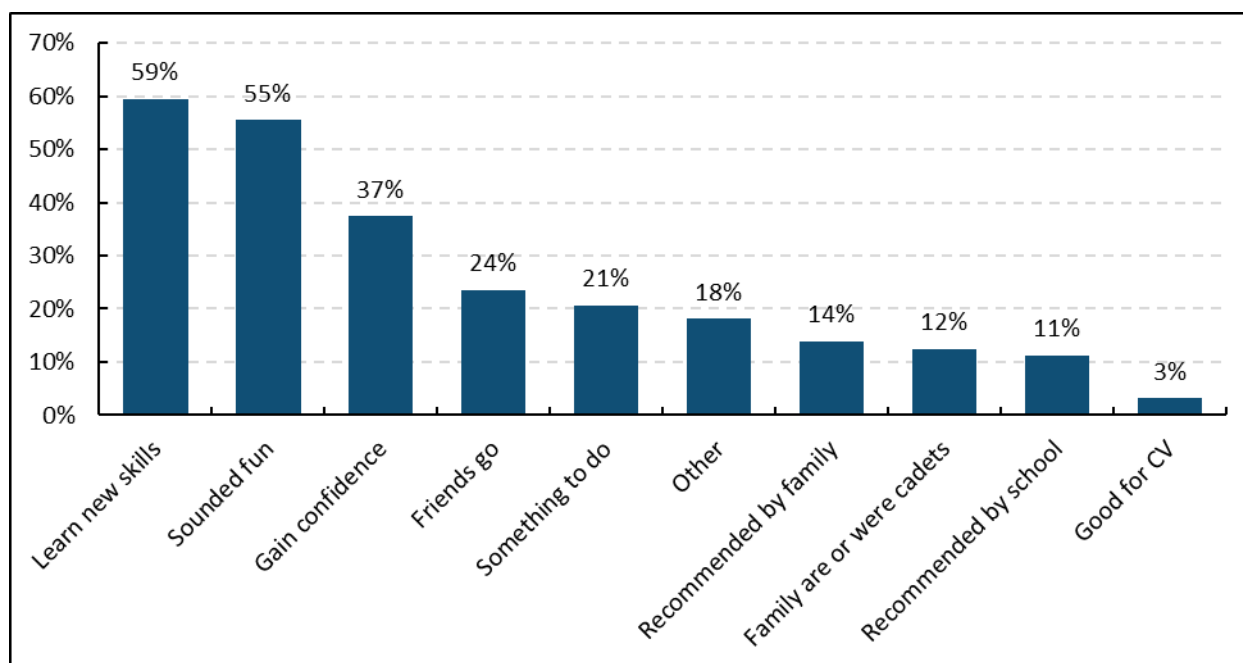
6 Cadet experiences

In this chapter, we draw upon the qualitative case study evidence and cadet survey data to review the cadet experience from the perspective of young people. The chapter starts by reviewing the young people’s self-reported motivations for becoming a cadet, and pull / push factors for doing so. We go on to examine young people’s experiences of the recruitment and induction processes, and their satisfaction with the type, range and quality of cadet activities. The chapter concludes by examining the (self-reported) outcomes.

6.1. Joining the cadets

Students’ motivations for joining the cadets were explored through the cadet survey and the qualitative case study visits. Both strands of data collection reinforced that students from CEP schools became involved in the cadets for a variety of different reasons, ranging from participation simply because “*it sounded fun*” to having a specific goal in mind, such as learning new skills or CV improvement. The survey results provide an overview of students’ reasons for getting involved, as presented in Figure 11 below.

Figure 11 What made you want to get involved in the cadets?



Note: Survey on CEP cadets, n=348, multiple answers possible

Figure 11 highlights that students cited expected practical outcomes, such as learning new skills (59%) and gaining confidence (37%) as important reasons for joining the cadets. Other top-five reasons for getting involved included that “it sounded like fun” (55%), “friends go” (24%) and that it “*is something to do*” (21%). External influences such as a family member or someone from the students’ school recommending participation, as well as CV improvement, seemed to be relatively less important reasons for

participation. Other mentioned reasons for joining the cadets included a variety of different aspects. The most frequently named aspect included an interest in joining the armed forces in the future.

These answer patterns were relatively consistent across age, gender and ethnicities. Nevertheless, there were some apparent differences:

- Girls more often cited that “*it sounded like fun*” as one of the reasons for participation (61% versus 52%) and less often cited the fact that their friends go as a motivating factor (19% versus 26%).
- Ethnic minority students were also more likely to have become involved with the cadets due to the fact that “*it sounded like fun*” than White ethnic groups (64% versus 53%), but were also more likely to report having joined because a family member recommended it to them (23% versus 11%).
- Differences between those cadets aged above (N = 140) and below 15 years of age (N = 192) were relatively more pronounced. Perhaps unsurprisingly, younger cadets were more likely to join because their friends go (26% versus 21%); because someone from their family is / was a cadet (17% versus 6%), or someone in their family said they should go (18% versus 9%).

Focus groups responses largely support the survey evidence. Students were fairly evenly spread between those who were attracted to the military connotations of being a cadet – whether because of an interest in a military career; because they wanted to follow in the tradition of family members who were in the Armed Forces, or because they associated cadets with adventure and excitement, and those who joined primarily to broaden their experience, gain confidence and to learn new skills. The novelty factor was quite a major draw, in that cadets offered “*something different*” and was perceived as “*something you don’t usually get to do*”. Several students contrasted cadet activities favourably to the more routine sports or music clubs that were on offer at their school, whilst one student was attracted to cadets because it felt like a step-up in maturity from the activities they did at primary school.

It is noteworthy that students from several of the schools had previously joined a community unit and not enjoyed the experience as much; typically, because they found the environment unfamiliar or intimidating (although this was by no means universally the case), whilst others said that it would not have crossed their mind to join a cadet unit prior to the CEP because they perceived this to be entirely separate from the school “*...part of the Army*”. The fact of offering cadet activities at the school was a key factor in persuading at least some of the students to join, and the familiarity of the school surroundings often made all the difference: “*CCF is more relaxed but it still has military feel... it’s the best of both worlds*”.

The role of cadet activities in improving self-discipline was only mentioned in one of the focus groups, where a student described having joined “*to behave better, so you’re more*

calm out of school". However, the teamwork and life skills aspects of cadets had attracted many more of the students when they first decided to join.

Although students had not generally joined to copy their friends, it was apparent that peer group attitudes were important to some, who were initially anxious about how their cadet membership would be perceived. In a few cases, students had taken reassurance from the fact that they recognised others from their classes/ year group when they first joined. The influence of teachers was only mentioned in the focus group for one school, where several pupils had been attracted to cadets because they had a good relationship with the teacher who was also the SSI for their unit.

6.1.1 Students' prior knowledge of cadets

The case studies showed differing levels of prior awareness of cadet activities amongst students from the individual case study schools. As might be expected, students' awareness was generally higher where cadet activities had been established for a number of years, or where they/ their friends had been a member of a community unit. Over time cadet units became quite visible within the school ("*It's always been around... there are girls in uniform walking around*"). Other students commonly first heard of the CEP through a special assembly, delivered by the SSI and/ or existing cadets, followed by an evening session where they could find out more about what was involved.

6.1.2 Students' views on recruitment and induction

The initial stages of induction and training were thought to be fairly critical for students' decision-making about whether to continue with the cadets. Students from most of the case study schools reflected that they had enjoyed the first few terms the least, due to the higher proportion of time spent in the classroom at this stage. Typical comments included that "*it was boring to start with*"; "*it dragged on at the beginning a bit*", and "*there was too much classwork at the start... and too much marching*". Students generally acknowledged that this familiarisation period was necessary, however, and had started to enjoy the activities much more once they had the opportunity to use the equipment. There was an awareness of the fairly high drop-out rates during this period, as students made an initial assessment about whether cadet membership was really for them. Those who had persisted sometimes took a critical view of their peers who had left early on, perceiving that they had not given cadets a proper chance and that they had missed out on a good opportunity as a result.

The initial few terms of membership were also described as being particularly important for settling-in socially. Although students commonly described having been nervous about starting in a new group, this was often helped by the fact that they recognised and "sort of" knew a number of the other students within their year group. In the main, the students had valued the opportunity afforded by the cadets to meet new people and widen their circle of friends within a supportive environment.

