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Education, prospection and social networks: surveying ideas-engagement amongst 7,000 respondents across seven European countries

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Abstract

Purpose – This study aims to present efforts by the research team to develop a new survey instrument measure ideas-engagement that explores patterns of ideas-engagement across seven European countries, assessing how each performs in relation to the key criteria of education, social networks and a prospective mindset as well as the value placed by respondents on engaging with ideas. The authors also examine the extent to which respondents engage with ideas effectively.

Design/methodology/approach – The authors operationalised a previously developed theoretical framework: developing a survey instrument, the Ideas Networks Prospection and Education Survey and administering this to 1,000 participants per country (7,000 respondents in total). The survey explores factors influencing ideas engagement, including the respondents' educational background, social networks and forward-looking attitudes. Descriptive analysis examines variations in these factors across cultural and national contexts.

Results provide country profiles for education, prospection and social network characteristics as well as ideas-engagement. Countries with higher individualism and long-term orientations, such as Sweden and Finland, exhibited stronger critical engagement with ideas, whereas more collectivist nations like Italy and Spain demonstrated larger networks but lower criticality scores.

Originality/value – This study operationalises a novel theoretical framework for understanding ideas-engagement and explores how cultural and individual factors shape engagement with both beneficial and harmful ideas. By comparing diverse European nations, the study provides an initial analysis of the complex interplay between cultural dimensions and individual tendencies in shaping an ideas-informed society. This framework supports future research and interventions aimed at enhancing informed decision-making and critical engagement in the face of misinformation.

Keywords Education, Social networks, Ideas, Ideas-informed society, Ideas-engagement, Homophily prospection, Theoretical frame, Ideas networks prospection, Engagement survey

Paper type Research paper

Ideas-informed society and the importance of ideas-engagement

The ideas-informed society represents a normative ideal of wanting people to seek out and engage with positive ideas while, at the same time, identifying and rejecting dark ideas

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(Brown *et al.*, 2022a; Brown *et al.*, 2022b). Positive ideas are those which can improve the lives of citizens and communities for the better. For instance, an individual may engage with factual ideas related to how to live more healthily and, as a result, cut down on the amount of alcohol they consume or increase the amount they exercise they partake in, so reducing their chances of avoidable cancers (Campbell, 2023). Other benefits of positive ideas may prove to be transformative over the longer term. For instance, prolonged ideas engagement that serves to build one's cultural capital can provide a means to achieve better educational attainment, inter-generational social mobility as well as self-actualisation (Castling and Johnston, 2023; DiMaggio, 1982; Franco *et al.*, 2019; Hochschild, 2010; Pinker, 2018). The ideas-informed society in its most positive form thus represents the benefits of formal, informal and community learning over the life course. Yet, although potentially beneficial, not everyone who might gain from engaging with positive ideas does so. For instance, previous analysis (Brown *et al.*, 2022a) suggests the presence of close-knit communities of individuals with lower levels of education and who are unemployed or who work in routine or semi routine roles. The members of these communities are less likely to see value in ideas-engagement, to engage in activities that provide access to ideas, nor are they likely to discuss news, current affairs and new societal developments with friends, family and work colleagues (Brown, 2021; Brown *et al.*, 2022a). At the same time, such communities stand to gain from engaging with positive ideas and so be better positioned to make good decisions. For instance, we know that by their very nature (i.e. given they are typified by lower levels of education/higher levels of manual occupation), such communities are likely to have higher levels of economic deprivation and so will face very specific social problems for which ideas-engagement might provide a panacea (Brown, 2021; Centre for Social Justice, 2023). This lack of engagement with positive ideas thus highlights the importance of seeing the value of ideas engagement as well as having access to positive ideas.

