Human Capital Indicators consultation

3rd September 2019

Contents

General information

Why we are consulting

We are reviewing how we measure human capital in the UK. We want to hear your views on our proposals to take an indicator-based approach to measure human capital, focusing on possible measures rather than existing data.

Consultation details

Issued:

03/09/2019 at 00:00

Respond by: 11/11/2019 at 23:59 – open for 10 weeks

Enquiries to

Consultation Coordinator,
Room 1.101
Office for National Statistics,
Government Buildings,
Cardiff Road,
Newport,
South Wales,
NP10 8XG.

Email: ons.communications@ons.gov.uk

Phone: 0845 601 3034

Audiences

We welcome responses from anyone with an interest in improving people's development throughout their lives and how this could be measured. We would particularly like to hear from charities, academia, devolved administrations, think tanks, central government departments, local government and trade bodies.

Territorial extent

This consultation relates to measures for the United Kingdom.

After the consultation

Your feedback will help us shape our approach to measuring human capital in the UK. We will publish a formal response within 12 weeks of the consultation end date, summarising the feedback and plans we will take to address it.

How to respond

We encourage you to respond online wherever possible as this is our preferred method of receiving responses.

However, responses in writing or via email submitted to the below addresses will also be accepted. Should you wish to submit your main response via the e-Consultation platform and any supporting information via hard copy or email, please be clear that this is part of the same consultation response.

Respond online at: Consultation Questionnaire
or
Email to: economic.wellbeing@ons.gov.uk
or
Write to:
Gueorguie Vassilev
Room 2.164
Office for National Statistics,
Government Buildings,
Cardiff Road,
Newport,
South Wales,
NP10 8XG.

When responding, it would be helpful if you could let us know whether you are responding as an individual or representing the views of an organisation. Your response will be most useful if it is framed in direct response to the questions posed, though other comments and evidence are also welcome.

Accessibility

All material relating to this consultation can be provided in braille, large print or audio formats on request. British Sign Language interpreters can also be requested for any supporting events.

Confidentiality and data protection

ONS may wish to contact you in the future to discuss your response to this consultation, or to alert you to related consultations. Please let us know if you do not want to receive these communications by emailing **ons.communications@ons.gov.uk**.

We would like to know as much as possible about what you think of ONS and our proposals. We aim to be as open and transparent as possible, so we will publish a summary of the responses to this consultation – comments will not be attributed to specific organisations or individuals. We will list all of the organisations that participated in this consultation. All responses to consultations are subject to release under the Freedom of Information Act, although no personal information will be released in such instances. Please see our privacy notice for full details of how we will handle your data.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles, available here https://www.gov.uk/government/publications/consultation-principles-guidance.

If you have any complaints about the way this consultation has been conducted, please email: ons.communications@ons.gov.uk.

Consultation Overview

ONS is reviewing how we measure human capital in the UK, and we'd like your views on our proposed approach.

Human capital is a measure of the skills, knowledge and experience of an individual or population which can be applied in the economy or in society at large. It is widely recognised as a driver of productivity and helps people achieve their needs and wants and improve their well-being.

ONS currently measures human capital stock in monetary terms, as the discounted lifetime earnings of the working age population. We use an internationally recognised approach set out in the United Nations Economic Commission for Europe (UNECE) guide on Measuring Human Capital[1].

In the 2018 Spring Statement[2], the Chancellor of the Exchequer asked the ONS to develop a more sophisticated measure of human capital. From this ONS has considered how to improve and expand upon our existing estimates to meet a wider set of users' needs.

In addition, there has been growing UK user interest to better understand wider impacts to improve sustainable growth in the economy and the impact on the individual. These focus on:
- Understanding skills gaps and the threats of automation across all sectors of the economy;
- The value for money of education and training, from vocational and higher education to apprenticeships and job-related training;
- Producing international comparable estimates of human capital.

There are also international efforts to develop comparable human capital estimates for policy, from work the OECD is doing on productivity to efforts from the World Bank to develop a human capital index, and ONS is engaging with international efforts on this topic, which feed into this consultation as well as wider work.

ONS published a workplan in October 2018[3], setting out how we plan to review human capital estimates in the UK. This included a recommendation

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[1] https://www.unece.org/fileadmin/DAM/stats/publications/2016/ECECESSTAT20166_E.pdf
[2] https://www.gov.uk/government/speeches/spring-statement-2018-philip-hammonds-speech
[3] https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/humancapitalworkplan/2018

to consider the feasibility of an indicator-based approach to measuring human capital, which was alongside other areas of work we will look to develop in the future.

This consultation seeks your views on our plans for a new indicator-based approach, presented as a dashboard of indicators. An indicator is a measure, a statistic, of a variable of interest. A dashboard is a collection of indicators presented together. Examples of existing uses of indicator approaches can be found in the consultation annex.

This consultation sets out how we plan to:

1. measure human capital across the whole lifetime of an individual (rather than focus solely on the working age population)
2. expand the scope of our analysis, focusing on a series of themes and mechanisms.
3. focus on specific mechanisms that influence a person's human capital (rather than wider associations)
4. present a series of indicators, grouped into three groups (input, outcome and enabling indicators).

This consultation represents the first of several phases in our wider review of measures of human capital. This first phase maps out a human capital measurement framework alongside potential indicators of human capital. This is not restricted to indicators currently measurable by the data available to the ONS. Instead, we will focus on an optimal set of indicators to provide a more complete picture of what impacts an individual's human capital improvement. Other phases will look to review the full list of skills and knowledge that should be captured, as well as data sources to fill them. An overview of the different phases is outlined in the consultation annex.

Why are we proposing an indicator-based approach to measure human capital?

ONS currently measure the stock of human capital in the UK using the income-based approach, one of three approaches set out in the UNECE guide on Measuring Human Capital[4]. This defines people's human capital as their discounted lifetime earnings, so that their earnings are assumed to equate to the value they bring into the economy.