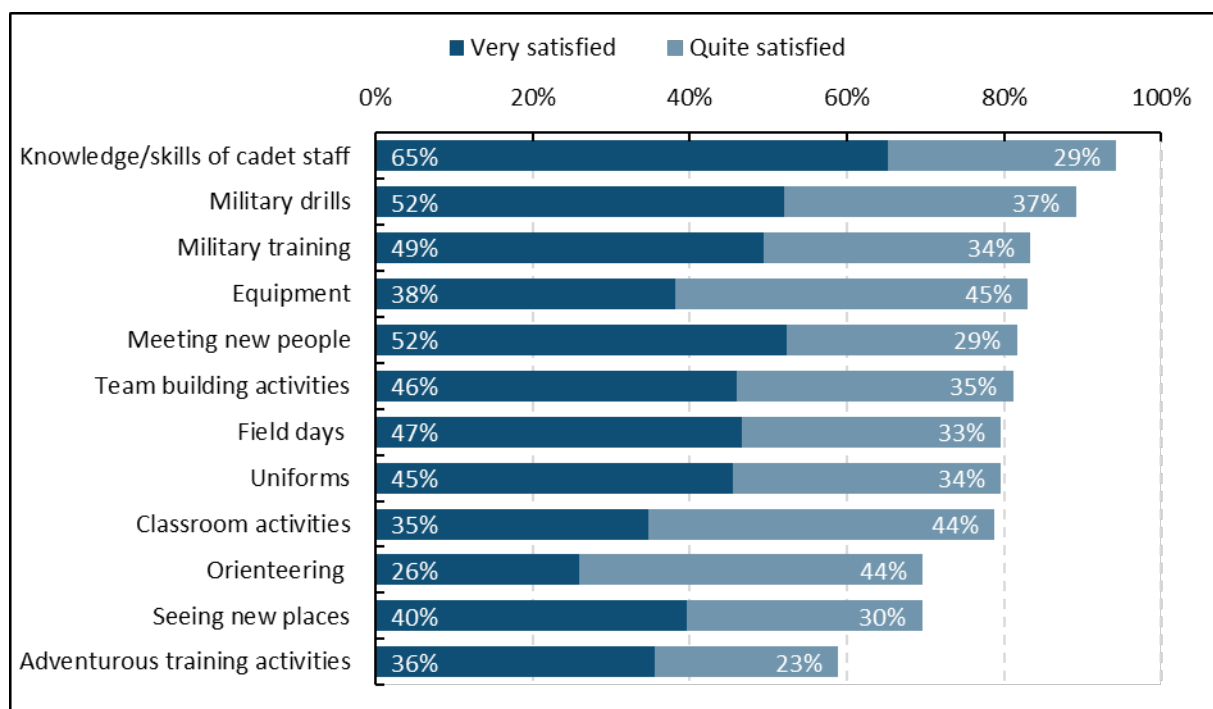
In a few instances, the cadet unit was very small to begin with (comprising of 5 or 6 students in some cases even less), and the main challenge was one of making the unit visible and persuading their peers and school staff of the value of being a cadet. Students from one group described with some pride how they had gradually raised awareness of their unit within their local school and within the community. This was helped considerably by attending and doing well at other school events.

Once the initial recruitment and induction phase was completed, the cadet survey indicates that the vast majority of CEP cadets attended cadet activities weekly (81%), whilst fewer than one in five cadets attended the cadets twice a week or more frequently. This is reflected in some focus group responses where students indicated that they also attended the community unit. Those students who had been cadets for a longer period reflected that the cadet membership had remained fairly stable after the early stages, although the students from one school observed that there was another spike in students dropping-out at the start of year 11 as they wanted to concentrate on their GCSEs. The growing pressures on students' free time also meant that cadet activities increasingly had to compete with other extra-curricular activities, and with students' burgeoning social lives.

6.2. Experience of cadet activities

Overall, those surveyed were very satisfied with their cadet experience. As Figure 12 below shows, the highest satisfaction levels were reported for the knowledge and skills of the cadet staff (94% very or quite satisfied) and regarding the military training aspects (83%); in particular the military drills (89%) and the equipment (83%). This further highlights the necessity to have highly skilled staff who can engage children available. At the other end of the spectrum, adventurous training activities were described as satisfactory by only 59% of surveyed cadets. Nonetheless, these are still very high satisfaction levels overall.

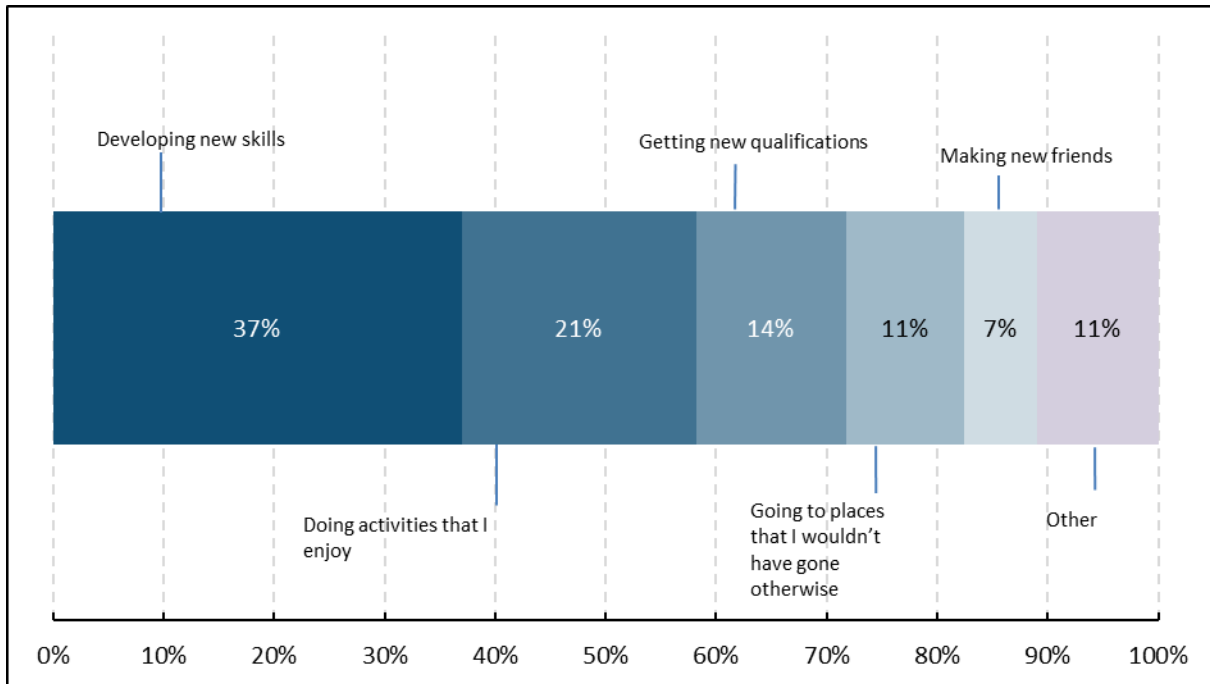
Figure 11 Satisfaction with different elements of cadets



Note: Survey on CEP cadets, n=348, answer options: very satisfied, quite satisfied, not very satisfied, not satisfied at all, does not apply.

When asked which aspect of being a cadet respondents liked most (Figure 13), more than one in three respondents (37%) stated that they most liked developing new skills, followed by doing activities that they enjoy (21%). Getting new qualifications (14%), going to places they would not have seen otherwise (11%) and making new friends (7%) seemed to be relatively less important for those surveyed. Getting on better with school work and being involved by the community were named as most enjoyable by less than 2% respectively. Other frequently given answers included students being given the opportunity to do things they would not otherwise have be able to do, and gaining insights to the armed forces.

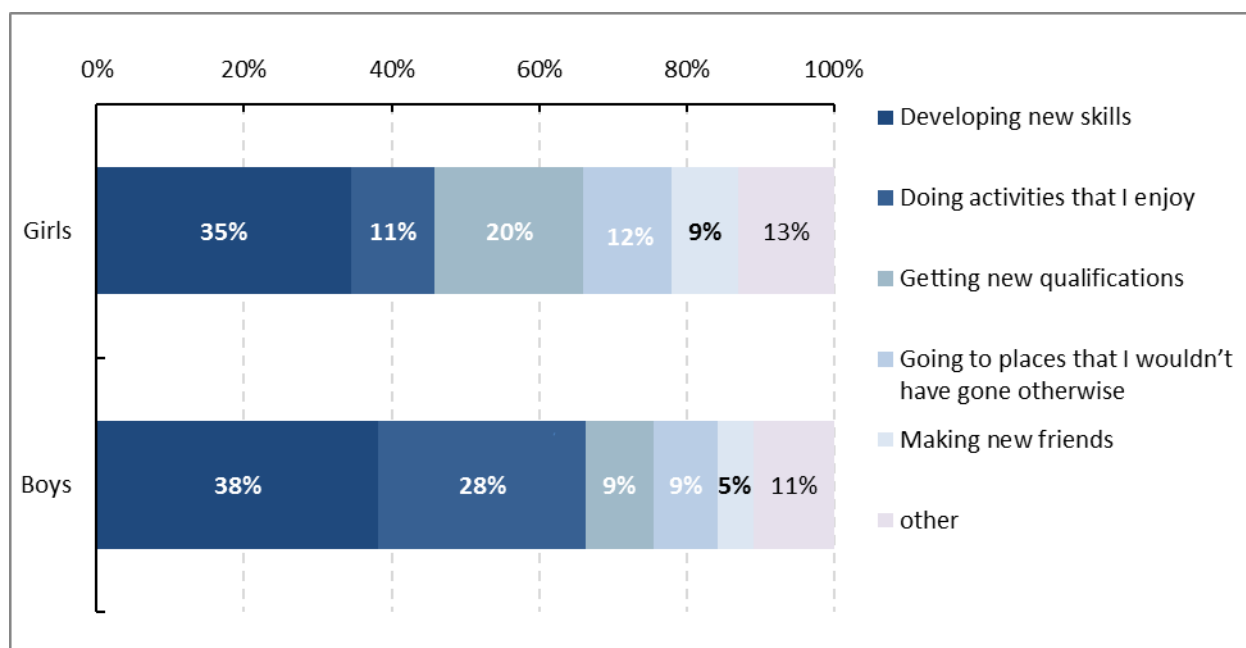
Figure 13 The most liked parts of being a cadet



Note: Survey on CEP cadets, n=348, one answer possible

Comparing answer patterns by age, ethnicity and gender, it is interesting to note that whilst both boys and girls appreciated being part of the Cadet Force to develop new skills, a far larger share of girls cited gaining a new qualification as the most enjoyable aspect of being a cadet (20% versus 9%). Boys were far more likely to state that they primarily enjoyed the activities than girls (28% versus 11%).