In contrast, dark ideas are those that are either factually wrong but are believed by individuals (referred to as type one dark ideas), or those which promote sub-optimal outcomes for individuals and communities (type two dark ideas). Type one dark ideas can broadly be categorised under the broad umbrellas of fake news, science denial and conspiracy theory (for instance, the notion that Donald Trump staged his own attempted assassination in 2024 would count as a type one dark idea: Milmo, 2024). The circulation of these ideas within mainstream society is now so rife that MPs in the UK have now been issued with a guide for identifying them (McKiernan, 2024). Type one dark ideas are also increasingly finding their way into the curriculum of illegal schools emerging across England (i.e. institutions providing full time education, but which are not registered with the Department for Education; so functioning under the radar of both local authorities and schools regulator, *Ofsted*). In recent articles, for instance, journalist Tom Ball has revealed findings from his undercover investigations into two such schools in England (Ball, 2023, 2024). Ball discovered that both schools teach curricula steeped in conspiracy theories and outright misinformation. For example, students at these schools are taught that COVID-19 was a "PLANdemic" orchestrated by the "World Hoax Organisation", that aircraft vapour trails are intended to cause dementia, that governments had prior knowledge of events like 9 / 11, that dinosaurs never existed and that crystals can cure serious illnesses because the human body is composed of energy. Although the number of students attending illegal schools is relatively small, the UK Department for Education estimated that 126,100 children were home-schooled in 2022–2023 (Department for Education, 2024). Although most were not in illegal institutions, a significant number remain vulnerable to misinformation, potentially leading to harmful consequences.

Type two dark ideas are perhaps best exemplified by those which are populist in nature. Populism relies heavily both on "post truth" (a situation in which people readily accept arguments based on their emotions, beliefs and need for hope, rather on the basis of facts) [1], as well as the production of "alternative facts" (a phrase first coined by Kellyanne Conway, an advisor in US President Donald Trump's first term in office) (NBC News, 2017). Populism uses fear and anger, combined with misinformation, to create division; with the ultimate aim of the populist being to secure power rather than to improve the lives of citizens for the better (Open Society, 2023). Furthermore, this ability to impart a perspective far removed from what is objectively true has also facilitated the correlations we now see between extreme far right and far left populism with type one dark ideas, such as science denial, especially regarding global heating and the lock downs instigated by governments worldwide in response to COVID-19 (Cheung, 2020; Craig, 2020; Hamilton, 2017; Imhoff *et al.*, 2022). Belief in both forms of dark ideas has been fuelled by the emergence and massive growth in the use social media. This is because the way social media platforms function, means there is every possibility that users become exposed to misinformation. For example, the "algorithmic amplification" approach to content curation used by, for example, "X" and Facebook, typically prioritise user exposure to content that generates high reactions (likes, shares, comments), leading to certain types of content being shown more prominently to users, even if this is not factually accurate or representative of diverse perspectives. Furthermore, the operation of filter bubbles, leads to users more exposed primarily to content that aligns with their observed preferences (i.e. what they click on: typically corresponding to content affirming their existing views): the resulting "echo chambers" correspondingly reinforce biases and limit exposure to diverse opinions. Thus, social media opinion formers can use algorithmic amplification to spread dark ideas, whereas filter bubbles and echo chambers can foster engagement and belief in both such of forms of idea by repeatedly exposing users to similar content (Commission into Countering Online Conspiracies in Schools, 2025; D'Ancona, 2017; Guess *et al.*, 2018; Vosoughi *et al.*, 2018); with a further catalyst being the diffusion of misinformation increasing delivered through state sponsored AI and even AI avatars (Milmo and Hawkins, 2024; Robins-Early, 2024). Yet, dark ideas are not the sole preserve of Web 2.0, with mainstream media providers, such as *Netflix*, also promoting type one dark idea (see the alternative histories posited by pseudoarchaeologist, Graham Hancock, in his Netflix series *Ancient Apocalypse)*. Dark ideas of all types thus highlight the importance of individuals being able to critically engage with the ideas they encounter; whether this is through social media, mainstream media or other channels such as social networks. This criticality should also be discursive, involving respectful and reflective discussion in which citizens feel confident in challenging themselves as well as others who cleave to such ideas (Baer, 2020).

Theoretical frame

It is clear, therefore, that although engaging with ideas can, in theory, lead to citizens becoming better informed, better able to engage in effective decision-making and better able to understand the world around them, these benefits do not reach everybody and potentially, are less likely to reach communities that could benefit most from ideas-engagement. Likewise, in the ideas eco-system more generally, the failure of citizens being able to act as critical consumers of ideas can lead to "dark" ideas winning through, resulting in less optimal outcomes for both citizens and nations. In response to this situation, we have previously promoted the need for a theoretical frame which can be used to account for the presence, or not, of ideas-engagement in individuals and communities, as well as explain why individuals and communities may cleave to erroneous ideas (Brown and Luzmore, 2024). Our framework