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[4] https://www.gov.uk/government/speeches/spring-statement-2018-philip-hammonds-speech

ONS publishes these estimates on an annual basis[5]. In 2017, we found the UK's real full human capital stock was £20.4 trillion, equivalent to just over 10 times the size of UK gross domestic product (GDP). It also showed how human capital stock grew in current price terms but decreased in real terms.

Although our estimates are produced in line with latest international guidance, we recognise the importance of improving and expanding upon them to better meet users' needs.

As outlined in our workplan to review our measures, we propose taking an indicator-based approach, supplementing our existing human capital estimates with a wider suite of indicators. This will allow a broader consideration of the factors that impact on people's skill and knowledge development throughout their lives, as well as starting to consider the impact human capital has on other outcomes, such as on health and well-being.

We expect these indicators can be presented in a dashboard, allowing users to explore the different ways human capital can be measured. This will supplement our existing measure of human capital stock, which we will continue develop to provide an important measure for the UK economy. We think a dashboard can provide a visual overview of a set of indicators that bears a direct or indirect relationship to a measure of progress. Users would be able to see a range of factors that have an impact on human capital, as well as their outcomes on human capital.

It is envisaged that these indicators could then be used by a range of people to inform work across a number of topics. For instance, these indicators could be used by **central and local government** in policy making by considering different themes alongside each other. The greater breadth and depth of information proposed in this framework could also support more detailed and innovative research and analysis for **think tanks and academics**. Finally, the measures can also be used to better inform decisions faced by **citizens**. This could be in the context of the family and parenting, looking at different techniques to improve their children's skills development, or on people's personal career decisions.

More information on the potential costs and benefits, and ways this information could be illustrated, can be found in the <u>consultation annex</u>.

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[5]
https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/humancapitalestimates/2004to2017

Questions:
Q1: Do you agree with ONS taking forward an indicator-based approach to go alongside other areas of work in the ONS human capital workplan?

Yes, No (*Please elaborate on your reasoning*)

Q2: Would the proposed indicator approach be useful for the work you are planning to do?

Yes, No (*Please elaborate on your reasoning*)

Q3: Would you recommend any alternative approaches that would be useful for you and your work?

(Please write in here)

Expanding our scope, and definition of human capital

We are planning to apply a **lifetime acquisition framework** to measuring human capital. This means we will look at what factors improve people's knowledge, skills, competencies and attributes throughout their lives, from their birth till the end of their life. This expands the scope of our current approach, which is limited to the working population and their earnings.

This approach is consistent with evidence from psychology, neuroscience, as well as economics, that people develop throughout their lives, and incorporates discussions of lifelong learning. Additionally, it shows that there are separate drivers of development across an individual's life stages. Alongside this document, we have published an evidence review capturing existing evidence on drivers across a person's life.

The next figure illustrates how different factors (e.g. education, health, or characteristics such as their personality traits) may impact on the value of a person's human capital. Some of these may only apply to specific stages in life, while others may be applicable at multiple life stages. These are not all shown in the figure.

Figure 1: Lifetime acquisition model of human capital
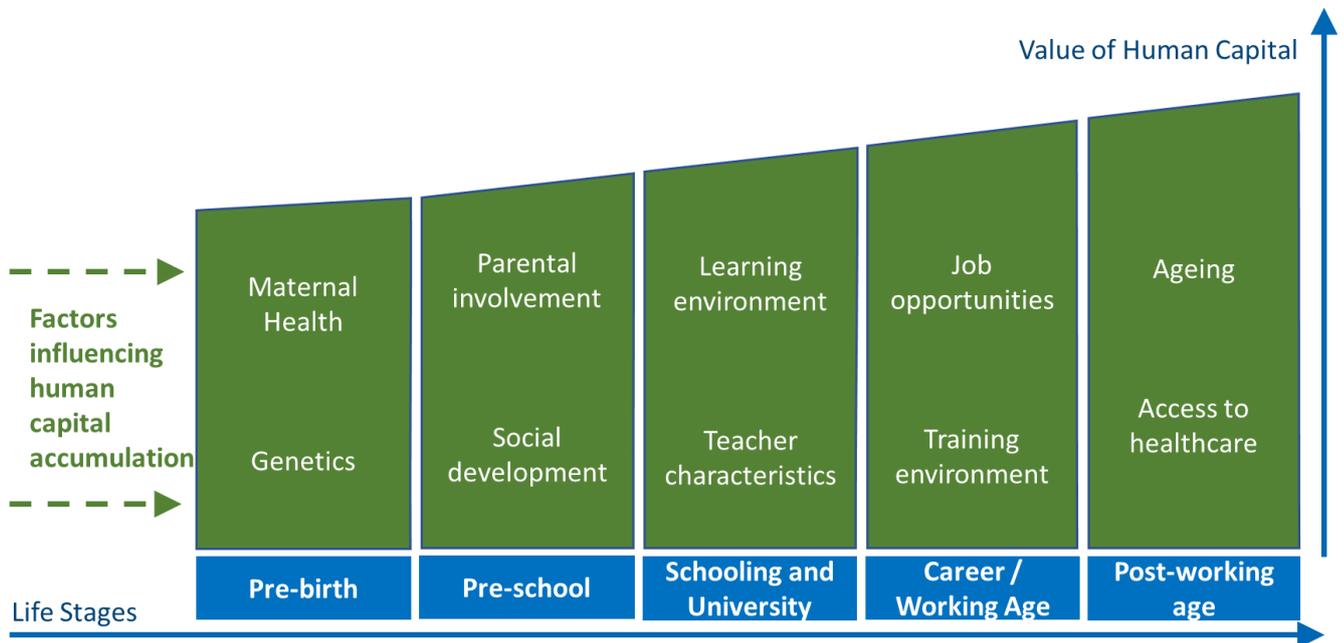
A lifetime acquisition framework can provide a more detailed picture of people's skills and knowledge, informing wider discussion into the current as well as future potential human capital. It can also allow comparison of changes across cohorts and generations.