Figure 12 The most liked parts of being a cadet split by gender



Note: Survey on CEP cadets, n=348, one answer possible

Even with high satisfaction levels, 30% of surveyed cadets stated that there are aspects of the cadets they did not enjoy. The reasons given included that:

- The level of discipline was “too strict” sometimes (23%)
- They did not get on with other cadets (22%)
- The activities were too difficult/tiring sometimes (17%); and,
- They sometimes did not get on with the instructor (12%)

Other frequently stated open responses included that the activities were boring at times (classwork in particular); that being a cadet clashed with other activities, and – in some schools - that there was a perceived lack of equipment and/ or organisation.

The focus groups reinforced the central role of the cadet instructor and adult volunteers in shaping students’ experiences of CCF. Although individual students reported varying degrees of satisfaction in their relationship with their instructors, the overall impression was that instructors carried a great deal of respect and were able to strike a balance between being firm when they needed to, whilst also being approachable and keen to ensure that the students enjoyed the experience. Students were generally aware that some aspects of being a cadet, such as the equipment handling, required seriousness and they knew the conduct that was expected of them. Instructors were invariably seen as being a source of practical knowledge in areas where many of the students had little prior experience, such as orienteering, first aid, and military drills.

It was common for the students to make a comparison with teaching staff when describing their instructor. This was usually a favourable one, with instructors perceived as “stricter” than teachers in some respects, but also finding it easier to build rapport and engage with students, because the activities were one step removed from schoolwork and had an extra-curricular feel. The relationship was described in similar terms to other types of coaches (e.g. sports) in this regard, albeit with a military ethos. The students placed a strong emphasis on mutual respect, and a sense of ‘fairness’:

“They [cadet instructors] are a bit stricter than teachers, but you can have a laugh with them.”

“They know when to discipline you, but also when to make it fun. It becomes more of a friendly relationship at times, than a student relationship.”

The adult volunteers were drawn from the teaching staff in a number of the case study schools, and this made for an interesting dynamic when students found themselves working alongside familiar authority figures in a new context:

“When you first go in and you see your teachers from Wood Tech or Sport, you see them there and on one side you see them as teachers who have taught you for a certain amount of years who you know quite well, and then there is this new side to them ... the whole idea of respect and discipline is put in from day one.”

The sense of community that existed around the CCF was also singled out by students as being a factor that set cadets aside from other organised activities they had experienced (e.g. scouts and guides, or sports clubs). One student commented that there was always someone – whether an instructor, volunteer, or other cadets, to turn to for advice or to discuss an issue that was concerning them.

The focus groups affirmed the survey results with regard to students’ overall preference for outdoor and practical activities over those that were classroom-based. In the main, students said that they most valued the fact that CCF gave them the opportunity to have experiences that they would not get anywhere else, and that it allowed them to push and test themselves in new ways. The shooting and field-craft activities were often the most memorable; with students recalling particular exercises such as night time military drills, or being dropped off on location and having to navigate back by themselves. The leadership aspect of cadets also came through quite strongly. Students particularly valued the sense of control and authority that they experienced during the cadet training, which they might not necessarily experience outside of cadets:

“I feel more in control when doing the commands because sometimes we get to take over and teach each other.”

“It brings out the inner you”.

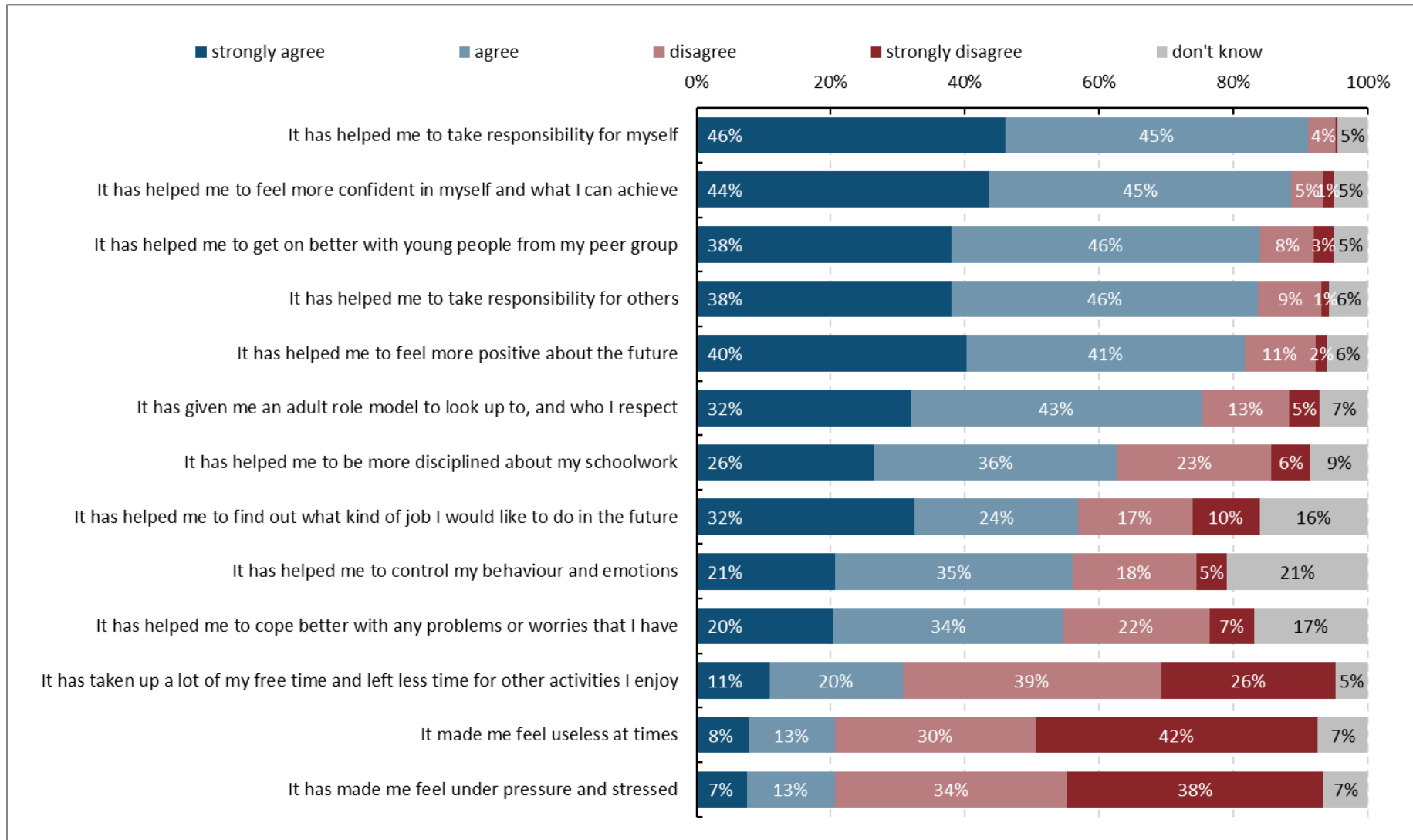
The sense of pride in wearing the uniform and being a part of the cadet movement was also mentioned on a number of separate occasions within the focus groups. This was described both as a personal source of satisfaction: "*a sense of pride to wear the uniform and to learn the drills and skills*", and in some instances as a source of external recognition – particularly from family or friends: "*it makes me happy doing parades as my family told me they were proud of me*".

The activities that students described enjoying the least largely mirrored the above, with students invariably finding long hours in the classroom off-putting. More specifically, a number of students expressed frustration that they did not always see a direct connection between the theory sessions, and the outdoor activities, which led them to further question the value of the classroom time. Other activities that were enjoyed less included where students found particular activities to be too strenuous or physically demanding (the example of 'bleep tests' had the resounding disapproval of students in one focus group).

Other aspects of being in cadets that were less positive related to difficulties with transportation; especially where the cadet activities took place at a host school or unit some distance from where students lived, and required a long bus journey on a regular basis. Some tensions were also reported, where there had been miscommunication between the cadet unit and the school. Students cited instances where cadet exercises had clashed with a school field trip or Duke of Edinburgh Award scheme, and school staff had been largely unsympathetic. Similarly, students in one focus group recounted how they had got into trouble after a hard endurance weekend with the CCF put them behind with a homework assignment. These clashes were not said to occur on a regular basis, however, and any tensions were largely felt to derive from teachers' underlying attitudes towards the CCF. The focus groups highlighted that, while cadets often received a positive response and status within the school, this was not exclusively so, and some students reported not being taken seriously by teaching staff or some of their peers.