thus has the purpose of explaining what impacts on whether individuals see value in engaging with ideas and whether their subsequent engagement with ideas is effective: in other words, its aim is to provide an overarching explanation for the effective engagement by individuals with ideas. To meet this aim, the framework explains ideas-engagement by recourse to three factors: individuals' levels of education and the extent to which the education people receive enables them engage with ideas critically; the characteristics of individuals' social networks, in terms of how these impact on access to ideas and the nature of ideas engagement; and whether individuals possess a prospective mindset, which can foster value in ideas engagement (as well as a commitment to the behaviours concomitant with ideas that have optimal and wide reaching outcomes). Further detail on each factor is detailed below (and we also refer you Brown and Luzmore, 2024, which describes the theoretical frame in full).

Level of education

Previous analyses (Brown *et al.*, 2022a, 2022b, 2022c) have shown that level of education is positively related to the value individuals ascribe to engaging with ideas. Furthermore, level of education also positively influences one's ability to engage with ideas critically (Brown and Luzmore, 2021). This is because one's education level represents an indication of our general level of knowledge, gleaned from compulsory education, as well as the domain specific knowledge that an effective higher education provides. Both general and domain specific knowledge furnish individuals with the material to enact critical thinking. In other words, individuals can more readily engage with new ideas critically, when they already have a handle on the general knowledge-related context and concepts underpinning those ideas. For instance, understanding why scientific method proves the Earth to be spherical in shape, provides the general background required to critically engage with those who promote flat-earth theory. Likewise, it is easier to engage in an accurate but "fast and frugal" diagnosis of an issue when one has strong domain specific knowledge (Couchman *et al.*, 2016). Yet, as well as providing the raw material upon which to base critical thinking, experiencing higher levels of education substantially improve one's disposition towards and the ability to engage in critical thinking (Huber and Kuncel, 2016). Here, we define critical thinking as a type of "epistemic cognition", where dispositions, beliefs and skills are combined to drive individuals to determine not only "what" is known but "why" and "how" it is known (Brown and Luzmore, 2021; Cramer *et al.*, 2023; Greene and Yu, 2016).

Social networks

Social networks (whether face to face or mediated via social media) represent collections of people who share specific connections or patterns of ties (Christakis and Fowler, 2010). Because they connect individuals to one another, social networks represent a means by through which resources, such as various forms of social and economic capital (e.g. money, time, knowledge, trust, friendship, inspiration and social norms, Brown, 2021), can flow, including, of course, the resource of ideas. What influences the resources available to an individual via their social networks, as well as their ability to access this resource, includes:

- the *size* of a given network, which is represented by the number of people individuals are connected to. In particular, a larger network, especially if it contains a diverse range of people, is more likely to provide access to a greater range of potentially useful ideas than a small network (Christakis and Fowler, 2010; Neal, 2013). Smaller networks (or their total absence) conversely lead to individuals being more prone to believing in dark ideas, such as conspiracy theories (Bierwiaczonek *et al.*, 2024);

- *centrality* – the number of people within a social network with whom respondents directly and frequently engage in ideas-related discussion – positively influencing one's ability to access resource (Christakis and Fowler, 2010; Jackson, 2019);
- network *density*, i.e. the extent to which social networks are structurally defined by high levels of familiarity, community and trust, which can serve to limit the inflow of novel ideas into the network (Neal, 2013); and
- the presence of *weak or strong network ties*, i.e. the openness of respondents to engaging with individuals who can provide opportunities to receive new ideas, perspectives or offer challenge to existing beliefs (Christakis and Fowler, 2010; Erisen and Erisen, 2012; Putnam, 2000; Schelling, 1971).

Prospection

Rulers from Mesopotamia to Manhattan have long sought knowledge of the future to obtain strategic advantage (Rees, 2021). If they had clues about what might come to pass, then they could act accordingly to realise that future or prevent it from happening. Prospection, on the other hand, involves individuals taking charge of their future by setting goals and attempting to actualise them. To that end, notions of pragmatic prospection involve individuals considering future choices and the actions that can be made in pursuit of pragmatic (i.e. outcome-focused) concerns (Baumeister and Lim, 2023). In other words: "pragmatic prospection [involves] thinking about the future in ways that will assist the process of producing desired future outcomes and avoiding undesired ones" (Baumeister *et al.*, 2016, p. 4). Prospection can be stimulated to help people make better future-focused decisions (Pataranutaporn *et al.*, 2024). For instance, a recent study (undertaken by Brown and Groß Ophoff, 2022), which used a four-week long experimental approach (involving a sample of 515 UK adults, of which 246 of whom received a twice-weekly intervention to stimulate prospective thinking) revealed that promoting prospection can lead to a statistically significant uplift in respondents ascribing importance to staying up to date with new ideas. Thus, individuals who consider future goals appear more likely to realise that plans for achieving these goals will require a sound basis if they are to succeed (i.e. such plans need to be informed by positive ideas) (Oettingen and Reininger, 2016).

