



HEALTHY & POSITIVE AGEING INITIATIVE

A profile of adult learners in Ireland and positive ageing
outcomes: Evidence from the Programme for the
International Assessment of Adult Competencies (PIAAC)

2019

The Healthy and Positive Ageing Initiative (HaPAI) is a joint research programme led by the Department of Health with the Health Service Executive, Age-friendly Ireland and The Atlantic Philanthropies.

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PREFACE

This report was completed by the Healthy and Positive Ageing Initiative (HaPAI) in collaboration with the National Adult Literacy Agency (NALA).

HaPAI is a programme of research led by the Department of Health in association with the HSE, Age-Friendly Ireland, and the Atlantic Philanthropies. The HaPAI was established in order to achieve Goal 4 of the National Positive Ageing Strategy (1): *Support and use research about people as they age to better inform policy responses to population ageing in Ireland.* National Goal 4 involves two objectives:

- Continue to employ an evidence-informed approach to decision-making at all levels of planning; and,
- Promote the development of a comprehensive framework for gathering data in relation to all aspects of ageing and older people to underpin evidence-informed policy making.

The HaPAI is also aligned with several goals and actions of Healthy Ireland – A Framework for Improved Health and Wellbeing 2013-2025 (2), the national framework for the improvement of population health and wellbeing, and the WHO's Active Ageing: A Policy Framework (3) which provides key policy proposals for enabling active ageing in our societies. The HaPAI commenced in 2015 and is operational in a number of different areas of activity:

- The development of national indicators of older people's health and wellbeing, leading to the 2016 publication of a biennial report on the health and wellbeing of older people in Ireland;
- The establishment of a research fund to commission targeted additional research to fill identified data gaps required to cover all indicators, relevant to the design or configuration of future services and supports for older people; and
- At a local level, the development of indicators using either national data broken down to the county level where possible, or additional data collected locally and published in a series of county reports in selected counties.

The National Adult Literacy Agency (NALA) is an independent charity which is dedicated to ensuring that individuals with literacy and numeracy challenges can participate fully within society and also have access to suitable learning activities. Since its foundation in 1980, NALA has worked in collaboration with various government Departments, non-governmental organisations, tutors and learners to advance policy and increase provision across multiple settings: homes, workplaces, and communities.

EXECUTIVE SUMMARY

Participation in lifelong learning is an important component of positive ageing. Many adults in Ireland who do not participate in lifelong learning in Ireland do not report extrinsic barriers, such as cost or lack of available courses, that are often the focus for this area of policy research. Adult learners are a diverse group – typically age 25 and older – with a wide range of cultural and educational backgrounds, abilities, responsibilities and experiences. Adult Learners return to education for personal or professional reasons. This study is the first of its kind to focus on the motivational characteristics of adult learners’ in Ireland using population-level survey data. The study presents a comprehensive profile of adult learners in Ireland and identifies important links between adult learner characteristics and positive ageing outcomes.

The OECD Programme for the International Assessment of Adult Competencies (PIAAC) contains information about motivation to learn, engagement in everyday reading, writing, numeracy and information and communication technology (ICT) skills practices, and engagement in non-formal education. We have used this data to generate different profiles or groups of adult learners in Ireland. We then investigated whether characteristics such as age and gender differ between these profiles, and whether these profiles or groups experience different health and social outcomes. The outcomes that we investigated represent a small number of positive ageing indicators that are contained in the PIAAC data, and as such these are priority outcomes under the National Positive Ageing Strategy for Ireland.

Key findings

- The total adult learner population can be divided into four groups based on their motivation to learn, engagement in everyday reading, writing, numeracy and ICT skills practice, and engagement in non-formal education :
 - High-motivation, high engagement (20%);
 - Some motivation, some engagement (42%);
 - Low motivation, low engagement (30%); and,
 - Low motivation, no engagement (8.0%).
- The ‘low motivation, low engagement’ and the ‘low motivation, no engagement’ groups contained larger proportions of older adults (aged 55-65).
- Participation in non-formal education was consistently lowest for learners in the ‘low motivation, low engagement’ and the ‘low motivation, no engagement’ groups.
- Adults in the ‘low motivation, no engagement’ were significantly less likely to report better health, social trust, political efficacy (trust in government), or volunteer than those in the ‘high motivation, high engagement’ group.
- Adults in the ‘low motivation, low engagement’ and the ‘low motivation, low engagement’ were significantly less likely to report social trust, political efficacy (trust in government), or volunteer than those in the ‘high motivation, high engagement’ group.

Conclusions

More than one third (38%) of adult learners in Ireland have low motivation to learn and either low or no engagement in everyday reading, writing, numeracy, and ICT skills practice. These adults are more likely to be older, not engage in non-formal education, and have poorer health and social outcomes. Fostering a culture of lifelong learning will require responding to these intrinsic barriers to lifelong learning, and this is likely to have wider health and social benefits for the population.

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CHAPTER ONE

INTRODUCTION

Lifelong learning and positive ageing

1. INTRODUCTION

There is universal agreement about the importance of literacy, numeracy and digital competences and a growing understanding that these skills need to develop throughout the life course in line with the demands of 21st century society. For some time, the prevailing discourse in adult literacy, numeracy and digital competencies has been its relevance for policy makers concerned with up-skilling for the labour market, with a limited focus on health and social inclusion. Whilst the value of supporting people to develop their literacy, numeracy and digital skills for social, economic and political outcomes is broadly recognised, it remains a challenge to realise the conditions which enable this to be achieved through public policies and strategies. The social determinants framework that has permeated health research and policy approaches is particularly useful in facing this challenge as it can guide how we think about the relationship between individual capacity, behaviour and outcomes, in context. Against this backdrop, this report is concerned with examining how population data can provide a profile of adult learners and their social, health, and political outcomes to aid the implementation of public strategies for health and wellbeing and social inclusion. The National Positive Ageing Strategy published by the Department of Health in 2013 and its implementation provides the main context for this study.

LIFELONG LEARNING IN IRELAND

The concept of lifelong learning was first adopted in educational policy in Ireland in the 1990s as a guiding principle across all levels of education, but specifically adult education. Despite some developments encapsulated in the White Paper on Adult Education (4) lifelong learning in Ireland quickly became subsumed into the co-option of education and training for the labour market, not only leaving whole swathes of the population out, but also narrowing opportunities to explore adult learning for non-vocational purposes. A slightly wider vision has since made a resurgence in Irish education policy with the Department of Education and Skills adopting Eurostat's definition of lifelong learning as including 'all purposeful learning activity, whether formal, non-formal or informal, undertaken on an on-going basis with the aim of improving knowledge, skills and competence' (5).

POSITIVE AGEING AND LIFELONG LEARNING

In 2013, the National Positive Ageing Strategy (NPAS) of Ireland was published to promote the mental and physical health and wellbeing of older people as well as the engagement of older people in economic, social, cultural, community and family life (1). The National Positive Ageing Strategy presents the following definition of positive ageing:

"... an individual, community, public and private sector approach to ageing that aims to maintain and improve the physical, emotional and mental wellbeing of older people. It extends beyond the health and community service sectors, as the

wellbeing of older people is affected by many different factors including socio-economic status, family ... employment, housing and transport. Social attitudes and perceptions of ageing can also strongly influence the wellbeing of older people, whether through direct discrimination or through negative attitudes and images”.

This definition acknowledges that positive ageing is more than maintaining physical health and functioning and continued economic engagement. Furthermore, the positive ageing approach that has been adopted in Irish public policy recognises that social and economic inclusion across the life course, not just in later life, has an important role to play in improving general wellbeing and quality of life at all ages. Work and community settings that promote lifelong learning and provide opportunities to maintain and/or acquire new skills are particularly relevant to this. On this basis, the NPAS (1) contains the following objective in relation to adult learners:

“Promote access (in terms of affordability, transport availability, accessibility of venue) to a wide range of opportunities for continued learning and education for older people” (1) (p26).

Furthermore, under this objective there are three linked action areas and at the time of publication in 2013, three lead agencies were identified for implementation purposes:

- 1) Literacy, numeracy and technological skills (Lead in 2013: Department of Education and Skills and Department of Social Protection);
- 2) Re-training and up-skilling for employment (Lead in 2013: Department of Jobs, Enterprise and Innovation; and
- 3) Barriers to continued learning (availability, cost, lack of transport, inaccessible venues, and volunteers) by people as they age (Lead in 2013: Department of Education and Skills).

Lifelong learning is captured across all international and national affirmative approaches to ageing irrespective of the terminology used: *active ageing, productive ageing, positive ageing, successful ageing*. Participation in lifelong learning is important for catching up on, and maintaining skills and competencies that are first developed during formal education and schooling (6). However adult learners vary considerably in terms of their past experience, present engagement and skills use, and in turn, their potential future engagement in lifelong learning (6).