Another benefit of considering different life stages is we can measure how earlier development impacts on later outcomes. This is in line with James Heckman's assertion that skills beget skills. Figure 2 illustrates this, showing how factors which impact a child's human capital can extend into benefits for an adult's human capital. This could be through direct means of accumulating knowledge, or indirect through the extra skills improving other outcomes, such as health, which then improve outcomes later in life.

Figure 2: Compound effects of gaining human capital throughout life
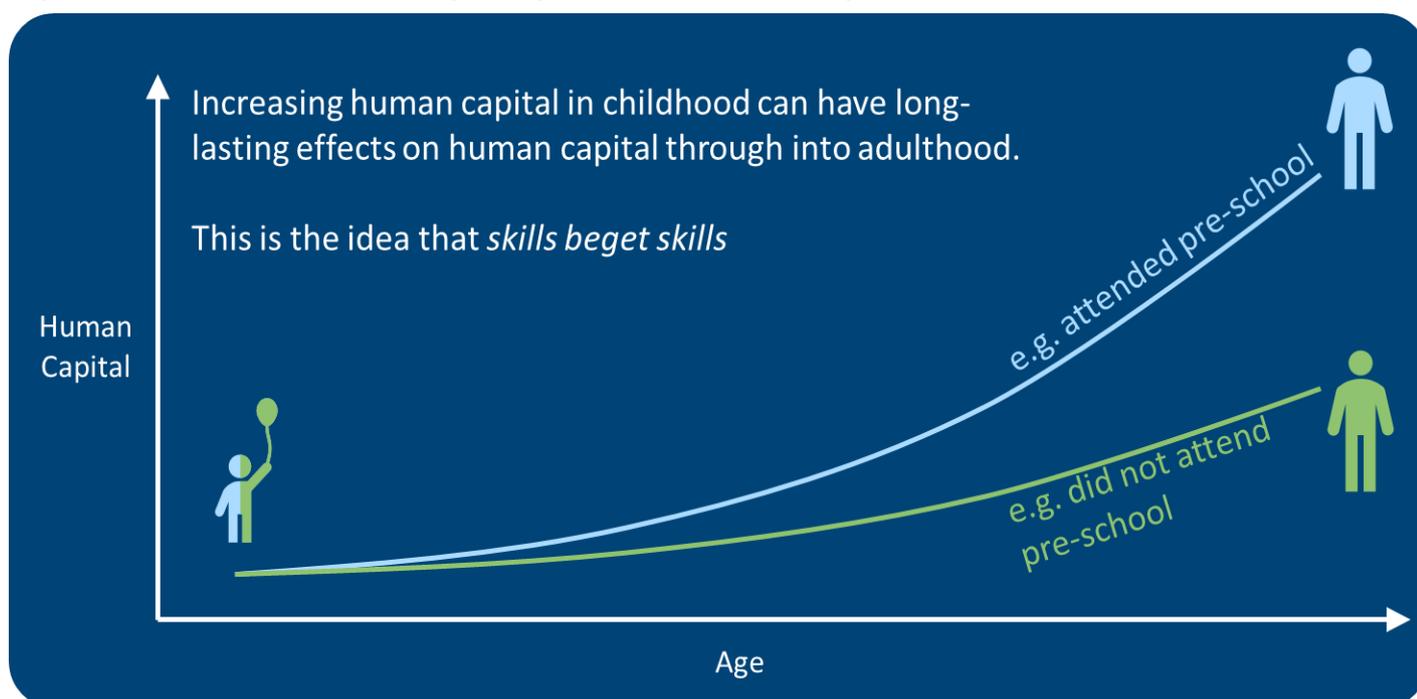
As explained earlier, the current estimates of human capital stocks assume earnings are an accurate measure of people's human capital. As well as expanding the scope, we are proposing to broaden this definition of human capital. In addition to their economic well-being, we plan to consider the impacts on an individuals' personal and social well-being. This is seen in the indicators we are considering, where we propose measuring the impact on individuals' skills and knowledge, as well as health, employment, wage and education outcomes. These are split as primary and secondary impacts, or 'outcomes'.

We believe it is important to consider this wider individual context rather than simply human capital in its facilitation of labour market outcomes. We hope that by broadening the definition of human capital it will allow us to value a diverse set of skills, knowledge, competencies and attributes within the UK. Overall, we are aiming for a definition which allows the UK to cultivate skills and knowledge that will enhance future health and well-being, regardless of the context in which skills or knowledge are improved.

At the same time, we recognise human capital has broader impacts, including to other individuals and society at large. At this stage we are **not** looking to expand the scope to consider wider societal benefits, such as impacts on civic participation, productivity and the economy. However, we will look to cover these aspects in the next phase of the project.

Questions:
Q4: Do you agree with taking a lifetime acquisition approach to measuring human capital?
　　　Yes, No (*elaborate on reasoning*)

Q5: Do you agree with broadening our definition to include impacts on personal and social well-being (in addition to economic well-being)?
　　　Yes, No (*elaborate on reasoning*)

Themes to measure human capital

In order to consider the most appropriate indicators to be used in measuring human capital, we are focussing on several broad themes, each relating to a set of mechanisms and indicators sitting under them. The initial set of themes were selected based on an evidence review of relevant academic literature which was commissioned by ONS and undertaken by National Institute of Economic and Social Research (NIESR)[6], as well as further discussions with experts.