Purpose of this paper

A depiction of our theoretical frame is provided out in Figure 1 below (with dotted lines representing potential but as yet un-hypothesised linkages between the variables comprising our theoretical frame). In relation to this framework, the purpose of this paper is to report on:

- our approach to developing, piloting and running a survey to operationalise this framework; and
- initial descriptive analysis to explore the presence of absence of our posited key ideas-related factors our across seven European countries.

Specifically, we examine the extent to which these countries value and successfully engage with ideas and an exploration of each county's education, prospection and social network profiles. Both survey development and initial descriptive work thus paves the way for future more advanced analysis, for instance, via the use of approaches such as structural equation modelling to establish whether the framework devised can indeed provide explanatory power to support key steps to usher in an ideas-informed society. For instance, whether it can address:

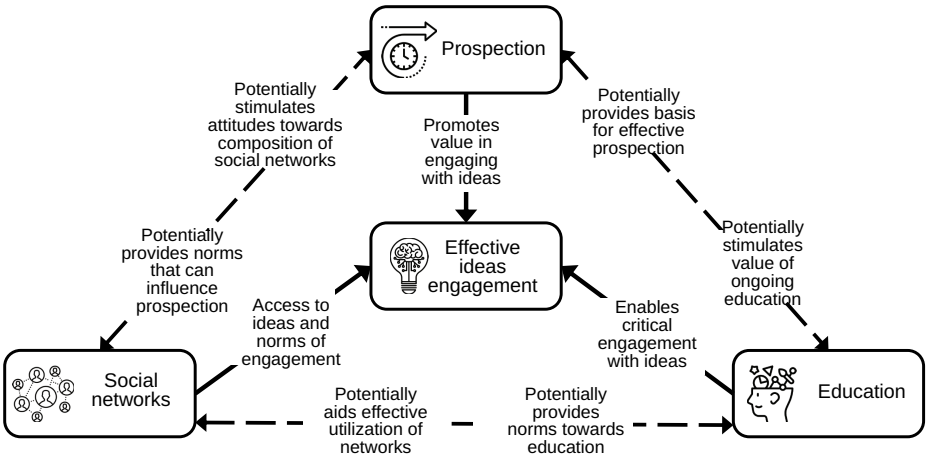

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Figure 1. Theoretical frame for ideas-engagement

- exploratory studies seeking to understand why ideas-engagement is or is not present in specific situations;
- interventions and programmes hoping to facilitate ideas-engagement/the actualisation of ideas-informed societies; as well as
- approaches designed to repel the incursion of dark ideas into ideas eco-systems.

Empirically testing our framework

To empirically test our theoretical model, we first operationalised it by developing the Ideas, Networks, Prospection and Education Survey (INPES), with survey items constructed for each of the variables corresponding to the four components of ideas-engagement, education, social networks and prospection, as well as pertinent demographic variables (age, gender, household income, ethnic origin, region and occupation) (Kline, 2011). The wider research team for this work (comprising the authors of this paper and those who worked on the other related projects we have undertaken in this area) engaged in detailed discussion to deconstruct the theoretical framework developed by Brown and Luzmore (2024) into the variables which comprise it. The overall result was 15 key constructs: five associated with ideas-engagement, two education variables, seven network variables and one variable associated with prospection. A particularly noteworthy change from previously analyses (Brown *et al.*, 2022a) is that, unlike with our original survey of England, INPES uses a number of measures to explore ideas-engagement (IE1-5). Firstly, we have differentiated between the types of ideas individuals may see value in engaging with (IE1 and IE2): splitting out activities that might be considered "ideas-engagement for the sake of it" (IE1) from an engagement with those ideas that might have a more immediate impact on one's day to quality of life ("instrumental" ideas engagement: IE2). This was intended to differentiate between two very different needs or reasons people have for engaging with ideas and to see whether either need corresponded more fully to aspects of prospection, education or social