Current evidence surrounding barriers to lifelong learning in Ireland shows that there is a large proportion of adults who do not participate in lifelong learning and do not report any of the extrinsic barriers to lifelong learning that dominate existing research literature (situational, personal, or dispositional) (7–9). Efforts to identify and remove barriers to lifelong learning therefore need to consider intrinsic characteristics that are shaped by past experience and are potentially modifiable in adulthood. Developing a profile of motivation to learn, everyday engagement in reading, writing, numeracy and ICT skills practice and engagement in non-formal learning activities among adults may be particularly helpful in this regard. Given the strong relationship between educational attainment and health and wellbeing it is

also reasonable to assume that key positive ageing outcomes (e.g. health and social wellbeing) will also be related to a person's motivation to learn, their everyday engagement in skills practice, and engagement in non-formal learning.

AIM OF THIS STUDY

The aim of this research report is to provide a comprehensive profile of the adult learner population in Ireland based on motivation to learn and use of everyday literacy, numeracy, and ICT skills within the context of lifelong learning and positive ageing. There are three study objectives.

1. To identify and quantify different groups of adult learners based on their motivation to learn, engagement in everyday reading, writing, numeracy and ICT practice and, engagement in non-formal education in the past 12 months.
2. To describe these different groups of adult learners based on the following characteristics: age; gender; years of education; literacy proficiency; numeracy proficiency; and, and migrant status.
3. To investigate the impact of being in a particular group on four outcomes: health status; social trust; perceived political efficacy; and, volunteering.

It is anticipated that the findings of this study will be particularly relevant for actions relevant to adult skills, education and lifelong learning in the following strategies: NPAS (1); Healthy Ireland (2) Ireland's National Skills Strategy 2025(5) and the Further Education and Training Strategy 2014-2019 (10).

The remainder of this report is divided into four further sections. Section 2 provides a summary of previous research regarding lifelong learning, adult skills and positive ageing that are relevant to this study. This is followed by a summary of key policy points. Section 3 contains the key concepts and definitions that are relevant to this study. Section 4 contains a summary of the research methodology: a description of the data and measures, and how the data was analysed. Section 5 contains the results of this study. Section 6 contains ad discussion of the finding and concludes the report.



CHAPTER TWO

BACKGROUND

Adult skills, lifelong learning, and positive ageing

2. BACKGROUND

ADULT SKILLS, LIFELONG LEARNING AND POSITIVE AGEING – CURRENT EVIDENCE

Adult skills (literacy, numeracy and ICT) are key information-processing skills that are invaluable in 21st-century economies (11) and are used in a multitude of everyday contexts, like work, travel, and social participation. In addition to the target set for increasing lifelong learning participation, The National Skills Strategy (2016)(5) also uses Ireland's scores in the Programme for the International Assessment of Adult Competencies (PIAAC) survey of 2012 as benchmarks against which progress in these skills will be measured. These are:

- Reduce the percentage of adults scoring at level 1 or below literacy from 17.5% to 12%;
- Increase the percentage of adults scoring at levels 3, 4 and 5 literacy from 44.5% to 50%;
- Reduce the percentage of adults scoring at level 1 or below numeracy from 25.6% to 17%; and,
- Increase the percentage of adults scoring at levels 3,4 and 5 numeracy from 36% to 45%.

The Further Education and Training Strategy (2015) (10) contains the national adult literacy and numeracy programme which is considered within the wider context of active inclusion. The Programme aims to continue to raise awareness of the importance of strong literacy and numeracy skills and to enhance the quality and quantity of learning opportunities available to the public.

In 2016 the HaPAI published the first report of National Positive Ageing Indicators (12) which provided a baseline against which progress in positive ageing in Ireland can be measured. This set contained four indicators relating to education and lifelong learning:

- Percentage of adults aged 55-65 with low literacy (61%);
- Percentage of adults aged 55-65 with low numeracy (63%);
- Participation in formal education among adults aged 25-65 in the past 12 months (6.5%); and,
- Participation in non-formal education among adults aged 25-65 in the past 12 months (8.0%).

The positive ageing approach presented in the NPAS (1) recognises that participation in lifelong learning is an important factor within a range of supportive societal and external environmental factors that play a role in improving general wellbeing and quality of life as we age. Adult who continue to engage in lifelong learning report having increased confidence (13–15) and increased mental stimulation (15–19) which has strong links with the maintenance of good mental and physical health (20). Participation in learning also provides intrinsic rewards to

individuals as they age. In addition to increasing knowledge, successful completion of an educational course can enhance quality of life, increase motivation, enhance coping skills, help to maintain independence and increase social connectedness (21). These factors are made particularly salient when current population estimates and projections are considered. By 2050, more than one third of the population in Ireland will be aged 65 or older (22).

Lifelong learning is also beneficial to the wellbeing of the wider community. Merriam & Kee (2014) suggest that the participation of older adults in lifelong learning can help cultivate a locality and community where individuals are socially interconnected in healthy and affluent ways (23). Community-based adult education programmes provide opportunities to strengthen neighbourhood social capital: shared values and understandings in society which allow individuals and groups to trust each other and work together efficiently. Field (2009) has suggested that “participation in learning tends to enhance social capital by helping develop social competencies; extending social networks and promoting shared norms and tolerance of others” (24) (p23).

CONCEPTS AND DEFINITIONS RELEVANT TO THIS STUDY

Motivation to learn

There are multiple terms that have been used to describe the set of questions relating to motivation that are contained in the PIAAC background questionnaire: readiness to learn (25); meta-cognitive abilities that “structure the learning process and affect the efficiency with which new information is being processed (26); learning styles; and, learning strategies. Irrespective of terminology, the basis for these questions reflects an effort within the research and policy community to measure both the motivation and strategies that people draw on to learn throughout their lifetime (27).

According to Gorges and colleagues (2016) (6), among adult learners motivation to learn can be intrinsic, linked to a specific activity or situation, and extrinsic (due to external incentives or rules). Motivation to learn can also be performance goal-orientated, (to out-perform others) and mastery goal-orientated (to develop one’s own skills). The qualities of motivation to learn are particularly important for understanding a persons’ behaviour and experiences (6). Motivation to learn also encompasses goal-orientation; whether someone seeks to outperform others (performance orientation) or to develop their skills (mastery orientation) (28). Motivation is linked to learning outcomes, such as acquiring a new skills, through the use of deep-level learning strategies (29) and motivation is a fundamental prerequisite for adult learning (30,31).

Previous research has indicated that motivation tends to plateau with age, and prior educational attainment and experiences are important in shaping future learning (32,33). School experiences covers a long and developmentally important phase of people’s lives (34) which influence learning experience in adulthood (35) through the development learning-related emotions (23,36) expectancies, and values (37). Indeed previous research in Ireland has found that adult learners with prior

negative experiences in school settings faced psychological barriers learning engagement in later life (38).

Everyday literacy, numeracy and ICT practice

Everyday skills practices are tasks that people do as part of daily life, outside the workplace. Literacy practices include activities such as reading magazines and newspapers, numeracy practices include calculating prices and paying bills, and ICT practices include activities such as internet banking.

Health status

Health status is considered to be a complete state of physical and social wellbeing, and not merely the absence of disease or disability. Self-reported health status is an important indicator of current status and is a powerful predictor of mortality. A broad range of social factors such as education, community, and the environment all have an effect on a person's health. Improving the health status of individuals has wider societal and economic benefits.

Social capital and social outcomes

Social capital has been defined as consisting of "social networks, the reciprocities that arise from them and the value of these for achieving mutual goals" (39)(p 1). Social capital has been particularly influential in research relating to school attainment, business innovation, community development and social inclusion (40). In this study we are concerned with frequently measured aspects of social capital (social outcomes such as social trust, political efficacy and volunteering).

Social trust – trust in other people is an important aspect of social capital that enables people to act together and achieve shared goals. Trust is important for the economy as people who trust each other are more likely to cooperate. The absence of trust within communities and between individuals can have a negative effect on wellbeing and social engagement. Lack of trust in society can lead to political instability.

Volunteering – historically Ireland has had a high rate of volunteering which provides a broad range of benefits to the general public, and to the individuals who volunteer. Volunteering benefits society and the economic as a whole whereby individuals provide goods and services freely, for the benefit of others, groups and organisation. Volunteering can enhance a person's sense of wellbeing, sense of purpose, provide opportunities to socialise, and acquire new skills. Volunteering is also important for social cohesion.

Political efficacy – Political efficacy has been defined as "the feeling that individual political action does have, or can have, an impact on the political process i.e. that is worthwhile to perform one's civic duties (41) and external political efficacy is an individual's belief in the responsiveness of political bodies to citizen's demands (42). Political efficacy is the strongest predictor of voting behaviour, and is considered to be the foundation of democracy.



CHAPTER THREE

Methodology

Study data, measures and methods

3. METHODOLOGY

In this section we provide an overview of the PIAAC data, describe the measures that we included in the study, and the methods we used to analyse the data.