In the survey, CEP cadets were asked to self-assess any positive (and negative) effects and perceptions that may have resulted from their participation in the Cadet Force. The vast majority of cadets report improvements across a range of positive outcomes, such as confidence, self-care and discipline, while less than one third reporting negative outcomes such as taking up free time or feeling under pressure (see Figure 13)

Figure 15 Perceptions that may have resulted from their participation in the Cadet Force



Note: Survey on CEP cadets, n=348, answer options: very satisfied, quite satisfied, not very satisfied, not satisfied at all, does not apply.

Most frequently, outcome improvements were reported for taking greater responsibility for oneself (91%), greater self-confidence (89%), improvements of the relationship with the peer group (84%), as well as taking greater responsibility for others (84%). Least frequently named outcome improvements are being able to cope better with one's problems or worries (55%), control one's behaviour and emotions (56%) and helped to determine what kind of job they would like in the future (57%).

However, in line with what was found earlier when discussing the least favourite aspects of being a cadet, one in three surveyed cadets stated that being a cadet has taken up a lot of their free time, with less time for other activities they enjoyed. Interestingly, around one in five respondents agreed or strongly agreed that being part of the cadets made them feel useless at times, as well as stressed and under pressure. However, this compares favourably to the same statement on the Rosenbaum self-confidence scale where around 40% of CEP cadets said that in general they felt useless at times. This may hint at an increased self-perception of capacity when engaged in cadet activities.

7. Benefits of cadet programmes for schools

While the Cadet Expansion Programme is expected to produce improvements in attitudinal and educational outcomes at the individual level, there is also an expectation that it will affect the school as a whole. The following chapter examines the potential impacts on the school ethos, partnership working, the effectiveness of CEP and suggestions for the retention and expansion of the CEP programme to other schools.

7.1. Ethos

Cadet instructors / SSIs were generally cautious in attributing any improvements in students' school attendance, behaviour or attainment to their participation in cadet activities – especially so at a cohort level, or across whole year groups. This was largely due to not being in a position to observe students on a more regular basis outside cadet activities, meaning that most of the benefits were inferred from what they had seen during cadets. In the main, SSIs believed that the same principles of self-discipline, self-organisation and leadership skills were wholly transferable to other areas of school life. This was sometimes reinforced by information passed-on by teachers, although there was usually little evidence of more systematic feedback mechanisms having been set in place between cadet instructors and other teaching staff.

On an individual level, cadet membership was understood to have made a real difference for a minority of students who had struggled to integrate socially at school; either withdrawing or becoming disruptive or violent in the classroom. One SSI described cadets as being “...*another chance for a student to find their niche in school life*”, in this respect. Moreover, it was not uncommon for cadet activities to be utilised directly as a tool for challenging students' behaviour – whether by reminding students of the values they represented (“*I wouldn't have expected that from a cadet*”), or threatening to report poor behaviour to their cadet instructor / SSI. The sanction of withholding participation in cadet activities was not always supported by SSIs, however, some of whom saw this as being counterproductive when the CCF unit provided one of the only settings within which students with more challenging behaviour would engage.

Where they had picked-up on benefits outside of CCF, the SSIs who were interviewed spoke anecdotally of improvements to self-confidence within the cohort: “...*cadets are speaking out more in drama now*”, or of students being more inquisitive in the classroom: “*some of the cadets have used their knowledge to remind Geography teachers of six-figure grid references*”. Wider benefits for the whole school were also inferred from the mixing between year groups, which was comparatively unusual outside of cadets.

SSIs, governors and headteachers alike identified further advantages for schools from hosting a CCF unit, in the kudos this brought with parents and the wider community. It was not uncommon for state schools in particular to view their cadet programme as an

asset when showcasing their range of extra-curricular activities and clubs to prospective parents and students. Moreover, hosting a CCF unit often had connotations of independent school education, and gave state schools added kudos. The presence of cadets at community events such as Remembrance Day often also provided a tangible way to raise the profile of the school within the local community:

“[The CCF unit] enables the school to stand out from the crowd, by doing something different, and in doing so; [to] engage with the local community and local community cadet unit. The link is much stronger, and mutually beneficial, now.”

“It gives us an opening and a vehicle to really engage in quite a high profile way, that’s in a very confident way, with the local community.”

Benefits for community included for instance, work on community areas (e.g. parks or playgrounds) and contributing to community events (e.g. helpers at local sporting events). For the school, benefits included the added reputation of the school within the community, possibly access to facilities, as well as the support of the community for cadet events.

Those involved in setting-up cadet programmes were generally aware of these selling points, and made the most of them when seeking to make a case to headteachers. However, one SSI expressed frustration that the CCF unit was sometimes used as a ‘marketing tool’ by the school, and noted that this did not always translate into a fuller appreciation of the value of cadet membership. Furthermore, although it was rare, CCF units encountered some degree of resistance from individual teachers, who held more negative views about uniformed youth groups. It often proved necessary to challenge these attitudes over a period of time, as the unit became more established.

7.2. Partnership working

The partnerships within the case study research varied in the length of time they had run a CCF unit. Those schools where cadet activities were newly established generally thought it was too soon to know or recognise the benefits of being affiliated with a host school. In contrast, a few of the partner schools within the case study sample had operated for longer and spoke highly of the advantages of having been able to draw upon the expertise and resources of the host school. The collegiate arrangements fostered by the CEP were valued by participating schools, and were thought to offer economies of scale in recruiting staff and volunteers to support the programme.

School staff and instructors were sometimes wary of talking about the social class differences between independent and state funded schools, or suggestions that cadets might be more beneficial for students of one background or another. However, a number of the schools perceived that their local CCF unit had achieved a levelling effect; enabling

students from different backgrounds to participate on an equal footing. This was usually considered to have been beneficial to both host and partner school(s):

“It breaks down social barriers. Students here were nervous at first, but now they like the students from the other school.”

“It takes a lot of confidence to go to a private school and compete on the same level as their students, just even to have a conversation with them. It took time but now it’s going really well.”

“Partnership means mixing with people who go to state schools and have a much broader experience of the full social and economic makeup of British society, and that is only of... enormous value.”

Staff from a boys’ school noted how the cadet experience had brought the students into contact with girls, through their partnership with a mixed entry school. This was thought to have been a very positive experience in taking the boys out of their comfort zone and enabling them to develop new social skills through the cadet activities. One Adult Volunteer reported of an occasion when one of her cadets explained that he wanted his children to go to a school like the partner school. The CFAV noted he would need a very good job to be able to afford that, at which point the cadet responded that he would study harder. Although these are anecdotal examples, they highlight the opportunities for raising aspirations as a basis to improve social capital.

These views were echoed in the student focus groups, where students routinely commented on the benefits of having the opportunity to meet and socialise with students from other schools, of different ages and social backgrounds. A number of students from state funded schools had been apprehensive about joining a CCF unit hosted at an independent school, but they nearly always found this to be a positive experience. There were no reported incidences of stigma or tension between students from host and partner schools within the case study sample.

A different aspect of partnership working relates to cooperation with local cadet units. Teachers and cadet staff were very aware and sensitive not to affect the work that local community cadet detachments were doing. Wherever possible, cadet instructors aimed to cooperate with local cadet units. Some have entered into close cooperation with the community units to share equipment and facilities, generally on different days and times. This was facilitated by many School Staff Instructors and Adult Volunteers being involved in the community unit as well. Nevertheless, there had been extensive research by some schools to analyse any effects of the school-based unit on the community unit.

7.3. Effectiveness of the CEP

At this stage, schools were unable to quantify the benefits the CEP has had for their school so far. This was partially because some were still in the early stages and the number of their parading cadets was very small. Overall, Contingent Commanders and SSIs were extremely positive about the effects of cadet participation on students. Having the unit within the school allowed them to monitor student performance and development. One Contingent Commander explained:

'Being in this situation [in the school] is an advantage as I know their background history, I know that they are FSM [receive free school meals], I can see their behavioural records, their academic achievements or lack of so I'm able to judge them ... and know I'm not going to be pitching something to somebody who has no idea what I'm talking about.'

However, there is also some evidence that there are unresolved communication issues and a lack of understanding of the relevant contexts within schools as well as the armed forces. Several headteachers and governors commented that at Brigade level there was little understanding of the pressures within which schools operate. It was difficult for schools to have to comply with the differing demands, while also dealing with competing pressures. These kinds of issues hampered communication and processes, and ultimately the effectiveness of the programmes. Raising awareness of school processes and procedures at brigade level or equivalent may help overcome clashes of the different organisational cultures and improve communication.

7.4. Retention and Expansion

Overall, the case study schools felt the programme was extremely worthwhile to engage in and any school considering to start a school-based cadet unit should be supported.

'I think it's a great opportunity and I would really encourage any school if they possibly had the chance to, to take it up. Because just to see the cadets' faces and to see them changing and evolving and get these key skills, it's just really quite a proud moment.'

Most case study schools indicated that they had put longer term plans into place with regards to how they intended to develop their personnel, grow their units in terms of cadet numbers and, in the case of partnership units, become a standalone unit. From what was outlined, these plans follow sensible patterns and strategies. However, funding and access to facilities as well as staff training and retention are the big obstacles that the schools have to contend with.