networks. Secondly, we measured the means by which and the frequency with which people seek out ideas (IE3) as well as the reasons why they do so (IE4). We also introduced an element of calibration: here we ask the extent to which respondents consider trueful, statements which are either factual, based on conspiracy theory and/or are false but populist in nature (IE5). For instance, by asking respondents the extent to which they consider to be true statements like "there is evidence to suggest the Earth is actually flat, rather than round" (factually untrue). This calibration question was intended to help us understand the extent to which respondents are engaging in positive ideas vs dark ideas and the extent to which being ideas-engaged also means refuting dark ideas or whether respondents could be both ideas engaged and simultaneously cleave to dark ideas. The full list of our variables along with a description for each can be found in Table 1. Finalised survey items and response options for the 15 variables can be found in Table A1 (Appendix). As can be seen, these scale items represent a mixture of Likert, multiple-option, ranking and free text responses.

In developing INPES, we first sought to identify whether any survey items and scales for each of our variables had been previously developed and tested and where relevant, to incorporate these. For example, we adopted survey items designed to measure prospection previously developed by Ruscio *et al.* (2023). Table A1 (Appendix) identifies for each variable whether existing items have been used or if survey items are newly developed. Once an initial draft of our survey had been developed, following best practice (in particular, drawing on Boynton and Greenhalgh, 2004), two experts in the field assessed the questionnaire for both face and content validity. We also tested INPES with two lay people to detect potential misinterpretations and flaws relating to survey text and content. Finally, a pilot of 100 responses was undertaken in each of the seven countries, enabling us to sense check responses and the interpretation of questions by respondents.

Approach

To collect the data for our study, we repeated the approach previously used by Brown *et al.* (2022a) for exploring ideas-engagement in England. Specifically, using a panel provider to collecting survey data from nationally representative samples: this time, of 1,000 citizens from seven European countries. Given their bespoke panel provision operations in countries across Europe, we used market research polling firm Bilendi as our sample provider. Bilendi recruits members to its panel using multiple online sources including the following:

- search engine optimisation approaches to attract "walk in" traffic;
- pay-per-click link throughs;
- online display advertising;
- direct emails;
- social media advertising;
- social influencers; and
- brand loyalty partnerships.

To receive surveys, Bilendi members create an account and in doing so provide a full range of socio-demographic information to ensure surveys are targeted appropriately. Panel members can be contacted up to three times a day, and as a reward for survey completion, members receive "points"; with these points subsequently exchangeable for products. It is up to panel members as to whether they complete a survey or not; should a panel member decide not to take part, an equivalent replacement is contacted instead.

Table 1. Variables corresponding to the theoretical framework for ideas-engagement

Aspect of framework	Label	Variables	Description
Ideas engagement	IE1	Value of ideas-engagement (keeping well-informed)	The value respondents place on keeping themselves well-informed. For example, by finding out more about different ideas or perspectives; learning more about scientific discoveries and new technology; and/or discovering more about different aspects of history and culture (including arts, literature, etc.)
Ideas engagement	IE2	Value of ideas-engagement (staying up-to-date with current affairs)	The value respondents place on staying up to date with current affairs. For example, by staying abreast of political and economic events; keeping up to date with sport; engaging with health-related developments; finding out more about new products, services or forms of media/social media; and/or maintaining an overview of the news generally
Ideas engagement	IE3	Seeking out ideas	The frequency with which respondents seek out ideas (e.g. via accessing media or other content, or by engaging in activities such as attending lectures or museum exhibitions)
Ideas engagement	IE4	Reasons for how ideas are sought out	Why respondents choose to access ideas via identified content/media/channels, or to engage in certain activities (such as attending lectures or museum exhibitions)
Ideas engagement	IE5	Able to identify positive and dark ideas effectively	The extent to which respondents consider to be true statements which are factual, based on conspiracy theory and/or are populist in nature
Education	ED1	Level of education	Respondents' highest level of qualification
Education	ED2	Ability to think critically	Whether respondents are able to engage critically with the ideas they encounter
Networks	NW1	Network size	The size of respondents' social network: represented by the number of people they are connected to
Networks	NW2	Ideas network centrality (keeping well-informed): how many people respondents discuss ideas with	The number of people within a social network with whom respondents directly engage in ideas-related discussion (specifically, discussion relating to respondents keeping themselves well-informed)
Networks	NW3	Ideas network tie strength (keeping well-informed): how often respondents discuss ideas with social connections	The frequency with which respondents directly engage in ideas-related discussion with social connections (specifically discussion relating to respondents keeping themselves well-informed)
Networks	NW4	Ideas network centrality (staying up-to-date with current affairs): how many people respondents discuss ideas with	The number of people within a social network with whom respondents directly engage in ideas-related discussion (specifically discussion relating to respondents staying up-to-date with current affairs)
Networks	NW5	Ideas network tie strength (staying up-to-date with current affairs): how often respondents discuss ideas with social connections	The frequency with which respondents directly engage in ideas-related discussion with social connections (specifically discussion relating to respondents staying up-to-date with current affairs)
Networks	NW6	Ideas network openness (weak or strong)	The openness of respondents to engaging with individuals who can provide opportunities to receive new ideas, perspectives or offer challenge to existing beliefs
Networks	NW7	Network density	Whether respondents' social network is defined by high levels of familiarity, community and trust which can limit the inflow of new ideas into the network