Each theme proposed below is broken down into indirect and direct mechanisms, as follows:

Compulsory, further and higher education

Figure 3: Proposal of compulsory, further and higher education theme
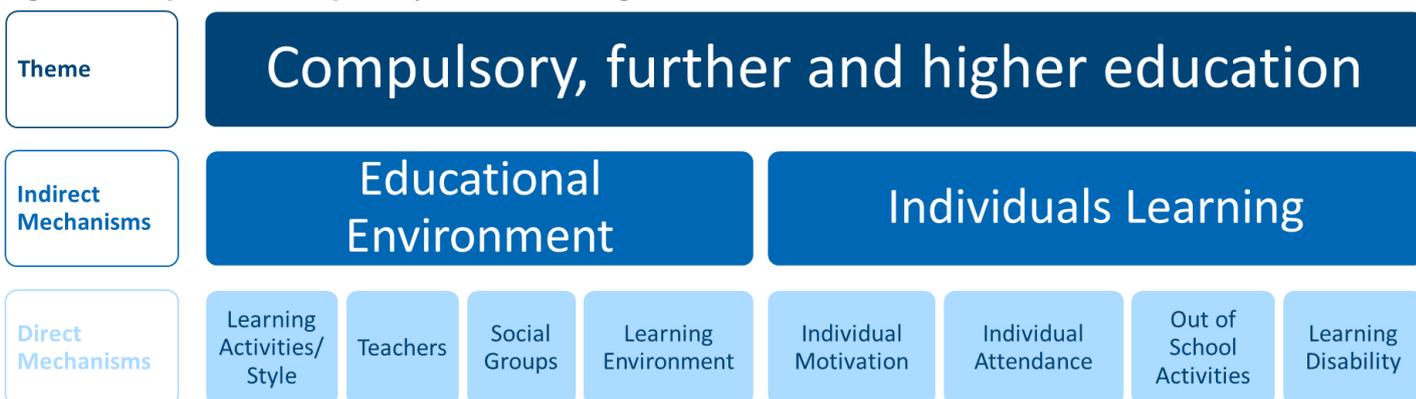
- Covering formal and informal education.

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[6] The ONS have subsequently undertaken additional broader analysis, discussions and engagement with stakeholders to build up the proposals around these evidence-based themes.

- Measures the mechanisms that impact on learning in a schooling environment or home schooling, for example different pedagogical techniques such as collaborative learning.
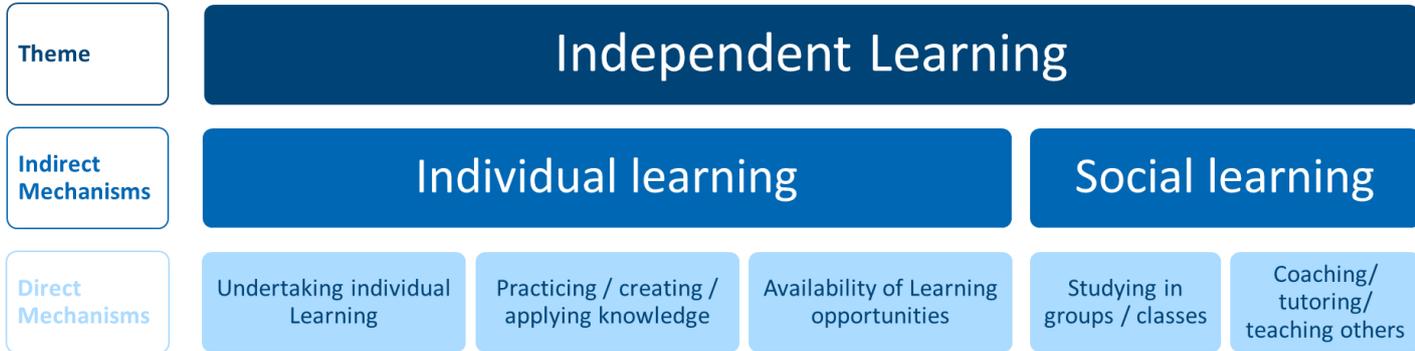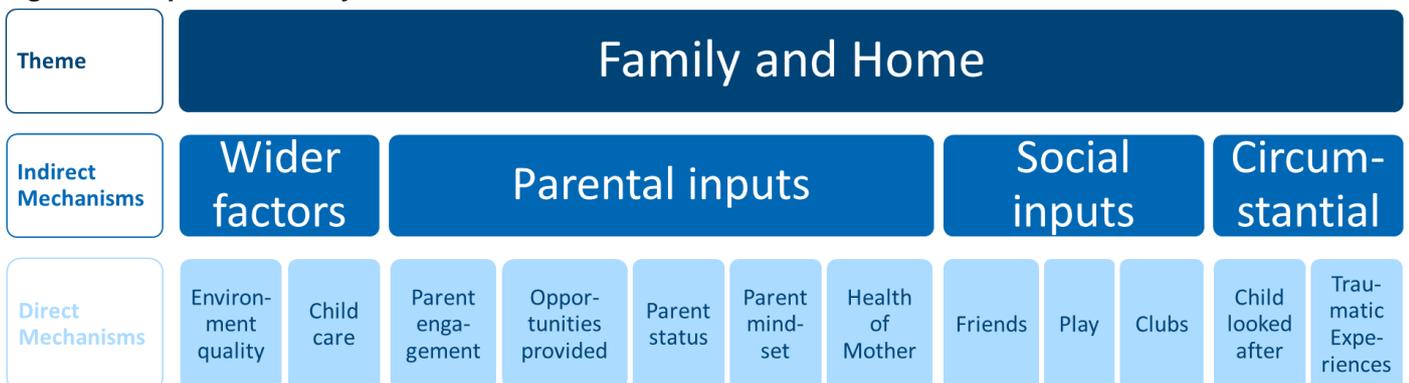
Independent learning

Figure 4: Proposal of independent learning theme

Theme	Independent Learning				
Indirect Mechanisms	Individual learning			Social learning	
Direct Mechanisms	Undertaking individual Learning	Practicing / creating / applying knowledge	Availability of Learning opportunities	Studying in groups / classes	Coaching/ tutoring/ teaching others

- Covers learning outside of the formal environment of schooling and work throughout life.
- Measures the mechanisms that impact on skills development through programs, courses, tutoring and other informal opportunities children and adults spend time doing.