Those schools that were currently working in partnership had either set a date when they planned to start on their own or had set a target in terms of participant numbers when a standalone unit would be feasible. SCEOs and Brigades judged that the readiness to

start a standalone unit differed widely. Some schools had the necessary staff and funding in place and had developed a strategy, while they saw some schools that they felt had no intention to separate from their host school. While not compliant with the intentions of the policy, for some schools remaining a partnership unit with an established cadet unit may be the most feasible option to establish sustainable opportunities for their students to engage in cadet activities.

Current CEP schools identified the following considerations for expanding the cadet programme:

- **Staffing is essential.** Having qualified staff available was at the core of any school's ability to successfully implement a programme. This required the recruitment of enthusiastic staff from amongst the teachers who were willing to give up some of their time for cadets, which included some holidays and weekends. Due to competing pressures this proved difficult and the school needs to put in place policies to free up some staff time. Equally, the s-Services need to offer sufficient training opportunities and explore different formats of delivering training so it would become accessible more easily (e.g. online delivery through Massive Open Online Courses (MOOCs) or webinars). Due to funding cuts, some brigades had to drastically reduce their training offer which affected the amount of staff schools could put through training, which then affected the smooth implementation of the programme within schools.
- **A substantial lead-in time is required.** Schools indicated that at least one year was required to train staff comprehensively to the required levels. Due to the different structures within the service sections and the civilian world training was not available at all times. There was also a substantial amount of planning time necessary to get the unit started. Included in this was getting the unit registered and approved and then ordering the necessary equipment, as well as securing the necessary facilities, where they were not available at schools. Included in this planning time was also the time to build relationships with the partner school as well as with the community unit (if present) and the wider community.
- **Having senior level buy-in is necessary.** Schools pointed out that there needed to be a great deal of support from headteachers and governors not only in the start-up phase of the programme but throughout. This was important to allow for the necessary staffing arrangements as well as to support the programme in case of any resistance from other teaching staff. It was difficult for committed individuals to implement a consistently functional cadet unit at a school without senior level support.
- **Funding was important for schools;** especially those in more deprived areas. Schools pointed out that they were committed to the programme and that they would have tried to find the funding. However, there was a recognition that schools

in the most deprived areas, which were those that the programme aimed to reach in the first place, were discouraged from engaging with the programme before the funding requirement was removed. It was therefore important to establish very clear and transparent funding mechanisms to make it as easy as possible to apply for funding.

- **Increasing awareness of the cadet programme and establishing personal relationships helps to break down barriers.** Case study schools outlined that it was a difficult step for a school to engage in cadets, if there had been no prior contact with the programme or knowledge of cadets at all. In order to address this, publicity as well as information visits to established units in schools were seen as effective means.

'You can write as many letters as you want but unless you see it in action and see the effect it has on the pupils, that's the only way forwards'.

Publicity and increasing general knowledge about cadets was seen as vital because those currently involved with CEP felt that there was still widespread lack of awareness about the purpose and aims of cadets. It was important to highlight that cadets were not a feeder organisation for the armed forces, but rather a youth organisation that supported young people in developing life skills, similar to other youth groups.

- **Creating more opportunities to develop partnerships.** Partnership models, whether with an independent school, a community unit or a current CEP school (where capacity made this possible) were seen as effective means to facilitate the process of establishing more units in schools. The first-hand experience of current CEP schools made it easier for new schools to learn the process, while the staff experience from independent schools or community units facilitated staff learning and possible opportunities for social capital exchanges.

8. Conclusion and Recommendations

The overall aim of the research project was to better understand how being a cadet affects young people's outcomes, and to demonstrate the benefits and challenges of Combined Cadet Force (CCF) units within state funded schools. The research used a mixed methods approach. Nine case studies explored school motivations to participate in the Cadet Expansion Programme and the challenges schools encountered in establishing and running their units. Additionally, a survey was carried out which examined the cadet experience, motivations of young people to get involved and a number of self-assessments of the effects the cadet experience has produced. This included a comparison of the CEP survey respondents with a propensity score matched comparison group of LSYPE respondents to establish how cadets differed in some characteristics from a similar population of young people.

Overall, the findings show that young people viewed participation in the cadets as a great opportunity to develop skills and push their boundaries in a controlled and supervised environment. The results of the self-assessment questions administered via the cadet survey confirm that CEP cadets attributed improved levels of self-confidence, self-efficacy, independence and coping in social relationships to their participation in local cadet programme(s). This finding must be approached with caution, however, as cadet participation cannot be established as the sole factor influencing these effects. For instance, a substantial number of cadets also participate in other structured activities (e.g. scouts, youth clubs, sports) that have been shown to achieve similar effects. At a more general level, cadets are not that dissimilar in their engagement in school and attitudes towards school than a matched comparison group.

While students did not always participate exclusively in school-based cadet activities and some also had experience of being in a community unit, the case study evidence showed positive indications that CCFs have the potential to boost cadet participation. This was achieved by offering a more physically accessible means of trying out activities – via a school base, and in breaking down potential barriers for young people by enabling participation in a more familiar environment alongside their peers. There was evidence that for some young people at least, this provided a tipping point for trying out cadet activities where they would not have joined a community unit. Indeed, bringing the unit to the school often greatly assisted with demystifying cadet activities and tackling preconceptions about 'the military'.

The analysis of the matched administrative data regarding the educational outcomes showed an overall positive effect of cadet participation, but with substantial underlying differences between the different service sections. Participation in the RAF cadets had a positive impact on educational outcomes, while participation in the Army and Sea Cadets had neither a positive nor a negative effect on educational outcomes in comparison with their matched counterparts. These differences may be due to factors that are unobservable in the available data (e.g. motivations prior to joining cadets, resilience, or

confidence levels within the participant group). While there is anecdotal evidence from the qualitative analysis that cadet participation positively affects these attributes, further research is required to fully understand how they affect educational outcomes and how young people decide to join the cadets.

The process evaluation produced important insights about the challenges and opportunities that school wishing to engage in the CEP face. Overall, there is evidence that those schools who are currently engaged in the Cadet Expansion Programme are extremely committed to the programme, which has been a key source of their success and a motivator to overcome any difficulties they encountered along the way. There was also a widespread commitment to finding ways to make cadet activities sustainable, and schools within a partnership or hub-and-spoke model often aspired towards establishing a stand-alone unit in the longer term. In the shorter term, these partnership arrangements were often a valuable point of collaboration between schools and fostered a spirit of open-mindedness – especially so where students from independent and state schools were brought together.

Primary enablers during the set-up phase were the SCEOs / MSSC Development Officers who brokered partnerships and provided general information and wide-ranging support, as well as the brigades, and in the case of the sea cadets the Development Officers, who provided training support and access to equipment once the units were approved. While there were frictions at times due to the different organisational cultures between schools and the armed forces, the focus on implementing a functioning unit helped to overcome this.

8.1. Recommendations

A number of recommendations can be identified on the basis of the study evidence. These are now summarised in turn.

Recommendation: *It should be considered to support the transitioning process from the set-up phase to parading unit more intensively to capitalise on established relationships and facilitate a smoother implementation process.*

Preparation to start a CEP unit at a school took a considerable amount of time. This included for instance establishing partnerships, gaining the support of school leadership and school governing boards, establishing the unit finances, recruiting staff and getting the necessary qualifications, acquiring equipment and sourcing the necessary facilities.

Recommendation: *Allow for a minimum of a one year start-up period for schools to prepare the launch of their unit with the necessary support through SCEOs/ MSSC Development Workers in place.*

Key in this process were staff who had prior knowledge of cadets either through being involved in a community unit or through previous involvement at a school. Those schools

who had experienced Contingent Commanders appeared to struggle less, even though in some instances 'language issues' across the different branches of the armed forces posed a solvable problem. A general issue around sign-posting to resources and pathways for approval was identified by schools.

Recommendation: *Develop a "How to" guide for schools which explains the language, critical pathways to apply for the necessary approvals, equipment, and so forth, which would enhance a general understanding of the armed forces context and facilitate better understanding of the different organisational cultures. This could be placed at MoD level or with sServices.*

Conversely, schools outlined a need for a better understanding from Brigades and their equivalents of the school environment, its processes and procedures as well as the particular issues surrounding time tabling. Schools hoped this would improve the communication and understanding of organisational cultures and thus improve co-operation between the different institutions.

Recommendation: *Provide a DfE briefing note or seminar for relevant personnel at brigade level or equivalent that provides insight into the day-to-day management aspects of schools, to highlight competing pressures on school staff and increase sensitivity for the engagement of adult volunteers.*

The recruitment of Adult Volunteer staff was a particular issue for most schools, from a recruitment and retention perspective. The extensive time commitment inside and outside of school, as well as the extensive training requirements were seen as off-putting by some. At the same time, this ensured that only staff who truly believed in the programme and were willing to commit to it would support it. However, the lack of training opportunities proved a serious obstacle for some schools, which affected their ability to implement programmes fully and as a side effect may have impacts on cadet retention.

Recommendation: *Examine the possibilities to deliver different training pathways and resource sharing (e.g. online learning, access to training opportunities with other brigades) to allow smooth progression and retention of adult volunteers.*

Funding was a key issue for most schools. Many raised issues about the conflicting messages over the school contribution in the initial phases and there was a perception that this insecurity deterred schools, particularly those serving deprived areas, from engaging with the programme.