Source(s): Table created by authors

Given our previous use of England, and the acknowledgement that the thinking behind our framework is potentially biased towards being England-centric, we wanted to identify comparator countries potentially offering very different perspectives to those of England (representing a "stress test" of our framework). To select these comparator counties, we used a number of approaches. To begin with, we examined findings from the Minkov–Hofstede model of culture (Minkov and Kaasa, 2022). Based on previous work by Hofstede (1980, 2001), the Minkov–Hofstede model of culture identifies two cultural elements that can be observed in every country (of the 102 they have surveyed) as well as account for the differential behaviours exhibited by countries. These elements are *individuality (vs collectivism)* and *long-term (vs short-term) orientation* with these cultural elements regarded as significant predictors of key national indicators, such as educational achievement, political and economic freedom, gender equality, digital adoption and innovation (even after controlling for national wealth and other cultural dimensions). For instance, societies with high levels of individuality allow for individuals freedoms and the protection of rights, autonomous thinking and the challenging of conventional ideas. Collectivist societies, meanwhile, frown upon deviation from norms and impose strict rules of behaviour; likewise innovative thought, which is perceived as that which is "outside of the box" of tradition is impeded. Furthermore, in societies with high levels of individuality in-groups are weakly defined, whereas collective societies promote tight networks. Societies with more long-term orientation, meanwhile, advocate the delay of gratification, desire suppression and self-sufficiency, whereas those with a shorter term orientation advocate more immediate generosity and sharing over saving.

Given the theoretical frame being tested, one can easily and intuitively identify how individuality (vs collectivism) and long-term (vs short-term) orientation might impact on whether individuals have diffuse or more dense social and idea-access networks, the type of education citizens might receive (as well as which citizens can receive it and the level of education individuals might feasibly reach), whether individuals are likely to have a prospective mindset, as well – of course – as impacting on whether ideas-engagement is valued by citizens in the first place. Given:

- their differences in individuality (vs collectivism) and long-term (vs short-term) orientation compared to both England (as well as each other); and
- the availability of countries from which we could readily obtain a sample (given our use of Bilendi and the budget available to us), we identified six additional countries as suitable comparators for which to test the parameters of our framework.

These were Finland, Italy, The Netherlands, Spain, Sweden and Switzerland. The scores for individuality (vs collectivism) and long-term (vs short-term) orientation for each are presented in Table 2, alongside that of England (based on Minkov and Kaasa's 2022 analysis of 102 countries where the index mean for each variable is zero). Given the divergences in scores presented by this basket of comparators, we argue that these provide a good first test of the potential for key relationships within our model to break down.

Our original survey was translated by professional translators working at Bilendi into Dutch Finnish, Italian, Spanish, Swedish and, for our Swiss sample, German and French (with additional translators assessing for accuracy and meaning of the text). Further changes were made in relation to demographic questions, such as income (where income bands and unit of currency were modified for each country), as well as for geographic region and level of education (again, with changes reflecting country context). Following an initial pilot of the questionnaire with 100 participants from each country, so as to enable the research team to assess whether survey questions were being interpreted correctly, Bilendi subsequently distributed our survey to nationally representative samples of 1,000 citizens (aged 18+) from

Table 2. Position of our sample countries based on the Minkov–Hofstede model of culture

Country	Score for individuality vs collectivism	Score for long term vs short-term
England (UK)	93	56
Finland	88	71
Italy	5	−36
The Netherlands	182	87
Spain	58	2
Sweden	133	21
Switzerland	105	−21

Source(s): Table created by authors

across each of England, Finland, Italy, The Netherlands, Spain, Sweden and Switzerland: with sampling based on age, gender, socio-economic group and geographic region. Surveys were administered in July 2024. Final survey data was representative within a maximum 5% ± variation) for each country and the data provided by Bilendi was weighted to account for any variation that might occur based on age, gender, socio-economic group and geographic region.