Family and home

Figure 5: Proposal of family and home theme

Theme	Family and Home										
Indirect Mechanisms	Wider factors		Parental inputs					Social inputs		Circum-stantial	
Direct Mechanisms	Environment quality	Child care	Parent engagement	Opportunities provided	Parent status	Parent mindset	Health of Mother	Friends	Play	Clubs	Child looked after	Traumatic Experiences

- Covering mechanisms from family background and environment, household structure and location, and social interactions through the family and home, passed down to children.
- How these characteristics may impact physical and mental development, as well as a child's future ambitions.
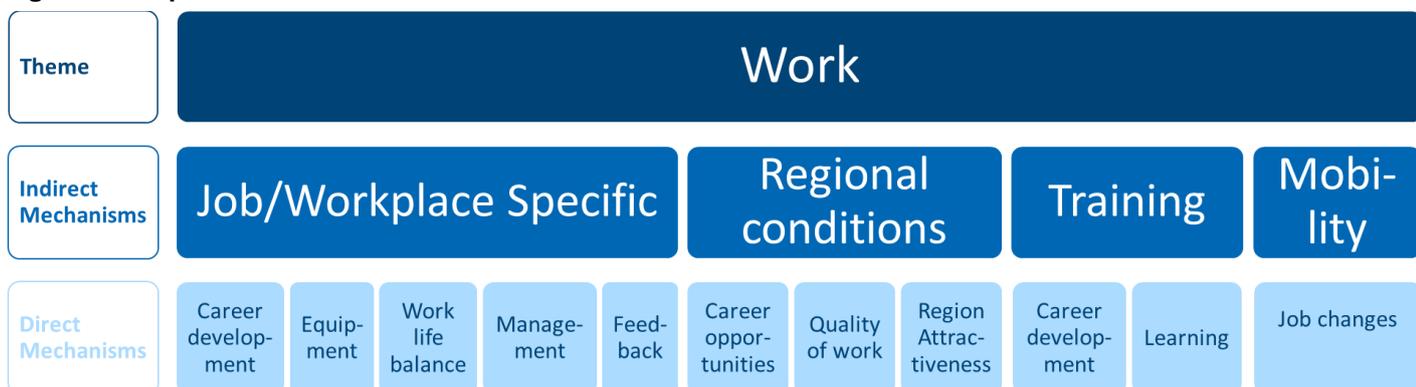
Health, including ageing

Figure 6: Proposal of health theme

Theme	Health									
Indirect Mechanisms	Conditions			Access	Lifestyle				Ageing	
Direct Mechanisms	Mental health	Cognitive ability	Physical condition	Healthcare usage	Relaxation	Mental state	Physical state	Nutrition	Educational attainment	Cognitive function
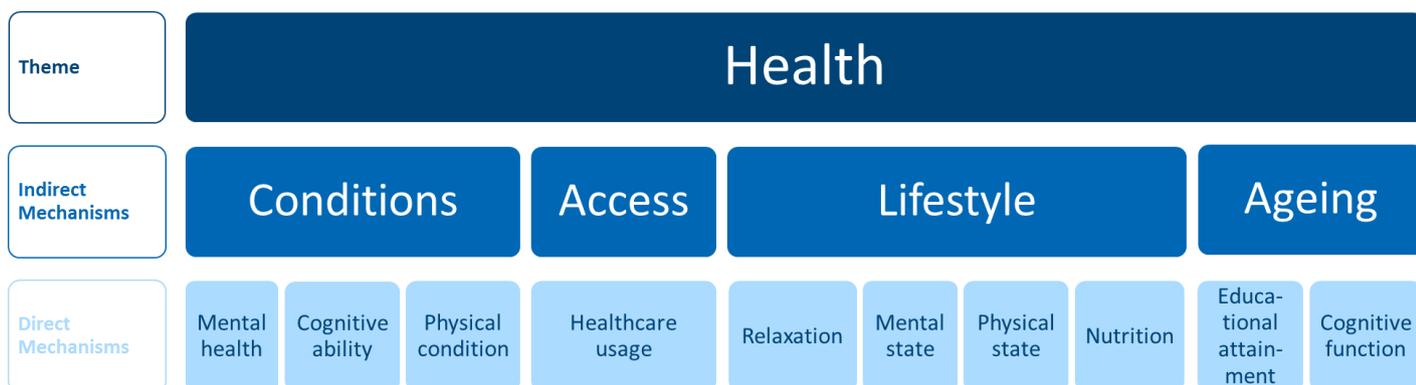
- Capturing both controllable and non-controllable health conditions, as well as other lifestyle choices impacting on human development through health, whether at work, school or outside.
- The impact health has on individual development, both physically and cognitively, as well as the impact higher human capital may have on future health outcomes.

Work

Figure 7: Proposal of work theme

Theme	Work									
Indirect Mechanisms	Job/Workplace Specific					Regional conditions			Training	Mobility
Direct Mechanisms	Career development	Equipment	Work life balance	Management	Feedback	Career opportunities	Quality of work	Region Attractiveness	Career development	Learning	Job changes

- Type of work, work environment and job opportunities, including in-work training and job-security, as well as factors relevant both for people in and out of work.
- Impact on earnings, improved longer-term prospects of employment or progression, or higher level of skills and knowledge.

Crime

Figure 8: Proposal of crime theme

Theme	Crime			
Indirect Mechanisms	Exposure			Rehabilitation
Direct Mechanisms	Crime rates in location	Gang membership	Family background	Previous experience with crime

- Exposure to crime where a person lives and studies.
- Impact on development by participating in crime.

Personality traits

Personality traits and characteristics are recognised as a theme. However, the way they interact and influence a person's human capital is through their use, application in school, the home and work, and hence do not make sense to be shown as indirect and direct mechanisms.

- Innate individual behaviours and qualities such as attitudes, ways of approaching work, school, and interacting in social situations.
- The impact on the ability to learn and develop more, improve employment and education opportunities, and to maintain fitness and well-being levels.

Whilst **environment** plays an important part in a person's human capital, its impact has been spread across the themes where environment may have an impact (e.g. work, home or other locations).

Further information on the themes we are proposing can be found in the consultation annex.