DATA OVERVIEW

Data is from the Programme for the International Assessment of Adult Competencies (PIAAC) conducted in 2012 in Ireland and as noted earlier used as baseline data for the National Skills Strategy (2016)(5). This was an international, quantitative survey of literacy, numeracy and problem-solving in technology rich environments (ICT skill). PIAAC involved a background questionnaire and participants were also asked to complete literacy, numeracy and ICT tasks using a laptop computer or on paper (if requested by the participant and more likely the case in Ireland than any other country). A full overview of the study is available in a technical report produced by the OECD and Central Statistics Office.¹

In Ireland 5,983 adults aged between 16 and 65 took part in PIAAC and the survey was designed to be national representative of adults within this age range. In this study we include a smaller number of adults, approximately 5,000, who are aged between 25 and 65 and had finished continuous education at the time of survey. These adults are considered to be the adult learner population.

MEASURES USED IN THIS STUDY

The background questionnaire in PIAAC contains a section '*About Yourself*' which included question about demographic and socio-economic characteristics. Based on existing research we have selected key demographic and socio-economic background questions to include in this study. These questions are summarised in Table 1.

TABLE 1 BACKGROUND QUESTIONS

Question	Response options
Gender	Male and female
Age	Measured in years from 25-65
Years of schooling	Measured in years
Migrant status (born in Ireland)	Yes or no
Non-formal education in the past 12 months	Yes or no

¹ Available at http://www.oecd.org/site/piaac/Technical%20Report_TOC.pdf.

The background questions section also included six questions about learning. Based on a study conducted by Gorges and colleagues (2016) (6) four of these questions have previously been found to capture *motivation* to learn. These questions are summarised in Table 2.

TABLE 2 MOTIVATION TO LEARN QUESTIONS

How much does the following statement describe you?	Response options
I like learning new things	Not at all, very little, to some extent, to a high extent, to a very high extent
I like to get to the bottom of difficult things	
I like to figure out how different ideas fit together	
If I don't understand something, I look for additional information to make it clearer	

In PIAAC there are several questions which measure how often a person engages in a long list of everyday skills practices. Answers to these questions were used by the OECD PIAAC study team to develop four indicators that capture, on single indices, the likelihood that a person engages in reading; writing; numeracy; and, ICT skills practices. Each index ranges from 0 to 4; infrequent use to frequent use. All the items that are captured in each index is summarised in Table 3 below.

TABLE 3 MEASURES OF EVERYDAY SKILLS PRACTICE

Skills measure	Responses for each item were calculated as an index that ranged from 0 (infrequent use) to 4 (frequent use)
Reading	Reading letters, memos or emails; articles in newspapers, magazines or newsletters; bills, invoices, bank statements or other financial statements; books, fiction or non-fiction; directions or instructions; manuals or reference materials; and articles in professional journals or scholarly publications; and diagrams, maps or schematics.
Writing	Writing letters, memos or emails; fill in forms; write reports; and write articles for newspapers, magazines or newsletters.
Numeracy	Calculate prices, costs or budgets; use a calculator – either hand-held or computer based; use or calculate fractions, decimals or percentages; use simple algebra or formulas; use more advanced maths or statistics such as calculus, complex algebra, trigonometry or use of regression techniques; and prepare charts, graphs or tables.
ICT	Use email; use the internet in order to better understand issues related to, for example, your health or illnesses, financial matters, or environmental issues; conduct transactions on the internet, for example, buying or selling products or services, or banking; use a word processor, for example Word; take part in real-time discussions on the internet, for example, online conferences or chat groups; use spreadsheet software, for example Excel; and use a programming language to programme or write computer code.

In PIAAC there is one single item about health; general health status. This is measured on a four point scale (see Table 4). There are also four social outcomes included in the PIAAC survey: social trust; political efficacy, and volunteering. We have included all of these measures in this study.

TABLE 4 HEALTH AND SOCIAL OUTCOME QUESTIONS

Question	Response options
General health	Excellent, very good, good, fair, poor.
Social trust	
You can only trust a few	Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.
Other people take advantage	Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.
Political efficacy “people like me don’t have a say in what the government does”	Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.
Volunteering	Never, less than once a month, less than once a week but at least once a month, at least once a week but not every day, every day.

In addition, we include literacy and numeracy scores (ranging from 0-500) that were estimated for each participant based on their performance in literacy and numeracy tasks as part of the PIAAC study.

ANALYSIS

Motivation to learn

In the PIAAC survey there were four separate questions about “motivation to learn”:

- I like learning new things;
- I like to get to the bottom of difficult things;
- I like to figure out how different ideas fit together; and,
- If I don’t understand something, I look for additional information.

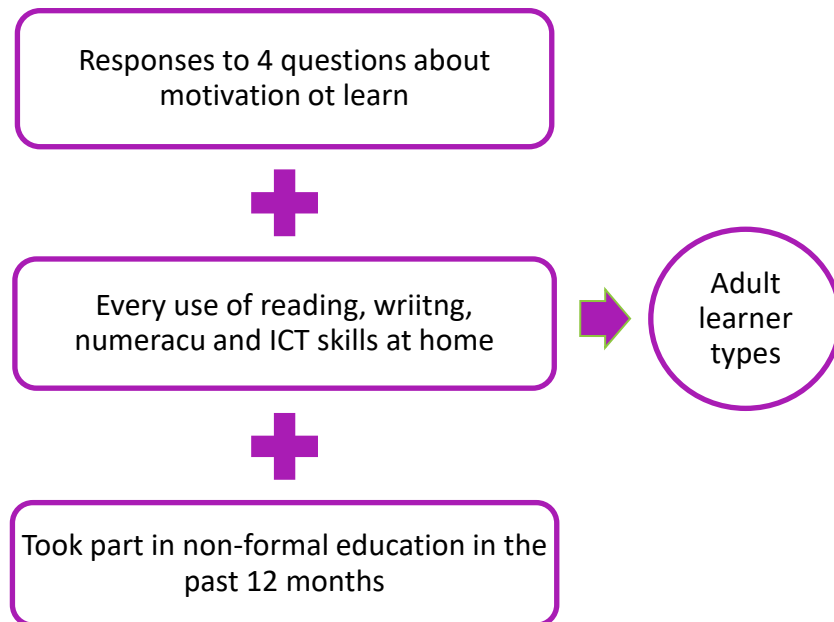
We used Item Response Theory (IRT) to create a new single index measure of “motivation to learn” for this study based on responses to these four statements (see technical Note 1 at the end of this chapter).

Adult learner types

In this study we used a statistical method called Latent Class Analysis (LCA) to classify different types of adult learners based on 1) their motivation to learn and 2) how often they use reading, writing, numeracy, and ICT skills at home, and 3) engagement in non-formal education in the past 12 months (Figure 1). During LCA, individuals are assigned to groups based on their responses to survey questions and a final model that contains each different class or type is proposed. The researcher

can then test the quality of the proposed model. The 'best-fit' model is then used for further analysis.

FIGURE 1 IDENTIFYING ADULT LEARNER TYPES



Investigating the health and social outcomes among different adult learner types

In this study we completed two further sets of analysis. Firstly, we used descriptive statistics (percentages) to determine if the learner types differed by age, gender, education, literacy, numeracy, and migrant status. We then investigated if social and health outcomes differed for different adult learner types. We considered four outcomes: health status; social trust; political efficacy; and, volunteering. We used multivariate regression analysis to identify significant relationship between adult learner types and each outcome (see technical note 3).

Technical note 1: Item Response Theory

IRT is an approach that is used to establish the psychometric properties of survey items and scales. This is often used in psychology research as a way of measuring the quality of survey questions, and in order to determine how appropriate questions are for survey participants, and how well particular questions measure an ability or trait. In this study the trait we were interested in measuring was “motivation to learn”. We used IRT to confirm that when we combined the four items in PIAAC related to motivation, the resulting single index was valid and fit-for-purpose as a single measure of “motivation to learn”.

Technical note 2: Multivariate regression analysis

For the multivariate regression analysis we used ordinal logit regressions as each of the outcomes that we are interested in are measured on a scale. For example, social trust is measured on a 5-point scale than ranges from strongly disagree to strongly agree. There are four categories of adult learners, therefore in the regression analysis “high motivation, high engagement” is the reference category with which all other learner types are compared. As there are many factors that may be related to poor health, lower social trust, lower political efficacy, and not volunteering, we included a variety of factors that are likely to be important in the analysis as covariates: age, gender, years of education, migrant status, literacy proficiency and, numeracy proficiency. For the ordinal logit regression analysis we used Stata Version 14.

Technical note 3: Software used for LCA and regression analysis

For the latent class analysis we used the DoLCA plug-in for Stata developed by Penn State University and Stata Version 14 for LCA and the regression analysis.