Ethics

Ethical approval for this project and the survey questionnaire used was given by the Southampton University Faculty for Social Sciences' ethics committee (approval number ERGO II 93510). Furthermore, Bilendi holds the ISO standard 20252:2019 certification (the international standard for conducting market, opinion and social research). All research was undertaken with the full consent of participants, via a process of double opt-in panel registration.

Analysis

For this paper, data was analysed by presenting categorial data as frequencies and percentages, whereas multiple-item constructs were subjected to principal-factor analysis for dimensionality reduction. This consolidated variables into weighted composite factors, which were then reined into significant factors, facilitating simpler interpretation of complex constructs within the data set. Table 3 outlines the approach to data analysis for each survey item included. This was to enable initial exploratory analysis to be conducted (due to the large quantity of data to be analysed a subsequent paper which involves the development of a structural equation model is also currently in press). Details of survey items are available in Table A1 (Appendix).

Results

The results of our exploratory analysis are set out below according to four themes:

(1) education foundation and critical thinking;

(2) networks and information flow;

(3) ideas engagement and evaluation; and

(4) prospection patterns.

Education foundation and critical thinking

Educational achievement across the seven European nations (survey item "What is your highest level of qualification?") reflects variation in how different societies approach

Table 3. Data analysis for survey items

Table	Measure (Table 1)	How this was calculated
IV	Education ED1 Education level	Frequency and percentage presented for each category
IV	Education ED2 Ability to think critically	Factor analysis was conducted on 12 items, with each item weighted and consolidated into a single representative factor based on the criterion of eigenvalues greater than 1. Country-level averages were then calculated for this factor, with minimum and maximum values presented for reference
V	Networks NW1 Network size	Factor analysis was conducted on nine items, with each item weighted and consolidated into a single representative factor based on the criterion of eigenvalues greater than 1. Country-level averages were then calculated for this factor, with minimum and maximum values presented for reference
V	Networks NW2 – 5 Ideas network centrality and tie strength	For each question: factor analysis was conducted on 12 items, with each item based on the criterion of eigenvalues greater than 1. Country weighted and consolidated into a single representative factor -level averages were then calculated for this factor, with minimum and maximum values presented for reference
VI	Networks NW6 Ideas network openness	Percentages presented for each category and ordered by most chosen to least
V	Networks NW7 Network density	Factor analysis was conducted on 10 items, with each item weighted and consolidated into two representative factors based on the criterion of eigenvalues greater than 1. Country-level averages were then calculated for these factors, with minimum and maximum values presented for reference. Representative factors werenetwork homophily, where close friends shared the same political views and wider beliefs, hobbies and know one another and social capital, the extent to which close friends belonged to the same clubs and communities as them
VII	Ideas Engagement IE1 and IE2 Values ideas engagement	Scores assigned from 0 to 4 on a five-point scale. Averages generated. Range included
VII	Ideas Engagement IE3 Seeking out ideas	Factor analysis was conducted on 14 items, with each item weighted and consolidated into three representative factors based on the criterion of eigenvalues greater than 1. Country-level averages were then calculated for these factors, with minimum and maximum values presented for reference. Representative factors were active in-person engagement with ideas; digital exploration of ideas and traditional consumption of ideas
VIII	Ideas Engagement IE4 Reasons for how ideas are sought out	Percentages presented for each category and ordered by most chosen to least
VII	Ideas Engagement IE5 Able to identify positive and dark ideas effectively	Score given to each correct answer, these were converted to an overall average, an average for those relating to dark ideas, and an average relating to positive ideas
IX	Prospection PR1 Whether respondents possess a prospective mindset	Calculations based on Ruscio *et al.* (2023). Averages from a five-point scale were taken for different categories with this being combined to a single average