Questions:
Q6: For each theme, do you agree it and its proposed mechanisms are complete and relevant?

a. Compulsory, further and higher education

Yes, No
(elaborate on reasoning)

b. Independent learning
   Yes, No
   (elaborate on reasoning)

c. Family and home
   Yes, No
   (elaborate on reasoning)

d. Health, including ageing
   Yes, No
   (elaborate on reasoning)

e. Work
   Yes, No
   (elaborate on reasoning)

f. Crime
   Yes, No
   (elaborate on reasoning)

g. Personality traits
   Yes, No
   (elaborate on reasoning)
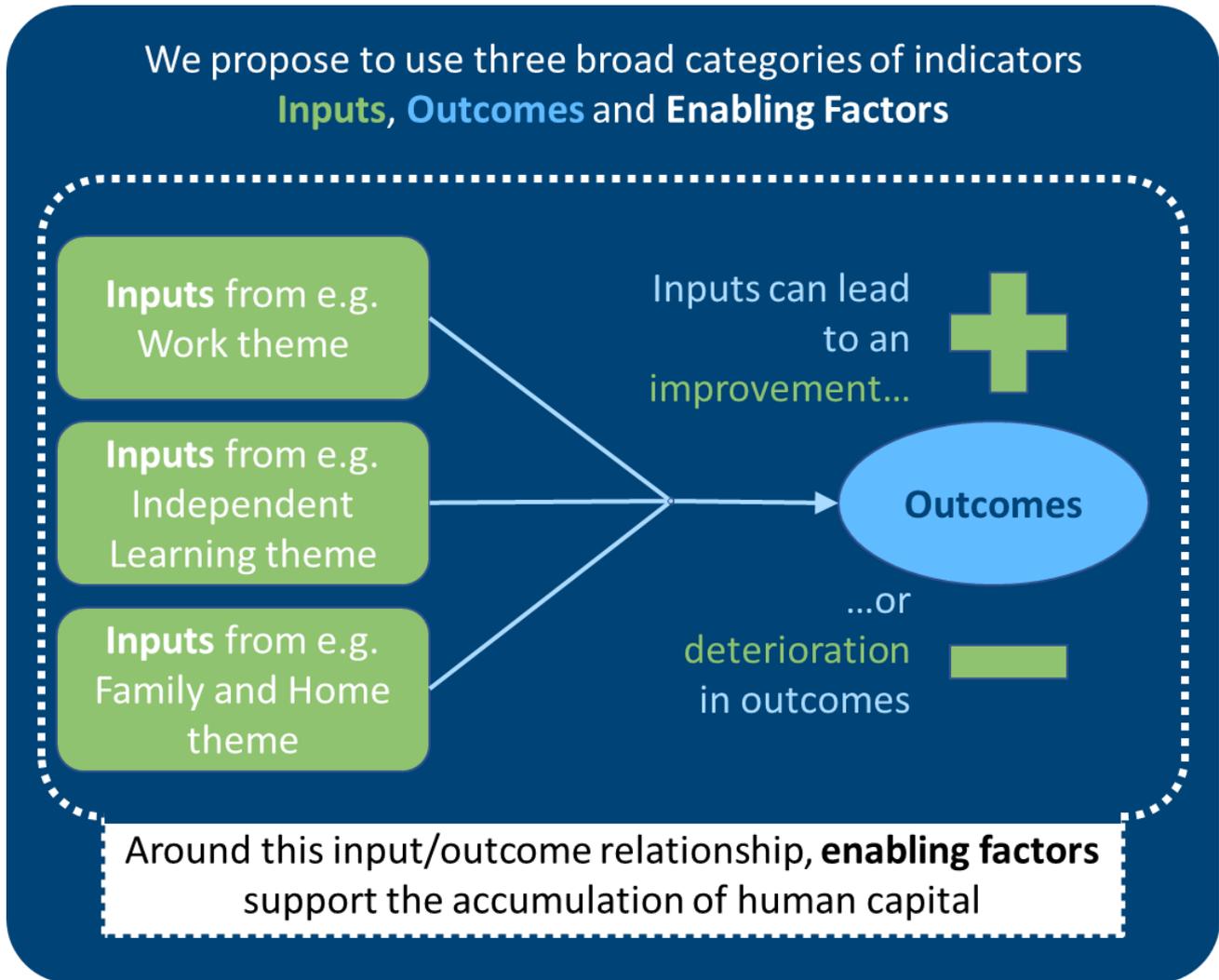
Q7. Are there any other themes that should be included?
   Free text box