CHAPTER FOUR

RESULTS

4. RESULTS

There are several results from PIAAC that have been reported previously by the Central Statistics Office (CSO), the National Adult Literacy Agency (NALA), and further international analysis of the PIAAC data, including results from Ireland, within the academic community. These results are relevant to current study; therefore we will briefly present some key points about adult skills and lifelong learning, health, and social outcomes among adult learners from PIAAC. These results are for adults aged 25-65 who have completed continuous education.

The full tables from which these key points are drawn are presented in Appendix 1.

Employment status and skills proficiency

- Two thirds were employed at the time of survey (66%);
- A total of 21% were not born in Ireland;
- Almost 20% of adults had low literacy (at or below level 1);
- More than 25% had low numeracy (at or below level 1); and
- 21% were below level 1 for ICT skill.

Participation in adult education (formal or non-formal) in the past 12 months

Formal education corresponds to education and training in the regular system of schools, universities, colleges and other formal educational institutions. Non-formal education is defined as any organised and sustained educational activities that do not correspond to the definition of formal education. It may or may not take place in educational institutions and can cater to persons of all ages. It may cover educational programmes to impart adult literacy, basic education for out-of-school children, life skills, work skills and general culture.

- Overall 50.4% participated in any further education (formal or non-formal) in the past 12 months; and
- A total of 14.9% participated in formal education and 44.6% participated in non-formal education.

Health and social outcomes

- Overall, 61% were in excellent or very good health;
- In relation to social trust, a total of 75% agreed that other people take advantage of you and 77% agreed that you can only trust a few people;
- In relation to political efficacy, 58% agreed with the statement that “people like me don’t have a say in what the government does”; and
- The majority of adults never volunteer (62%), although 12% volunteer weekly.

Single statements about motivation to learn

- Over 60% like learning new things and like to get to the bottom of difficult things;
- Over half (54%) like to figure out how different ideas fit together; and,
- Over 70% look for additional information to make something clearer, if they don't understand something.

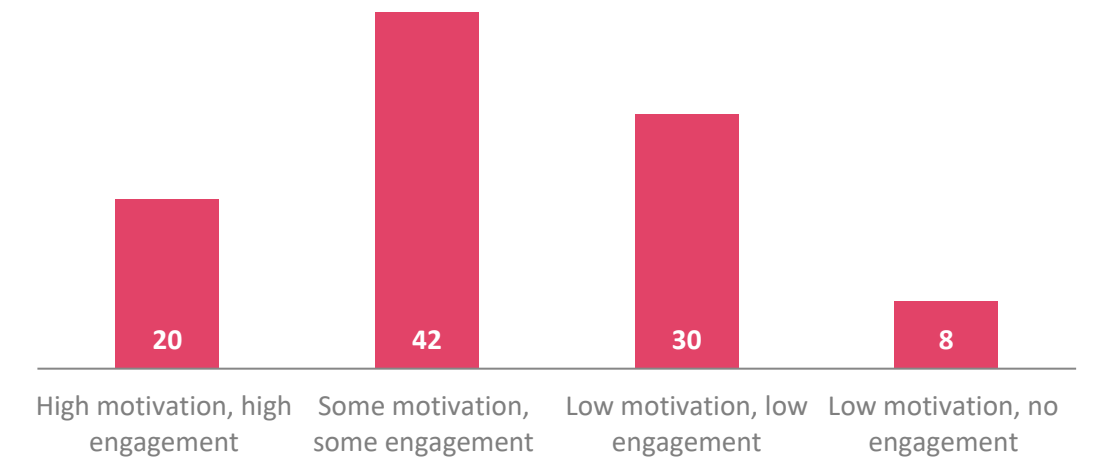
Everyday skills practice

- Overall, reading and ICT skills are used more frequently at home, compared with numeracy and writing skills;
- A total of 40% of adult learners have a low probability of using numeracy at home;
- More than one third (35%) have a low probability of using writing skills at home;
- Just 22% have a high probability of using reading skills at home.
- Low everyday skills practice in these areas has previously been linked to difficulty accessing information, difficulty navigating everyday information systems e.g. online banking, difficulty keeping up with news and events, and challenges in household budgeting.

ADULT LEARNER TYPES

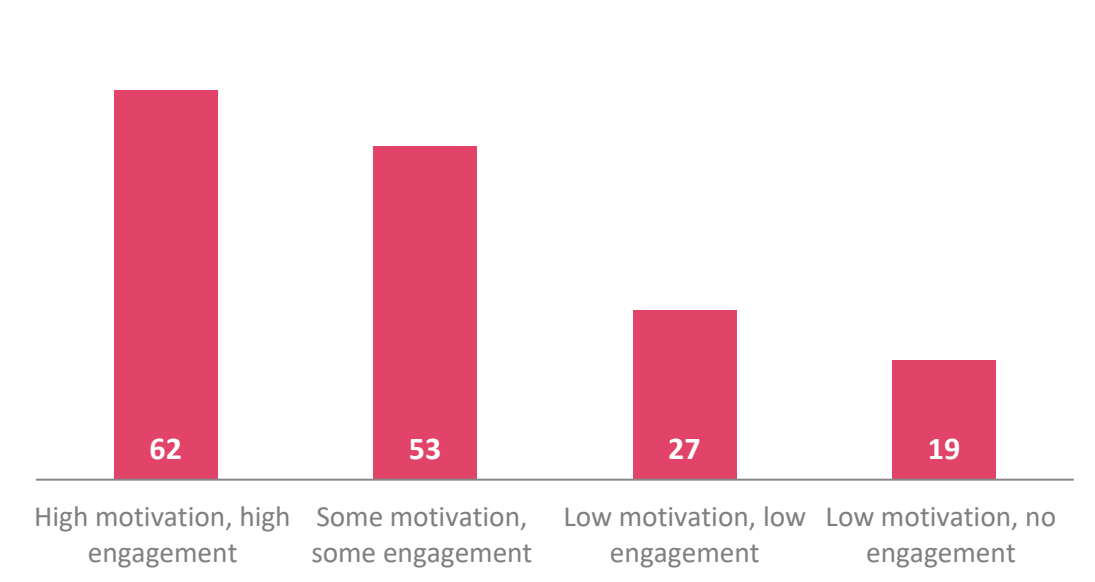
In this section we present and discuss the adult learner types that we have identified. We then present the result of the analysis to identify statistically significant associations between adult learner type and health and social outcomes. Based on previous research with PIAAC data (see Gorges et al. 2016), we used four questions from the PIAAC background section as indicators of motivation to learn. We combined these measures with engagement in every day skills and non-formal education to identify four types of adult learners aged 25-65. These types are presented in Figure 3 below. The results in Figure 3 show that the majority of adult learners are in the 'some motivation, some engagement' category (42%).

FIGURE 2 ADULT LEARNER TYPES (%)



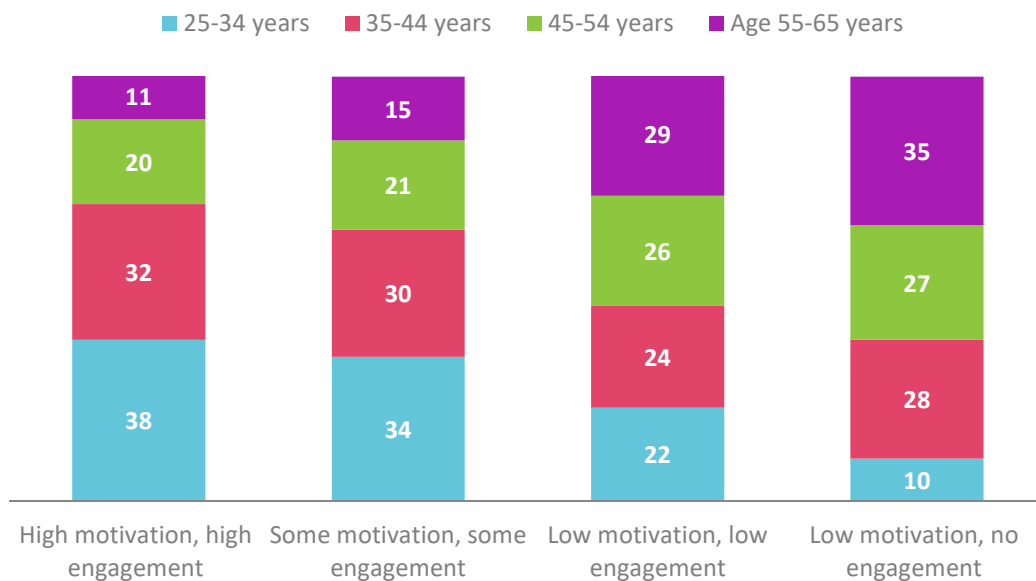
Participation in non-formal education is consistently lower among learners who have lower motivation and lower engagement.

FIGURE 3 PARTICIPATION IN NON-FORMAL EDUCATION IN THE PAST 12 MONTHS BY ADULT LEARNER TYPE (%)



There were also considerable differences in the age profile of each adult learner type, presented in Figure 5 below.