Recommendation: *Develop a clear and transparent funding structure that is clearly laid out to schools and enables them to develop longer term strategies for their units.*

The positioning of cadets within the schools was important in terms of allowing access. Where it formed part of the enrichment programme, there were fewer issues with staff time being freed up and organisation. Where cadets formed part of extracurricular

activities, the commitment of the school leaders was essential, as well as the commitment of teaching staff to provide some of their spare time.

Recommendation: *Where possible, retain cadets as part of the school enrichment programme to facilitate staff availability and recognition for the engagement in cadets.*

There were some mixed messages regarding the understanding of the type of organisation the cadets are and their aims which led to resistance among teaching staff to support the implementation of a unit. For teachers in particular, viewing cadet activities as an integral part of the school's offer of positive activities for students is important to avoiding cadet activities being viewed as peripheral, and school-based units offer the potential to do this. Contingent Commanders and SSIs also reported having to work hard to establish community relationships due to a similar lack of knowledge about cadets.

Recommendation: *Raise awareness and increase knowledge of the wider population about cadets as an organisation more widely to facilitate the work that community as well as school-based units are doing.*

8.2. Future research

While this research has shed some light on the processes involved in setting-up school based cadet units and the challenges and opportunities, there are wider aspects that this research has not been able to address. This includes for instance a comparative assessment of soft-outcomes such as self-confidence, self-efficacy and emotional intelligence. Additionally, adapting the study of Scout membership and its effects on long-term mental health (Dibben, Playford and Mitchell (2016)) for cadets might be an interesting avenue to explore to see if cadet membership produces positive outcomes in this regard. This would require data matching of cadets data with the relevant administrative datasets.

Further research may also be required regarding the particular strengths and development opportunities of the different CEP implementation models with a focus on the contextual requirements that make certain models more preferable than others. Additionally, there is a need to carry out a cost-benefit analysis of establishing cadet units particularly with regards to creating social capital and the social return on investment they create.

The comparative analysis of administrative data into the educational outcomes highlighted a further need to explore underlying motivations for joining the cadets. The limitations of the current study lay primarily in the lack of knowledge about underlying motivations to join the different Cadet Forces. Qualitative research would primarily allow more in-depth exploration of these issues in combination with a longitudinal tracking study that observes motivations and attitudes.

There is also a need to explore the effects that cadet membership have on the progression of student achievement at KS4. The current study was limited to studying high achieving students (5 A*-C grades at GCSE). However, an argument could be made that cadet membership may help those students with lower achievement levels (below 5 A*-C) to improve. While they may not achieve 5 A*-C grades, improvement from an E grade to D would still be a positive outcome. Further analysis of administrative data would be required for this.

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Annex 2. Data cleaning process

Overview

Ecorys received different datasets from the Ministry of Defence (MoD), Marine Society and Sea Cadets (MSSC) and the Department for Education (DfE), was cleaned, merged and prepared for the analysis conducted in this study. The following describes how these steps affected the number of cadets included in the analysis from the original lists of cadets provided by the MoD and MSSC. The substantial reduction is due to the fact that the maximum number of cadets which could be used for the analysis was constrained by the number of cadets consistently identified across all sub-datasets used for the analysis.

Description of datasets received

Ecorys was provided with two types of datasets:

- Three lists (datasets) including Royal Air Force (RAF) cadets (mainly in List 1), Army cadets (mainly in List 2) and Sea Cadets (mainly in List 3)³⁵ from the MoD and MSSC
- Six dataset extracts from the National Pupil Database (NPD) from the DfE.

The datasets contained a Unique ID to identify the cadets within each list and to link them to the NPD data, the cadets' engagement start and end date, the service section to which they belonged and additional information on qualification obtained within the cadet forces and reasons for leaving. The number of cadets in each list is displayed in Table 10 below.

Table 10 – Number of cadets in MoD lists

	List 1 (RAF)	List 2 (Army)	List 3 (Sea)
Number of cadets	153,780	48,109	33,669

Ecorys also received NPD dataset extracts for the cadets included in the above mentioned lists. The group of cadets within the NPD data was identified by Capgemini on behalf of the DfE using data on cadets provided by the MoD and the MSSC. It was then submitted to Ecorys for analysis in anonymised form.

NPD data is organised in several sub-datasets. For this analysis the following were used:

- School census dataset
- Key Stage 2 dataset

³⁵ Sea cadets were identified as Royal Marine and Royal Navy cadets in the dataset, but it was agreed with the DfE and MSSC to subsume these under the category Sea Cadets.

- Key Stage 3 dataset
- Key Stage 4 dataset
- Absences dataset
- Exclusions dataset

It is important to note that NPD data was provided for all three lists separately and that cadets were identified in all different NPD sub-datasets separately. This implies that the maximum number of cadets, which could be used for the analysis were constraint by the number of cadets consistently identified across all sub-datasets used for the analysis.

Table 11 below shows the number of cadets in each dataset and by List.

Table 11 Number of cadets identified in NPD datasets

	List 1 (RAF)	List 2 (Army)	List 3 (Sea)
KS2 datasets	99,334	28,680	14,936
KS3 datasets	84,185	30,114	10,520
KS4 datasets	70,880	26,965	7,126
School Census	104,654	29,338	15,226
Absences	102,603	29,213	15,207
Exclusions	13,576	11,199	3,564

Description of merging process in detail

This section describes the process of merging the different datasets (MoD/ MSSC Cadets dataset and various NPD datasets) to create one single dataset containing all relevant variables for the analysis. Taking into account that data was provided in three separate lists the merging process was done for each of the lists separately.

Step 1: Merge MoD/ MSSC Cadets dataset to KS4 dataset

First, MOD/ MSSC data was merged to KS4 data, as KS4 data contained the selected outcomes of interest. Hence, only cadets for whom KS4 data was available would be included in the analysis. All those cadets for whom KS4 data was not available (i.e. which could not be matched) were dropped.

The table below shows the figures obtained by this merging process. Originally, List 1 (RAF) contained 153,780 cadets, in List 2 (Army) there were 48,109 cadets and List 3 (Sea) contained 33,669 cadets. When merging the lists to the KS4 dataset, some cadets from the MoD/ MSSC dataset did not appear in the KS4 dataset and thus they could not be merged. Please also see Table 11 above, which illustrates that the maximum number of observations available in the KS4 dataset was well below the number of observations included in the MOD/ MSSC datasets.

The number of these unmatched cadets is shown in the second row. The number of matched cadets, which were kept for continued merging steps, appears in the second-last row. It should be noted that in this step, around half of the cadets or more on which

data was provided by the MoD and MSSC were dropped for the purposes of our analysis. The fact that the cadets provided were not identified could be due a number of reasons, for instance that the cadets included in the datasets provided by the MoD and MSSC had not reached KS4 by 2014/2015 (i.e. they were too young to be included in the analysis).

Table 12 Merging to KS4 dataset

	List 1 (RAF)	List2 (Army)	List 3 (Sea)
Number of observations in MoD/ MSSC data (i.e. Number of cadets)	153,780	48,109	33,669
Merge MOD/ MSSC to KS4			
Not matched (dropped)	83,223	21,305	26,571
from master dataset	83,223	21,305	26,571
from KS4 dataset	0	0	0
Matched	70,880	26,965	7,126
Observations kept in dataset	70,880	26,965	7,126

Step 2: Merge to KS2 dataset

Second, we used the new dataset created which contained MoD/ MSSC data and KS4 data and merged it to the KS2 dataset. All those cadets for whom KS2 was not found, i.e. cadets in the master dataset that could not be merged to KS2 dataset, were dropped, the reason being that KS2 attainment data is a key background variable without which the analysis cannot be performed. Furthermore, there were a number of individuals in the KS2 dataset that did not appear in the master dataset. These were also dropped to ensure a balanced dataset. The number of observations kept in each List is shown in the last row of Table 13.

Table 13 Merging to KS2 dataset

	List 1 (RAF)	List2 (Army)	List 3 (Sea)
Not matched (dropped)	35,600	3,489	8,365
from master dataset	3,448	813	266
from KS2 dataset	32,152	2,676	8,099
Matched	67,446	26,153	6,861
Observations kept in dataset ³⁶	67,446	26,153	6,861

Step 3: Merge previously constructed dataset to Census Data

Third, we merged the master dataset (now containing MoD/ MSSC data, KS4 and KS2 data) to the School Census dataset. All cadets that were not found in the Census dataset were dropped in order to ensure that complete background data was available for all cadets. Furthermore, there were a number of individuals in the Census dataset that did not appear in the master dataset. These have also been dropped to ensure a balanced dataset. The number of observations kept in each List is shown in the last row of Table 14.

Table 14 Merging to School Census data

	List 1 (RAF)	List2 (Army)	List 3 (Sea)
Not matched (dropped)	37,482	3,490	1,856
from master dataset	3	81	1,324
from Census dataset	37,479	3,409	532
Matched	67,443	26,072	5,537
Observations kept in dataset	67,443	26,072	5,537

³⁶ Note that the number of matched observations and not matched from master dataset should add up to the number of observations kept shown in the last row of the previous table. This is not the case because of the creation of duplicates during the merging process. This also applies to the subsequent tables.