Types of Indicators

In our plan to introduce an indicator-based approach to measuring human capital, we propose to use three broad categories of indicators across each life stage. Where data allows, these can then be broken down by useful categories such as region, occupation, socio-economic status and other appropriate splits. The relationship between the types of indicators proposed is shown in the diagram 9:
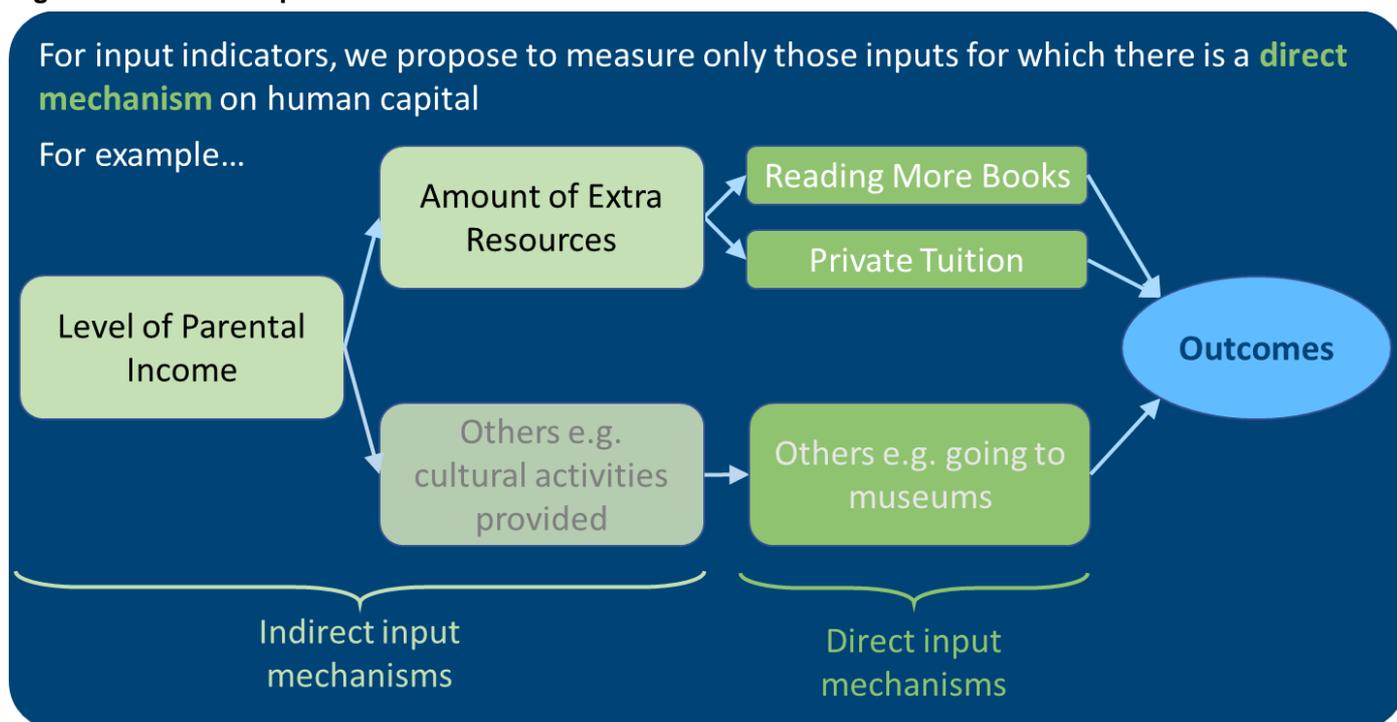
Figure 9 The relationships between different indicator types

We propose to use three broad categories of indicators
Inputs, **Outcomes** and **Enabling Factors**

Inputs from e.g.
Work theme

Inputs from e.g.
Independent
Learning theme

Inputs from e.g.
Family and Home
theme

Inputs can lead
to an
improvement…

Outcomes

…or
deterioration
in outcomes

Around this input/outcome relationship, **enabling factors**
support the accumulation of human capital

Input indicators

These will measure activities which impact directly on individuals' human capital. For example, attending private music lessons would be an input indicator which would directly impact on an individual's human capital, whilst parental income and the extra resources that brings would be an indirect mechanism that helps facilitate attending the private lessons. This relationship is shown in figure 10 below:

Figure 10 Relationship between direct and indirect mechanisms

For input indicators, we propose to measure only those inputs for which there is a **direct mechanism** on human capital

For example…

Level of Parental Income → Amount of Extra Resources → Reading More Books / Private Tuition → Outcomes

Level of Parental Income → Others e.g. cultural activities provided → Others e.g. going to museums → Outcomes

Indirect input mechanisms

Direct input mechanisms

Focusing on these direct mechanisms for the input indicators highlights the key drivers and other aspects that matter for an individual's human capital development.

The effects of wider circumstances, which may have an influence on human capital through indirect mechanisms are nonetheless captured in the outcome indicators.

Outcome indicators

Outcome indicators are linked to inputs. They will look to measure the benefits (or downsides) to individuals from different drivers and factors identified. We believe they should be calculated by removing the effects of other inputs as much as possible, in order to more accurately assign the benefit of increasing or decreasing a certain input.

We propose to split human capital outcomes into two levels: primary and secondary outcomes.

- **Primary outcomes** will measure the acquisition of skills or knowledge. For example, the increased reading skills and understanding of language from reading more books

- **Secondary outcomes** will measure the impact and ultimately the value to the individual of the acquired skills and knowledge. These will be wages and salaries and wider labour remuneration if relevant, as well

as wider employment opportunities, educational outcomes, health and individual subjective well-being.