FIGURE 4 AGE PROFILE OF EACH LEARNER TYPE (%)



We can see from the results in Figure 5 that the ‘high motivation, high engagement’ contains a larger percentage of younger adult learners, aged 35 or less, compared with other learner types. In contrast, more than one third (35%) of those in the ‘low motivation, no engagement’ category are aged 55 and older.

ADULT LEARNER TYPES AND HEALTH AND SOCIAL OUTCOMES

In the previous section we saw that the social outcomes differed for each adult learner type. However it is important to control for demographic and economic factors in order to identify if there is a statistically significant difference between adult learner types and these health and social outcomes, net of other factors that are associated with these outcomes. These factors are referred to as *covariates*. The *covariates* that we included in the regression analysis were age, gender, years of education, migrant status, and literacy and numeracy proficiency.

How to interpret these regression results

There are four groups of learner type and we chose the group “high motivation, high engagement” as the category against which other types of learners are compared. For example, we could say that compared with having ‘high motivation to learn and high engagement’, having ‘low motivation to learn and no engagement’ is associated with a statistically significant decrease in the odds of reporting a higher level of social trust.

The results of the regression models are presented in graphs on the next four pages (Figure 6-13). These results are then summarised. The full regression models are presented in the Appendix (Table A7).

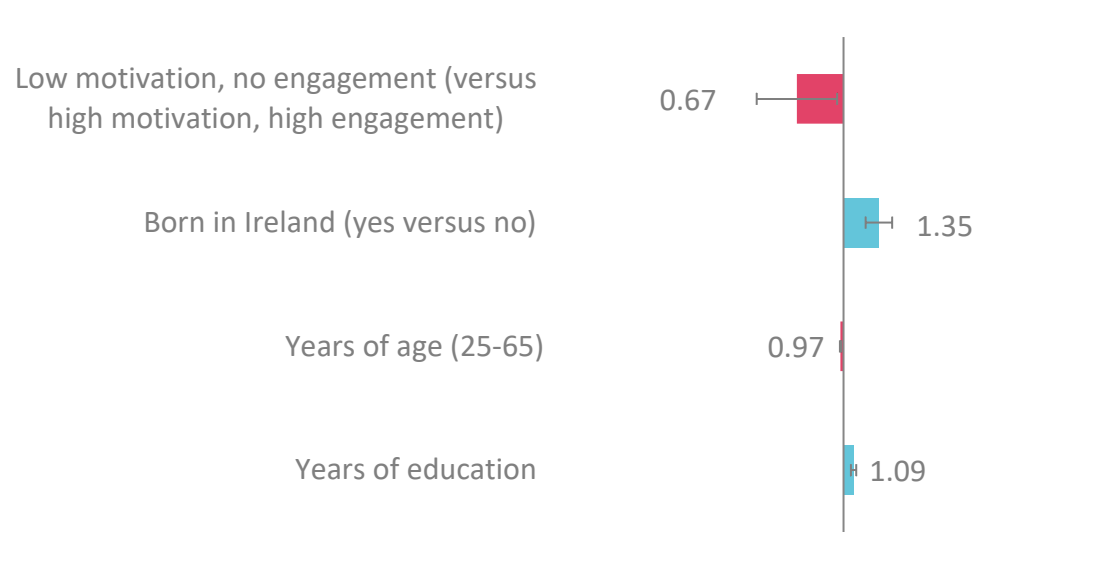
FIGURE 5 WHAT FACTORS AS ASSOCIATED WITH BETTER HEALTH?



Legend of significant association with better health:



FIGURE 6 ODDS RATIO OF SIGNIFICANT FACTORS ASSOCIATED WITH BETTER HEALTH



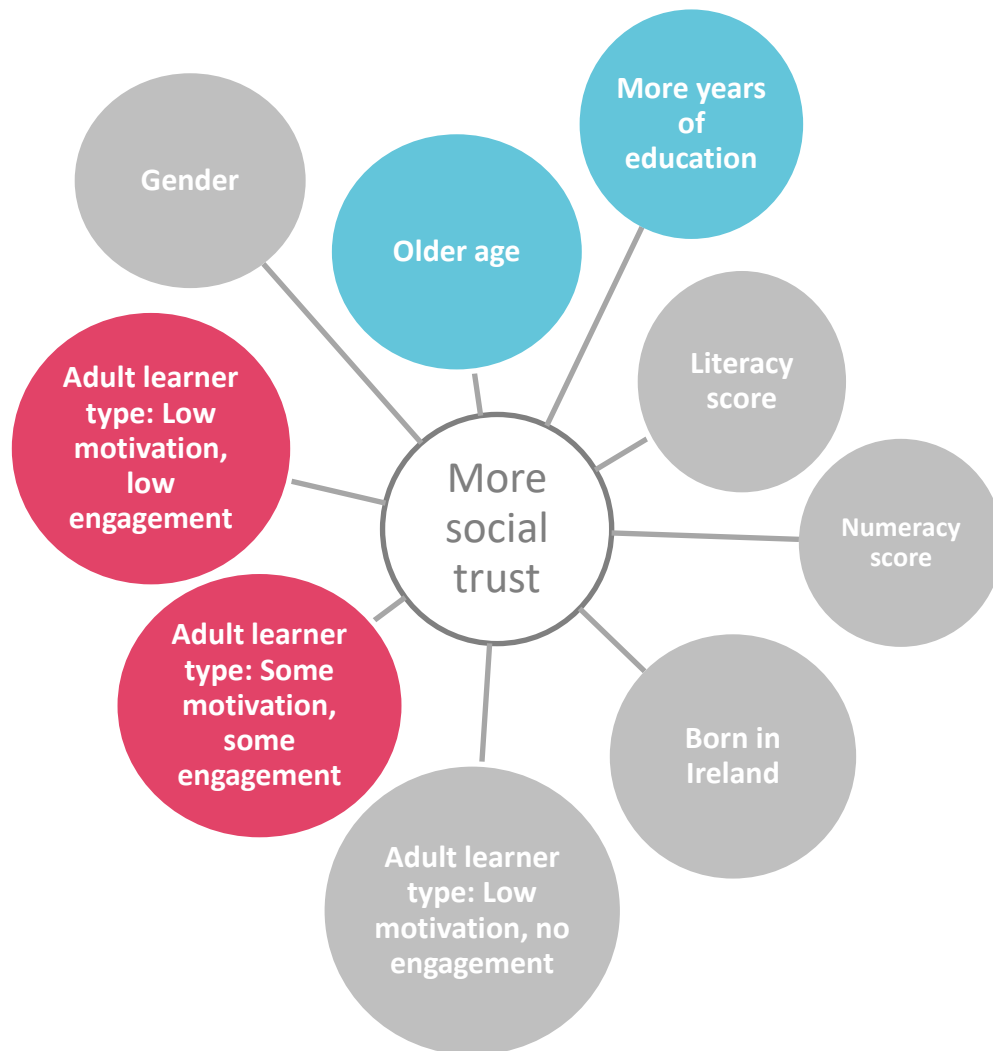
Note: significant factors presented only (Significance level $p < 0.05$).

Of all the factors studied, being in the 'low motivation, no engagement' category had the largest impact on self-rated health. Adults in this category were 33% less likely than adults who were in the 'high motivation, high engagement' category to report being in good health.

Being born in Ireland was associated with a 35% increase in the likelihood of reporting being in good health compared with adults born outside Ireland.

Age and years of education had a much smaller impact on self-rated health. A one-year increase in age was associated with a 3.0% lower likelihood of reporting good health and each additional year of education was associated with a 9.0% increase in the likelihood of reporting good health.

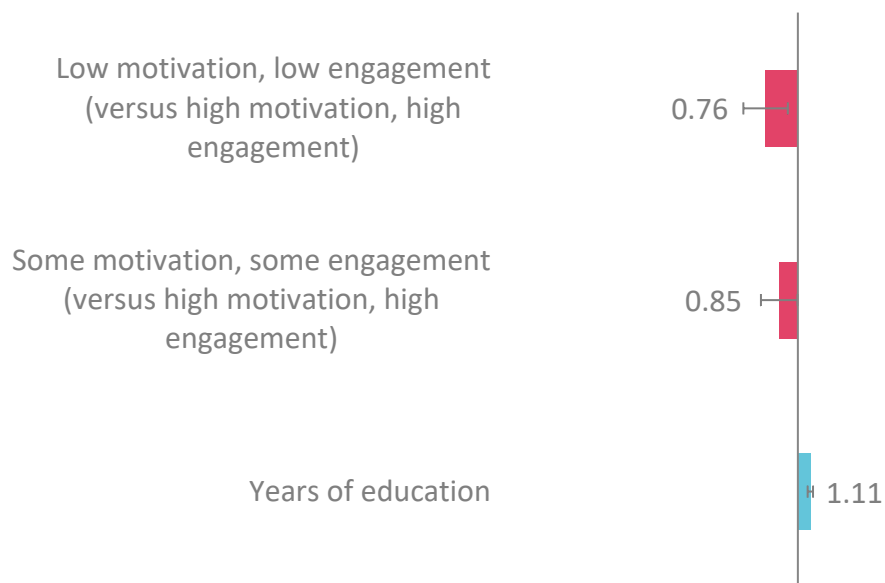
FIGURE 7 WHAT FACTORS AS ASSOCIATED WITH MORE SOCIAL TRUST?