Step 4: Merge previously constructed dataset to KS3 dataset

Fourth, the master dataset (now containing MoD/ MSSC data, KS4, KS2 and Census data) was merged to KS3 dataset. This time only those cadets from the KS3 dataset that were not found in the master dataset and could not be matched were dropped (row 3 in Table 6 below). Individuals in the master dataset for whom KS3 data was not available have been kept, the reason being that KS3 data is not as complete and consistent as the previously used datasets and that KS3 data was not used in the final analysis. The number of observations kept in each List is shown in the last row of Table 5.

Table 15 Merging to KS3 dataset

	List 1 (RAF)	List2 (Army)	List 3 (Sea)
Not matched	18,521	3,624	4,930
from master dataset (kept)	2,087	341	94
from KS3 dataset (dropped)	16,434	3,283	4,836
Matched	68,003	26,961	5,708
Observations kept in dataset	70,090	27,302	5,802

Step 5: Merge previously constructed dataset to Absences and Exclusions

The last step was to merge the master dataset to absences and exclusions datasets. Similar to the previous Step 4, we only dropped those observations from the absences and exclusions dataset that did not appear in the master dataset. The reason for not dropping individuals in the master dataset who do not appear in the absences and exclusion datasets is that absences and exclusions are only recorded for those who experience them. Thus, not having a record in these datasets means that the individual has not been absent or excluded, which was information necessary for the analysis. Dropping these individuals would skew the results towards the more troubled pupils. Tables 16 and 17 summarise these merging processes.

Table 16 Merging to Absences dataset

	List 1 (RAF)	List2 (Army)	List 3 (Sea)
Not matched	37,950	3,384	9,703
from master dataset (kept)	1,262	48	4
from Absences dataset (dropped)	36,688	336	9,699
Matched	68,828	27,254	5,798
Observations kept in dataset	70,090	27,302	5,802

Table 17 Merging to Exclusions dataset

	List 1 (RAF)	List2 (Army)	List 3 (Sea)
Not matched	66,005	20,948	5,804
from master dataset (kept)	63,300	20,165	4,469
from Absences dataset (dropped)	2,705	783	1,335
Matched	6,790	7,137	1,333
Observations kept in dataset	70,090	27,302	5,802

Merged dataset size

The merging process just described led to one single dataset for each of the Lists. The size of these datasets is displayed in Table 18.

Table 18 Merged datasets size

	List 1 (RAF)	List2 (Army)	List 3 (Sea)
Observations kept in dataset	70,090	27,302	5,802

Exclusion rules

In order to work with a consistent dataset to produce a coherent analysis we proceeded to apply a number of exclusion rules, which were based on theoretical considerations. This sample was restricted to:

- those individuals who spent more than one year in the cadets,
- who had achieved Key Stage 4 results between 2009 and 2014, and
- who joined the cadets age 12 or older.

These restrictions were applied to ensure consistency across different service sections and over time, as well as taking into account only those for whom cadet membership could have realistically had an effect, i.e. those with more serious commitment to the cadet forces. Table 19 shows the number of observations left in each List after applying the different exclusion rules. The last step involved dropping all those observations that were duplicates. When analysing the received datasets we found that some observations were duplicates. We believe this is due to either some pupils resitting exams for the different Key Stages or changing schools in the middle of an academic year and thus being recorded twice by two different schools. Furthermore, throughout the merging process further duplication may have occurred. Thus, in the last step we selected only one observation and dropped the duplicate ones, so that every cadet appeared only once in the dataset.

Table 19 Exclusion rules

Exclusion rules	List 1 (RAF)	List2 (Army)	List 3 (Sea)
Initial sample size	70,090	27,302	5,802
Exclude those who spent a NEGATIVE time in the cadets	69,961	27,292	5,787
Exclude those who spent less than one year in the Cadets	51,264	18,197	3,338
Only keep those who achieved KS4 in the past 5 years (2014 - 2009)	45,187	18,197	3,338
Exclude those that joined the Cadets less than one year before KS4	43,153	18,183	3,298
Drop younger than 12	43,069	18,166	2,555
Drop if finished KS4 before age 15	43,069	18,166	2,555
Drop duplicates	41,210	17,220	2,423
Final sample size	41,210	17,220	2,423

Append lists

The final step to obtain the dataset used for the analysis is to append the different lists. After doing so, it was found that some cadets had taken part in more than one service section creating duplicate observations in the dataset, which have also been dropped to avoid duplicating the effect of these cadets in particular. For the selection of which observation was kept a randomisation algorithm was used. Table 20 below show the number of duplicate observations and the final number of observations used for the PSM analysis.

Table 20 Final Sample size

Total observations	60,853
Duplicated observations	155
Total observations after dropping duplicates	60,698

Annex 3. Technical appendix – Propensity score matching

Overview

Beyond describing the differences between cadets and non-cadets prior to them joining the Cadet Force, this study is interested in understanding the causal impact of cadet membership on educational outcomes. It aims to establish if being a cadet has made a positive (or negative) contribution to young people's educational attainment and attendance at Key Stage 4, potentially setting them on a positive trajectory for further education and employment.

However, one can not simply compare these outcomes for cadets and non-cadets, as initial differences in the socio-economic and educational background of both groups may bias the results. RAF Cadets, for example, may display more positive results than non-cadets at Key Stage 4 simply because they had higher educational attainment at Key Stage 2 already and continued on this positive trajectory. To control for differences in the background between cadets and non-cadets, this analysis applied Propensity Score Matching (PSM) taking into account differences in age, gender, ethnicity, mother-tongue, free school meal status, special educational need and English/Mathematics attainment at Key Stage 2.

It is important to keep in mind that the methodology applied can only control for background factors, which are observable (e.g. it is 'observable' if someone is eligible for FSM or not) and for which data is available in the NPD. It can not control for any unobservable differences, e.g. differences in the motivation, resilience or self-esteem of cadets versus non-cadets prior to joining the cadets. This implies that a certain degree of bias of our estimates of the impact of cadet membership on education outcomes may exist even after controlling for differences in background characteristics.

The following outcomes were compared across treatment (cadets) and comparison group (non-cadets):

- Educational attainment - % of young people who achieved 5 A*- C GCSEs
- Absences - % of young people with less than 85% attendance at KS4
- Fixed-term exclusions - % of young people with at least one fixed-term exclusion in their last year of KS4
- Permanent exclusions - % of young people with at least one permanent exclusion in their last year of KS4.

Results are presented for the Cadet Force overall and the different service sections separately. It should be noted that the comparison group, which is statistically generated

for the overall Cadet Force and the different service sections, varies in its composition to mimic the characteristics of the Cadet Force and different sub-sections. This explains why outcomes for the comparison group vary in the different sub-sections of the analysis.

All results are displayed as ranges, e.g. 60-62% achieved 5 A*-C GCSEs or more, paying justice to the fact those different matching algorithms lead to slightly different results. We only display ranges for the matched comparison group to aid the readability of the report, as it is difficult to compare and contrast two ranges. In most cases, different algorithms lead to similar results for the treatment group and display greater variation for the matched comparison group. Where different algorithms lead to different results for the treatment group, we included the most frequent and/or plausible value.

These matching methods provide the opportunity to mimic an experimental setting and the construction a comparison group that is as similar as possible to the CEP cadets (treatment group) when it comes to observable factors relevant to the characteristics under analysis, such as socio-economic background. Essentially, matching aims to construct 'statistical twins' in the CEP cadet and comparison group and compare their characteristics. There are different ways to implement this matching process with one of the most common being propensity score matching using a variety of different matching algorithms.³⁷

Theoretical justification – potential outcome framework

Counterfactual analysis compares the real observed outcomes with the outcomes of an alternative reality – with what would have happened if a programme or policy had not been in place. Unfortunately, we can never observe a counterfactual directly, but have to approximate it using a comparison group and statistical techniques³⁸.

The choice of an appropriate comparison group is at the heart of impact evaluation. As most outcomes can be affected by many factors other than the programme, all counterfactual research designs aim to exclude alternative explanation for the observed outcomes. The better the design is at excluding alternative explanations the higher the validity and reliability of the results. Propensity score matching (PSM) is used to generate a comparison group, which is similar to treated subjects (Rosenbaum and Rubin, 1985).³⁹

³⁷ Rosenbaum, P.R. and Rubin, D. B (1985), Constructing a Control Group Using Multivariate Matched Sampling Methods That Incorporate the Propensity Score. American Statistical Association, available at <http://personal.psc.isr.umich.edu/yuxie-web/files/soc710/Rosenbaum-Rubin1985.pdf>

³⁸ see also HM Treasury, (2011). The Magenta Book. Guidance for Evaluation, April 2011

³⁹ Rosenbaum, P.R. and Rubin, D. B (1985), Constructing a Control Group Using Multivariate Matched Sampling Methods That Incorporate the Propensity Score. American Statistical Association, available at <http://personal.psc.isr.umich.edu/yuxie-web/files/soc710/Rosenbaum-Rubin1985.pdf>

The methodology builds on three elements: subjects, treatment and potential outcomes following the evaluation framework set up by the Roy-Rubini-model. In this framework, Y_i (D_i) are defined as potential outcomes for subject i , where the treatment effect is defined as

$$\tau_i = Y_i(1) - Y_i(0)$$

1 indicating that the subject has participated in the treatment and 0 otherwise. The core issue is that we cannot observe both $Y_i(1)$ and $Y_i(0)$ – a subject can either only take part or not take part in an intervention, both cannot occur at the same time.