Figure 11: Primary and secondary outcomes across life stages
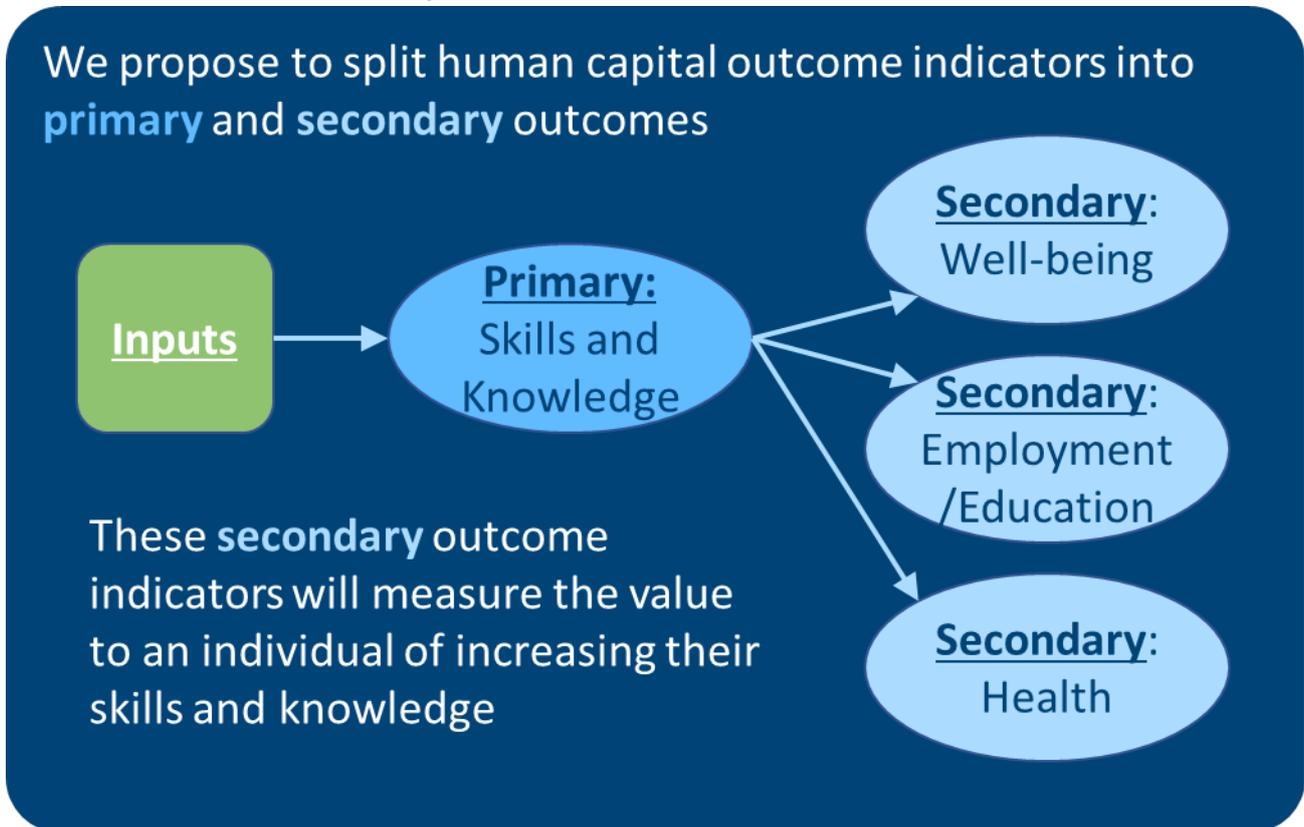
We believe the benefit of capturing primary and secondary outcomes separately allows users to understand if the subsequent higher skills and knowledge also translate to higher labour market, educational or other outcomes, or if there are constraints such as economic frictions.

It also allows for us to step away from the social context of valuing of human capital. For example, someone with a skill such as programming may be more highly valued in the economy through higher earnings resulting from having this skill, while skills needed in social care are less highly paid. However, measuring the increase to people's skills directly removes the need to value the skill relative to other skills, but to focus on whether it has improved or not.

We think it is important to capture wider secondary impacts (rather than simply labour market outcomes such as wages), we can see how human capital impacts on people's health and their well-being. This allows us to see

the outcome on these factors as well as earnings, which helps policy-makers to make more informed choices.

Enabling factors

These will measure the factors which enable individuals to improve rather than directly causing an improvement. For example, a supportive home environment would enable an individual to read more books (input indicator), which in turn could support an increase in skills and well-being (outcome indicators). Effectively, these factors facilitate the improvement of someone's skills and knowledge, by providing the opportunity to improve their human capital.

These aspects still matter and contextualise the benefits of certain factors, but these benefits cannot be as easily attributed (which is why we propose measuring them as enabling factors). This is demonstrated in figure 9 above.

The working list of proposed indicators can be found here, but this is not final and we would be interested to get your thoughts on the existing list, as well as any missing indicators.

Questions:
Q8: Do you agree with these three types of indicator?
    a. Inputs
       Yes, No (elaborate on reasoning)
    b. Outcomes
       Yes, No (elaborate on reasoning)

    c. Enabling
       Yes, No (elaborate on reasoning)

    d. Other? Please specify what this is and how you could use it

How we plan to derive these indicators

In order to take an indicator-based approach to measuring human capital, we will need to:

- identify the sources of data to supply these indicators.
- develop the statistical methodology to derive each indicator.

Our focus in considering relevant indicators has been to develop a conceptually complete and coherent set of measures relevant to human

capital development. In practice, this means that not all of the proposed indicators are measurable by data that are currently available to ONS. However, we believe it is important to focus on an optimal set of indicators, to provide a more complete picture of what impacts on individuals' human capital improvement.

The other reason we have focused on the relevant conceptual indicators first is to identify data gaps that may be important for users to fill with new sources. We have first considered what data may be used in creating these measures and the methods needed to measure the outcomes from higher skills and knowledge across an individual's life. This is so that benefits from drivers can more accurately be assigned to certain factors. Alongside this consultation we are publishing an annex that details the data needs and methods we are looking to utilise.

However, we think there are data gaps in relation to accurately measuring skills and knowledge of individuals directly throughout their lives. This is key in capturing primary outcomes. We also think there will be data gaps in accurately measuring personality traits and certain health conditions, and their impacts on labour market and educational outcomes. For health, if we choose the official incidence versus self-reported symptoms of conditions, this could pose data issues. Additionally, there may be gaps in timely indicators relating to time spent doing specific skill-accumulating activities, such as learning at home. Finally, we think there will be more data gaps with factors particularly in the life stages before children attend school, though these are known to have a very large impact on children's outcomes throughout their whole lives.

There will likely be other data gaps identified once a process of data collection begins, so we would be interested to know if filling data gaps would be more important to you than creating proxy indicators.

Question:

Q9: Which anticipated data gaps are you more interested in us filling and why?

(Expand your answer)

Q10: Would you prefer ONS to prioritise filling data gaps or to create proxy indicators?

> *Yes, No*

(elaborate on reasoning)

Whilst the methods to derive these indicators are out of scope for this consultation, we are inviting expressions of interest to join a technical panel to help develop the final list of indicators. This panel can also help inform methods and sources to apply to derive the indicators.

This will also be discussed further in an upcoming workshop in the autumn, while the consultation is still live. The consultation annex provides some initial thoughts on this process, and the list of indicators we have currently proposed is also linked.

Question:

Q11: Would you be interested in joining a technical panel to help oversee the development of the indicators, methods and data sources to measure human capital?

Yes (contact details), No

Q12: Would you be interested in attending the workshop engagement event in autumn, as well as future workshops, to discuss the proposals, methods and data sources to measure human capital?

Yes (contact details), No

OGL