Legend of significant association with more social trust:



FIGURE 8 ODDS RATIO OF FACTORS ASSOCIATED WITH MORE SOCIAL TRUST



Note: significant factors presented only (Significance level $p < 0.05$).

Of all the factors studied, being in the 'low motivation, low engagement' category had the largest impact on social trust. Adults in this category were 24% less likely than adults who were in the 'high motivation, high engagement' category to have more social trust.

Furthermore, adults in the 'some motivation, some engagement' category were 15% less likely than adults who were in the 'high motivation, high engagement' category to have more social trust.

Education had a much smaller impact on social trust. Each additional year of education was associated with an 11% increase in the likelihood of having more social trust.

FIGURE 9 WHAT FACTORS AS ASSOCIATED WITH MORE POLITICAL EFFICACY?

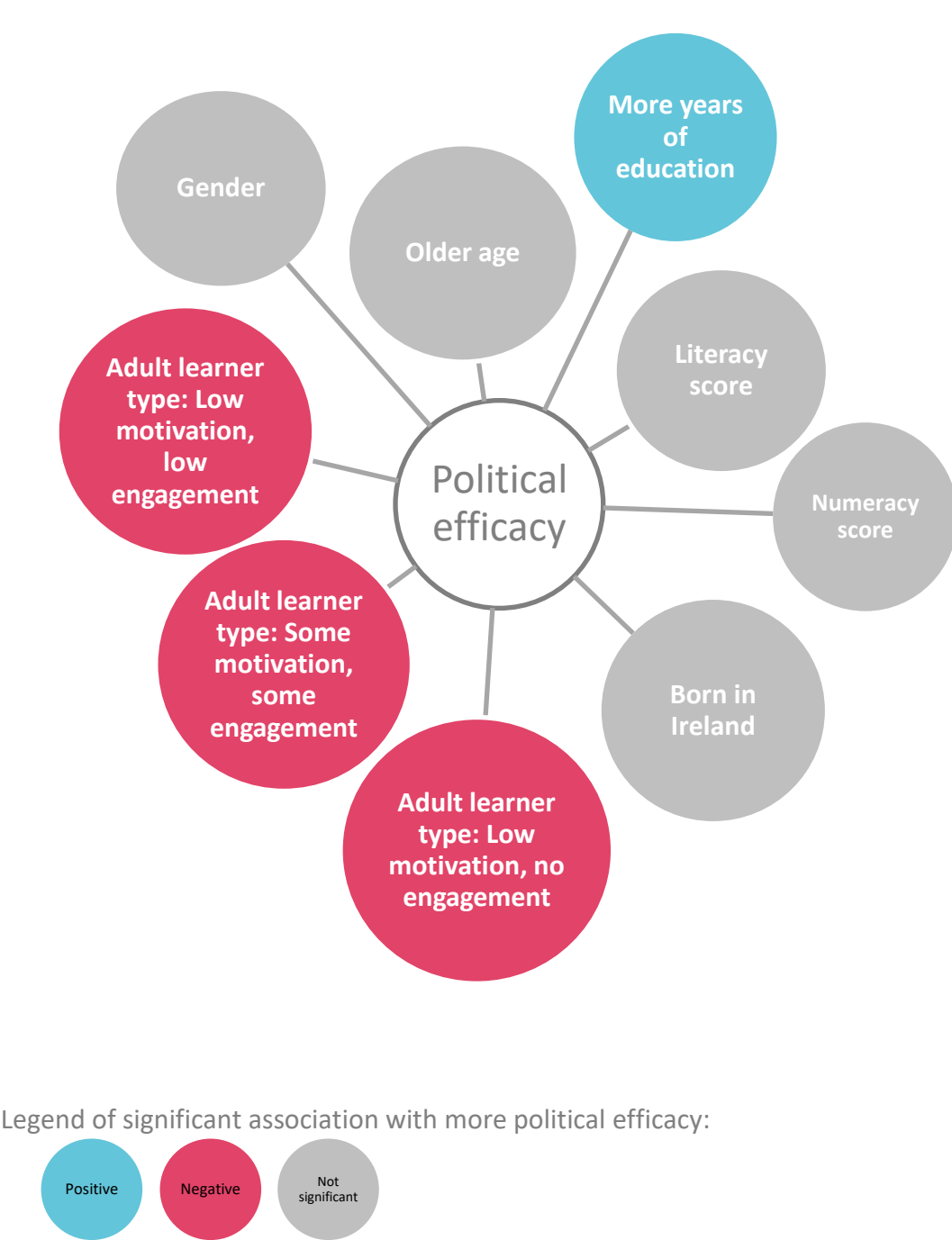
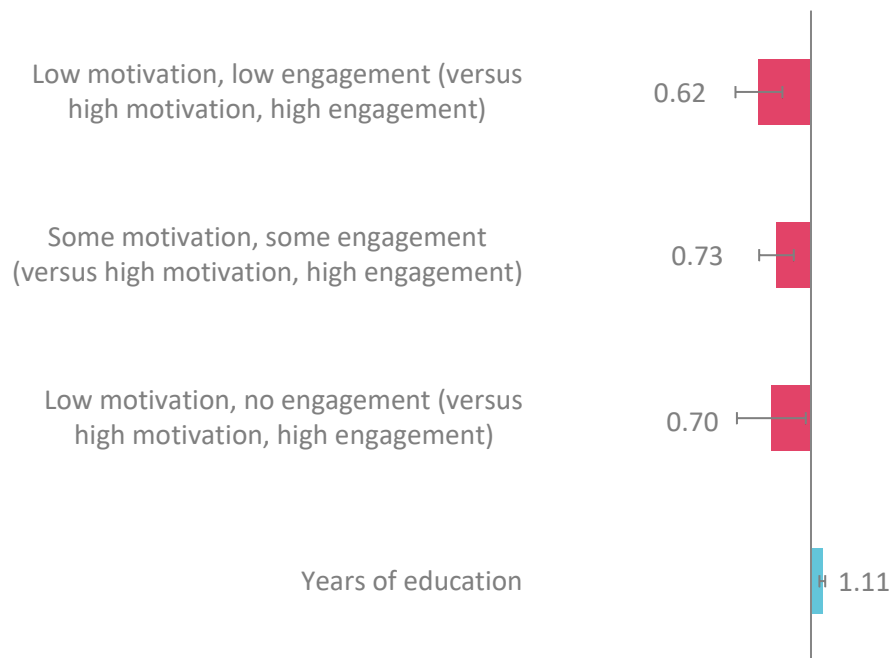