The parameter to be estimated is the ‘average treatment effect on the treated’ (ATT) defined as

$$E(\tau|D=1) = E[Y(1)|D=1] - E[Y(0)|D=1]$$

which is the average difference between a subject who was treated ‘ $E[Y(1)|D=1]$ ’ and a counterfactual subject ‘ $[Y(0)|D=1]$ ’ with regards to a variable ‘ Y ’ of interest (outcome). However, this counterfactual does not exist, as it is defined as ‘the outcome of a treated subject if it had not been treated’. Through PSM we construct a group of subjects as a comparison based on the probability of being treated by using observed variables. The average treatment effect (ATT) is the mean difference in outcomes provided the following two assumptions are true:

- Unobserved variables do not affect participation (conditional independence),
- Relevant common support or overlap of propensity scores for both treated group and control.

Data and data cleaning

Data cleaning and the merging of the different datasets was performed as outlined in the Data cleaning process).

Propensity Score Matching (PSM)

Outcome variables

In line with research questions for this study, outcomes of interest related to academic attendance and attainment. By using NPD data, the analysis was restricted to the outcome data available in these datasets. Outcome data at Key Stage 4 was used due to the fact that a.) young people are typically 15-16 when taking their GSCEs and hence will have had sufficient time in the Cadet Force to have experienced ‘impact’ of their participation; b.) data is consistently available and based on standardised assessments (in contrast to Key Stage 3 or Key Stage 5, where there is greater variation between schools and educational pathways).

The following outcomes were compared across treatment (cadets) and comparison group (non-cadets):

- Educational attainment - % of young people who achieved 5 A*- C GCSEs
- Absences - % of young people with less than 85% attendance at KS4
- Fixed-term exclusions - % of young people with at least one fixed-term exclusion in their last year of KS4
- Permanent exclusions - % of young people with at least one permanent exclusion in their last year of KS4.

Outcomes were chosen to represent shares of young people with certain outcomes, e.g. the % of young people with at least one permanent exclusion, to facilitate the intuitive interpretation of the results of the PSM.

Results are presented for the Cadet Force overall and the different service sections separately. It should be noted that the comparison group, which is statistically generated for the overall Cadet Force and the different service sections, varies in its composition to mimic the characteristics of the Cadet Force and different sub-sections. This explains why outcomes for the comparison group vary in the different sub-sections of the analysis.

All results are displayed as ranges, e.g. 60-62% achieved 5 A*-C GCSEs or more, paying justice to the fact those different matching algorithms lead to slightly different results. We only display ranges for the matched comparison group to aid the readability of the report, as it is difficult to compare and contrast two ranges. In most cases, different algorithms lead to similar results for the treatment group and display greater variation for the matched comparison group. Where different algorithms lead to different results for the treatment group, we included the most frequent and/or plausible value.

Matching variables

The first step of the PSM consisted in an analysis of which matching variables were good predictors of cadet participation overall and participation in the different sub-sections. We ran logistic and probit regressions with a binary variable (1 if subject is part of the cadets – under treatment and 0 if it is a non-cadet– not treated) for treatment as predicted and the matching:

$$\text{Treatment} = f[\text{Matching variables}]$$

We started with a basic model and theoretically based model (parsimonious) and added more variables to test their (joint) significance. Matching variables, identified as relevant through the regression and hence used in the final analysis were:

- Age, by year

- Gender, coded as a binary variable taking value 1 for men and 0 for women
- Ethnicity, coded as a categorical variable with five ethnic categories (white, black, asian, mixed, other)
- mother-tongue, coded as a categorical variable indicating whether the individual is an English native speaker (or believed to be an English native speaker), not an English native speaker (or believed to not be an English native speaker) or this is unknown.
- free school meal status, coded as a categorical variable indicating if the individual had never been eligible for free school meals, the individual had ever been eligible for free school meals or this is unknown.
- special educational need, coded as categorical variable indicating if the individual had known special educational need, the individual was not known to have special educational need, or this was unknown.
- English/Mathematics attainment at Key Stage 2, coded as categorical variables with four categories corresponding to having achieved level 2 or below, level 3, level 4 and level 5 or above of the national curriculum at Key Stage 2.

Binary variables (such as FSM status) included a third category corresponding to missing values to ensure a balanced dataset for the propensity score matching.

Choice of matching algorithms

The propensity score, i.e. the probability of being treated, was calculated based on the matching variables above. Different matching algorithms, i.e. ways to match the treated and non-treated subjects based on the propensity score, were tested. This included:

Regression Adjustment (RA): this algorithm fits separate regression models of the outcome for the treatment and comparison group. Based on these regression models it computes predicted outcomes for each subject in the treatment and comparison group. The average treatment effect is computed by averaging and contrasting these predicted outcomes between treatment and control group.

Nearest-neighbour matching (NN): this algorithm matches a subject in the treatment group with the closest subject in the comparison group as measured by the propensity score. Matching is performed with or without replacement, i.e. comparison subjects are only matched to one treated subject in the non-replacement case, while comparison subjects are used to generate several matches in the replacement case.

Inverse probability weighting (IPW): this algorithm uses estimated probability weights. After computing inverse probability weights using propensity scores generated by the treatment model, it computes weighted averages of the outcomes for the treatment and

comparison group. The average treatment effect is the difference between both averages.

Inverse probability weighted regression adjustment (PWRA): this algorithm combines the RA and IPW above, by using the computed inverse probability weights to fit one weighted regression model for the treatment and one regression model for the comparison group. Differences between the averages of the predicted values of each model are considered the average treatment effect.

Caliper or radius matching: the previous algorithm (NN) suffers from potentially large differences in the propensity scores between the treatment and control group. Caliper matching imposes a threshold of distance. The common rule of thumb is to use 20% of the Standard deviation of the propensity score series⁴⁰.

Kernel matching: this matching algorithm uses a weighted average of all comparison subjects to produce a counterfactual match. There are different kinds of Kernel estimators to which different types of bandwidths can be applied.

The final results included in this report are based on results obtained using Regression Adjustment, Inverse Probability Weighting (using two different methodologies) and Inverse Probability Weighted Regression Adjustment. The selection is based on the expected robustness of the estimates obtained with this algorithms and the feasibility of implementing them. The most commonly applied matching algorithm – Kernel matching – proved impossible to implement with the available data and results did not converge. While Inverse Probability Weighting is less commonly used than Kernel matching, it has been shown that IPW does not exhibit any significant bias and even surpasses Kernel matching in terms of precision⁴¹.

It should be noted that more generally all PSM models are based on the assumption that the matching variables included in the model fully control for differences between both groups. If important variables are omitted, for example because they cannot be measured such as motivation, this will bias the results.

Assessing the balancing property after the matching

The matching process ensures that a subset of the treated sample is compared to a similar or alike subset of the comparison sample based on the propensity score. We would expect that if the matching was successful, the difference in the matching variables, e.g. gender, age, between treated and non-treated will be smaller on average

⁴⁰ Caliendo, M. and Kopeinig, S. (2005), Some Practical Guidance for the Implementation of Propensity Score Matching. IZA DP No. 1588, available at <http://ftp.iza.org/dp1588.pdf>

⁴¹ Handouyahia, H., Haddad, H. and Eaton, F. (2013), Kernel Matching versus Inverse Probability Weighting: A Comparative Study, International Journal of Mathematical, Computational, Physical, Electrical and Computer Engineering Vol:7, No:8, <http://waset.org/publications/16101/kernel-matching-versus-inverse-probability-weighting-a-comparative-study>

after matching. In order to test this property, Caliendo (2005) proposes to use the standardised biases before and after matching as accurate measures, defined as:

$$SB_{\text{before}} = 100 \times \frac{(\text{Mean } X_T - \text{Mean } X_C)}{[0.5 \times (V_T(X) + V_C(X))]^{0.5}}$$

$$SB_{\text{after}} = 100 \times \frac{(\text{Mean } X_T - \text{Mean } X_C)}{[0.5 \times (V_T(X) + V_C(X))]^{0.5}}$$

We tested the balancing of matching variables after matching and found that the matching generally significantly improved the balance on these variables. However, we also found that including the matching variables additional to the generated propensity scores in the outcome model using the IPW improved the estimates, suggesting that some differences between groups may remain even after balancing.

Further analysis – LYPSE data

In addition to the impact of cadet membership on educational outcomes outlined above this study sought to provide a robust assessment of how CEP cadets differ from non-cadets across a range of characteristics, including engagement with school, home relationships and aspirations. This analysis was equally conducted by using PSM matching as described above.

The propensity score matching was performed using the LSPYE data as the source for a control group and our cadet survey as treated subjects. Both surveys have a set of common variables, some of which were used for matching, others were characteristics to be compared between CEP cadets and the comparison group. The final dataset included 13,100 subjects from the LSYPE dataset (comparison group) and the 348 cadet survey respondents (treatment group).

Matching variables included in both surveys, identified as relevant through logistic regression and hence used in the final analysis were: age, free school meal status, special educational needs, gender, as well as school type. The following characteristics were compared across the treatment and comparison group:

- School experiences and behaviour
- Family relationships
- Activities
- Aspirations

Different matching algorithms were tested and sensitivity analysis was performed. The final matching algorithm chosen was a kernel matching with a 0.01 bandwidth. The balancing properties were assessed after the matching.



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