FIGURE 10 ODDS RATIO OF FACTORS ASSOCIATED WITH MORE POLITICAL EFFICACY



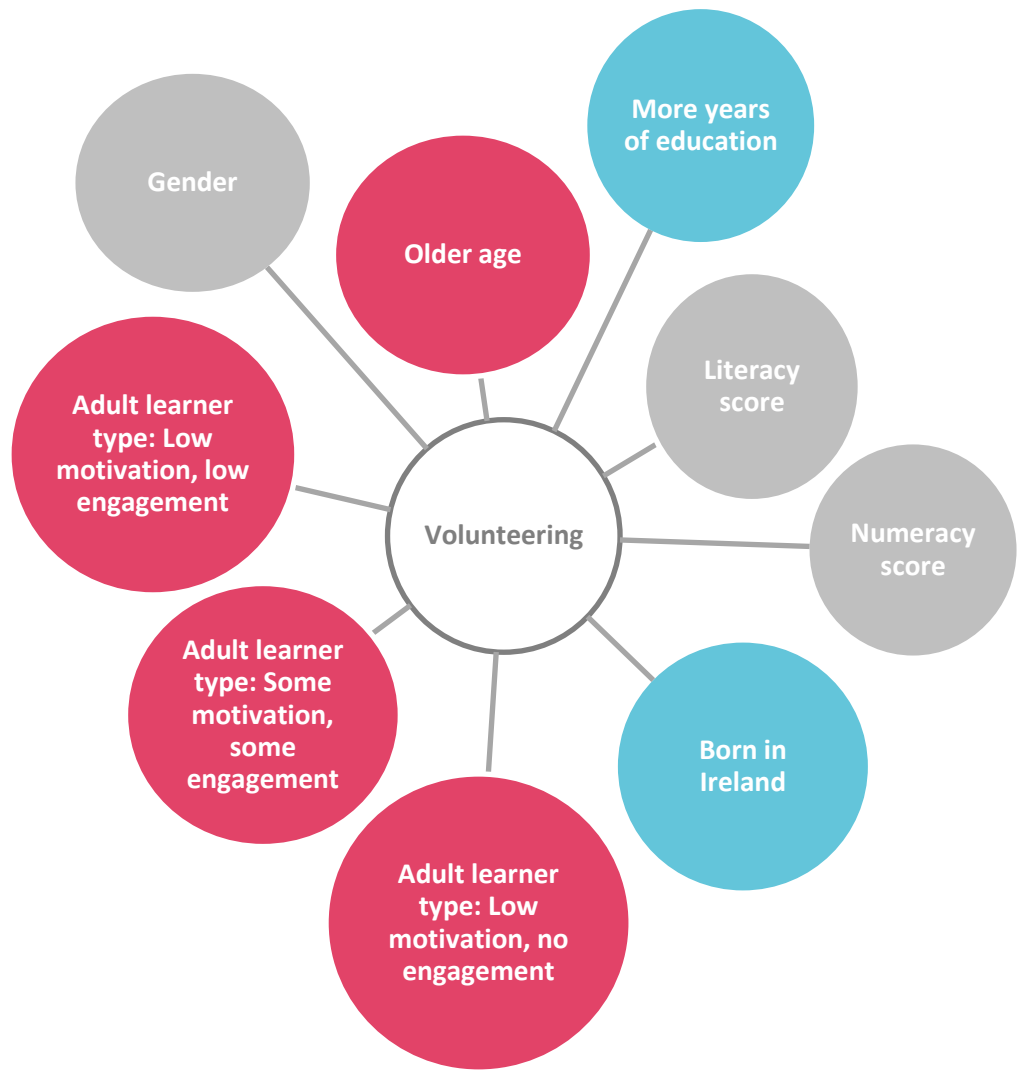
Note: significant factors presented only (Significance level $p < 0.05$).

Of all the factors studied, being in the 'low motivation, low engagement' category had the largest impact on perceived political efficacy. Adults in this category were 38% less likely than adults who were in the 'high motivation, high engagement' category to perceive more political efficacy (feel that people like them have a say in what the Government does).

Furthermore, adults in the 'some motivation, some engagement' category were 15% less likely than adults who were in the 'high motivation, high engagement' category to perceive more political efficacy.

Education had a much smaller impact on perceived political efficacy. Each additional year of education was associated with an 11% increase in the likelihood of having more political efficacy.

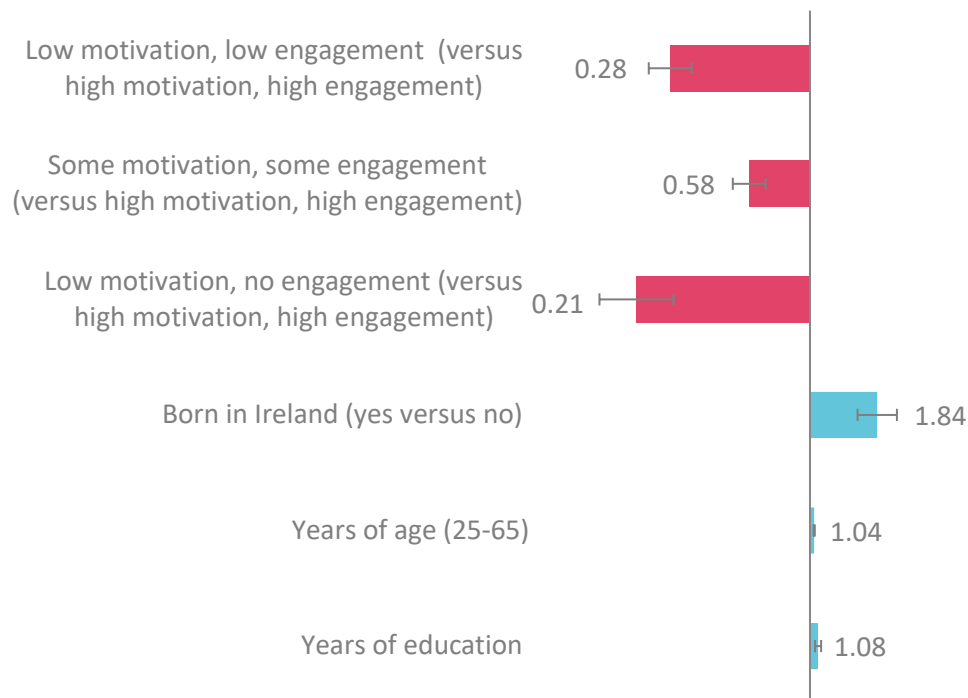
FIGURE 11 WHAT FACTORS AS ASSOCIATED WITH MORE VOLUNTEERING?



Legend of significant association with more volunteering:



FIGURE 12 ODDS RATIO OF FACTORS ASSOCIATED WITH VOLUNTEERING



Note: significant factors presented only (Significance level $p < 0.05$).

Of all the factors studied, being in the 'low motivation, no engagement' category had the largest impact on volunteering. Adults in this category were 79% less likely than adults who were in the 'high motivation, high engagement' category to have higher rates of volunteering. Adults in the 'low motivation, low engagement' category were 72% less likely than adults who were in the 'high motivation, high engagement' category to have higher rates of volunteering. Furthermore, adults in the 'some motivation, some engagement' category were 42% less likely than adults who were in the 'high motivation, high engagement' category to have higher rates of volunteering.

Being born in Ireland was associated with an 84% increase in the likelihood of having higher rates of volunteering.

Education had a much smaller impact on volunteering. Each additional year of education was associated with an 8.0% increase in the likelihood of having higher rates of volunteering.



CHAPTER FIVE

DISCUSSION AND CONCLUSION

5. DISCUSSION AND CONCLUSION

In this study we identified four groups of adult learners based on their motivation to learn, their engagement in everyday reading, writing, numeracy and ICT skills practice and participation in non-formal education: high motivation, high engagement; some motivation, some engagement; low motivation, low engagement; and, low motivation, no engagement.

These profiles provide a new dimension to previous approaches to understanding dispositional barriers to lifelong learning. Previous research on the link between skills and health and social outcomes have focussed on single characteristics e.g. literacy, whereas these profiles describe multiple interrelated characteristics and capacities, behaviour and motivation.

As we controlled for a range of demographic factors and education in the analysis, we can also comment on whether these factors were significant in predicting higher or lower odds of better health and each social outcome. To begin, once all factors were controlled for in the model, gender did not significantly predict health, social trust, volunteering, or political efficacy.

Health

Adult learners who were in the 'low motivation, no engagement' were significantly less likely to be in good health compared with adults who were in the 'high motivation, high engagement' type. Being born in Ireland was significantly associated with better health. More years of education was significantly associated with higher likelihood of being in better health. Increasing age was also significantly associated with an increased likelihood of having poorer health.

Social trust

Adults who were in the 'some motivation, some engagement and 'low motivation, low engagement' categories were significantly less likely to have higher levels of social trust. There was no significant difference between adults in the 'low motivation, no engagement' and the 'high motivation, high engagement' type once other factors were controlled for. Being born in Ireland was not significantly associated with social trust. More years of education was significantly associated with higher likelihood having high social trust. Increased age was significantly associated with greater social trust

Volunteering

Compared with adults who were in the 'high motivation, high engagement' type, all other types of adult learners were significantly less likely to volunteer. The largest difference was seen between adults in the 'high motivation, high engagement' type and adults in the 'low motivation, no engagement' type. Being born in Ireland was

significantly associated an increased likelihood of volunteering. More years of education was significantly associated with higher likelihood of volunteering. Increased age was significantly associated with an increased likelihood of volunteering.

Political efficacy

Compared with adults who were in the 'high motivation, high engagement' type, all other types of adult learners were significantly less likely to have high political efficacy. The largest difference was seen between adults in the 'high motivation, high engagement' type and adults in the 'low motivation, no engagement' type. Being born in Ireland was not significantly associated with political efficacy. More years of education was significantly associated with a higher likelihood having high political efficacy. Age was not significantly associated with political efficacy.

CONCLUSION

In response to the high numbers of adults in Ireland who are not participating in lifelong learning and who do not identify extrinsic barriers such as provision or time, we have presented new evidence of the intrinsic characteristics of adult learners in Ireland based on their motivation to learn, engagement in everyday reading, writing, numeracy and ICT skills practice, engagement in non-formal learning in the past 12 months. We have also provided an evidence-base with which to communicate the value of increasing motivation to learn, everyday skills practice, and engagement in informal learning for diverse positive ageing outcomes in Ireland.

It is clear that intrinsic characteristic (low motivation to learn) and low everyday engagement in reading, writing, numeracy and ICT skills practice are factors that need to be considered in efforts to increase engagement in lifelong learning and positive ageing strategies, in addition to increasing provision. It is anticipated that this information will be of use to a wide range of stakeholders engaged in implementation of actions relating to healthy ageing and participation, through the National Positive Ageing Stakeholder Forum. This information will be used by the Age-friendly Ireland Programme which involves local multi-agency planning structures to consult with older people and for the continued development and implementation of integrated city and county strategies to promote and advance older people's positive ageing and social inclusion across Ireland.

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Appendix: full descriptive statistics and regression tables

TABLE A1: EMPLOYMENT, MIGRANT STATUS, AND EDUCATION (YEARS OF SCHOOLING)

	%	S.E.
Employment status		
Employed	66.0	0.8
Unemployed	8.0	0.39
Out of labour force	26.1	0.70
Migrant status (born outside Ireland)	21.3	0.84
One parent migrant	16.03	0.74
Both parents migrants	6.29	0.38
Neither parents migrants	77.68	0.75
Years of schooling (mean number of years)	14.6 (years)	0.02

TABLE A2: SKILLS PROFICIENCY

Proficiency scores	Literacy		Numeracy		ICT	
	%	S.E.	%	S.E.	%	S.E.
Below level 1	4.77	0.46	7.66	0.52	20.82	1.08
Level 1	13.73	0.84	18.13	0.88	44.01	1.25
Level 2	37.18	0.91	37.68	0.96	30.46	1.09
Level 3	35.56	0.89	28.68	0.89	4.71	0.51
Level 4	8.31	0.57	7.2	0.64	-	-
Level 5	0.45	0.13	0.64	0.17	-	-

Note: ICT is reported in three levels only.

TABLE A3: PARTICIPATION IN ADULT FURTHER ADULT EDUCATION

	%	S.E.	%	S.E.
	No		Yes	
Formal	85.02	0.56	14.98	0.56
Non-formal	55.41	0.76	44.59	0.76
Any formal or non-formal education	49.6	0.67	50.4	0.67

TABLE A4: MOTIVATION TO LEARN

	Like learning new things		Get to the bottom of difficult things		Figure out how different ideas fit together		Looking for additional information	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
Not at all	1	0.17	2.45	0.27	3.35	0.29	1.46	0.21
Very little	3.52	0.3	5	0.35	7.4	0.43	3.2	0.32
To some extent	28.87	0.79	27.46	0.77	35.61	0.94	21.62	0.7
To a high extent	40.86	0.79	40.02	0.84	36.29	0.93	44.2	0.91
To a very high extent	25.75	0.9	25.08	0.83	17.35	0.77	29.51	0.93

TABLE A5: EVERYDAY SKILLS PRACTICE

	Reading		Writing		Numeracy		ICT	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
All zero response	0.92	0.17	8.65	0.53	13.23	0.55	1.08	0.24
Lowest Likelihood (less than 20%)	16.12	0.61	26.58	0.7	26.49	0.68	23.06	0.87
More than 20% to 40%	21.32	0.59	10.74	0.52	20.04	0.59	22.36	0.76
More than 40% to 60%	20.83	0.67	23.37	0.71	16.37	0.6	19.05	0.8
More than 60% to 80%	18.73	0.57	17.26	0.69	14.65	0.53	17.58	0.82
High likelihood (More than 80%)	22.09	0.73	13.4	0.49	9.22	0.48	16.87	0.71
Employed adults only								
All zero response	0.3	0.1	7.98	0.64	13.53	0.78	1.04	0.25
Lowest Likelihood (< 20%)	14.7	0.68	24.75	0.92	25.15	0.84	22.9	0.98
More than 20% to 40%	21.22	0.84	11.23	0.65	20.63	0.69	22.6	0.9
More than 40% to 60%	21.31	0.77	24.85	0.93	17.02	0.81	19.13	0.9
More than 60% to 80%	20.28	0.68	18.19	0.85	15	0.64	18.27	0.98
High likelihood (> 80%)	22.18	0.88	13	0.63	8.67	0.59	16.06	0.84
Unemployed adults / out of labour force								
All zero response	2.11	0.47	9.94	0.79	12.66	0.84	1.19	0.43
Lowest Likelihood (less than 20%)	18.85	1.09	30.12	1.25	29.09	1.27	23.47	1.74
More than 20% to 40%	21.5	1.01	9.8	0.8	18.9	1.07	21.73	1.59
More than 40% to 60%	19.91	1.17	20.5	1.11	15.11	0.82	18.85	1.32
More than 60% to 80%	15.73	0.94	15.47	1.05	13.97	0.84	15.82	1.31
High likelihood (More than 80%)	21.9	1.26	14.17	0.79	10.28	0.83	18.94	1.35

TABLE A5: HEALTH STATUS

Health status		
	%	S.E.
Excellent	24.13	0.84
Very good	36.62	0.83
Good	26.46	0.68
Fair	9.59	0.43
Poor	3.2	0.23

TABLE A7: SOCIAL TRUST AND POLITICAL EFFICACY (AGREEMENT WITH STATEMENTS)

Social Attitudes	Other take advantage		Trust only a few		Political efficacy	
	%	S.E.	%	S.E.	%	S.E.
Strongly agree	27.42	0.76	29.26	0.8	27.33	0.85
Somewhat agree	48.08	0.84	47.76	0.88	30.99	0.7
neutral	11.13	0.47	6.66	0.49	13.73	0.55
Somewhat disagree	11.63	0.54	13.95	0.53	23.37	0.63
Strongly disagree	1.74	0.18	2.38	0.23	4.57	0.36

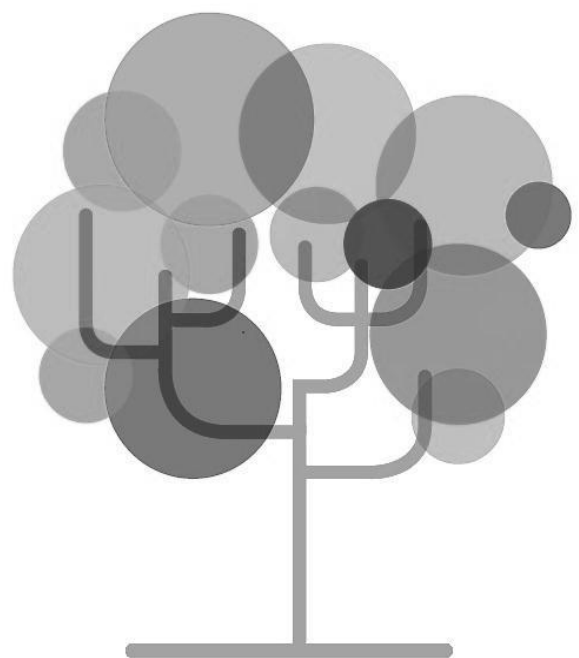
TABLE A8: VOLUNTEERING IN THE PAST 12 MONTHS

Volunteering	%	S.E.
Never	61.76	0.88
Less than monthly	18.18	0.68
Monthly, not weekly	8.47	0.38
Weekly not every day	9.5	0.49
Daily	2.09	0.22

TABLE A9: RESULTS OF ORDERED LOGISTIC REGRESSION ANALYSIS OF HEALTH AND SOCIAL OUTCOMES ON ADULT LEARNER TYPE

	Health			Social trust			Political efficacy			Volunteering		
	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p
Years of education	0.086	0.012	0.000	0.106	0.012	0.000	0.103	0.013	0.000	0.073	0.014	0.000
Years of age (25-65)	-0.025	0.003	0.000	0.007	0.003	0.006	0.005	0.003	0.078	0.038	0.003	0.000
Gender (male versus female)	0.032	0.057	0.582	0.111	0.069	0.108	0.085	0.056	0.130	-0.112	0.069	0.105
Born in Ireland (yes versus no)	0.302	0.058	0.000	0.109	0.075	0.145	0.034	0.074	0.648	0.611	0.091	0.000
Adult learner (reference category: high motivation, high engagement)												
Low motivation, no engagement	-0.398	0.175	0.023	0.071	0.149	0.632	-0.358	0.159	0.024	-1.576	0.172	0.000
Some motivation, some engagement	0.006	0.075	0.939	-0.159	0.079	0.045	-0.312	0.080	0.000	-0.552	0.076	0.000
Low motivation, low engagement	-0.146	0.102	0.154	-0.275	0.097	0.004	-0.471	0.108	0.000	-1.270	0.099	0.000
Literacy score (lowest to highest)	0.002	0.002	0.351	0.001	0.002	0.550	0.000	0.002	0.953	0.002	0.002	0.284
Numeracy score (lowest to highest)	0.002	0.001	0.243	0.001	0.002	0.460	0.002	0.002	0.242	0.000	0.002	0.832

Note: Statistically significant results are in bold ($p < 0.05$).



HEALTHY & POSITIVE
AGEING INITIATIVE