Source(s): Table created by authors

Table 4. Education

	Overall average (n = 7,071)		England (n = 1,015)		Finland (n = 1,013)		Italy (n = 1,004)		Spain (n = 1,004)		Sweden (n = 1,019)		Switzerland (n = 1,003)		The Netherlands (n = 1,013)	
Education level	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
ED1																
No qualifications	57	0.81	21	2.07	7	0.69	1	0.1	0	0	21	2.06	7	0.7	0	0
School level (age 16)	604	8.54	174	17.14	86	8.49	87	8.67	76	7.57	136	13.35	37	3.69	8	0.79
College level	2047	28.95	227	22.36	446	44.03	511	50.9	318	31.67	289	13.35	69	6.88	187	18.46
Apprenticeship	955	13.51	63	6.21	30	2.96	10	1	37	3.69	39	3.83	389	38.78	387	38.2
Undergraduate	1,503	21.26	293	28.87	131	12.93	117	11.65	311	30.98	239	23.45	133	13.26	279	27.54
Postgraduate	1,693	23.94	218	21.48	236	23.3	271	26.99	228	22.71	257	25.22	335	33.4	148	14.61
Other	212	3	19	1.87	77	0.99	7	1.49	34	3.39	38	3.73	33	3.29	4	0.39
ED2																
Ability to think critically	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Range overall 1.4–7	5.31	0.69	5.41	0.68	5.38	0.64	5.39	0.65	5.37	0.73	5.19	0.71	5.29	0.67	5.17	0.67

Source(s): Table created by authors

learning and skills development and is set out in Table 4. For example, education in Italy is heavily weighted towards traditional academic pathways, with half of all respondents (50.9%) achieving college level education and over a quarter (26.99%) holding postgraduate qualifications, whereas apprenticeships account for just 1% of educational attainment. This academic focused approach contrasts sharply with more balanced systems, where vocational training plays a central role. For instance, Switzerland and The Netherlands, where rates of apprenticeship sit at approximately 38%. England presents another distinct model with the most evenly distributed patterns from school level to postgraduate degrees. However, despite the marked differences in educational systems, there is only modest variation in critical thinking, with country scores spanning between 5.17 and 5.41 (within a possible range of a minimum score of 1.4 to a maximum score of 7): a consistent standard deviation (which ranged from 0.64 to 0.73) suggesting similar within-country variation in how people assess their critical thinking capabilities. This indicates that the seven education systems we examined – which on average result in some 90% of the population becoming educated to beyond school level – all appear to effectively enable most student types to develop critical thinking skills (or at least believe that they can engage in this way), and potentially act as a strong basis for such skills to be continually honed over time.

Networks and information flow

The way social networks function across our seven countries sample reveals different ways in which societies structure and use their social connections with results set out in Table 5 and 6. A potential North–South divide emerges in regards to network size, with Italian and Spanish respondents reporting much larger social circles (an average of 61.33 and 51.92 social connections, respectively) compared to their Northern European counterparts. However, these averages mask the considerable individual variation noted across all countries, reflecting that in all societies some individuals cultivate small social circles and others expansive ones.

The way in which different populations engage with ideas through their networks reveals different behaviours. Spain, for instance, shows the highest frequency of both staying informed (2.76) and discussing current affairs (2.62), suggesting their social structures and potentially larger networks might be conducive to facilitate idea exchange. This contrasts with England where, despite high educational criticality scores and moderate network sizes, we see lower frequencies of network-based discussions. The range of answers suggests significant variation in how actively people engage with their networks for information exchange, with the consistent standard deviations across measures suggesting similar levels of individual variation across all countries.

How people choose and interact with their network demonstrates both cultural similarities and differences. In considering survey question NW6 (“The openness of respondents to engaging with individuals who can provide opportunities to receive new ideas, perspectives or offer challenge to existing beliefs” – with respondents asked to select up to three characteristics that influence whether they engage in ideas-exchanges with network connections), it is clear that the interpersonal aspect of idea exchange is particularly important. For instance, our data indicates that “ease of communication” emerges as the primary factor for individuals to engage with network connections across most countries, though its importance varies significantly. Finland and The Netherlands both rate this characteristic highly (78.4%), whereas Italy indicates a lower preference (55.8%). However, when taken alongside the relatively high ranking of respondents engaging with network connections about current affairs, ideas or new perspectives because they are “comfortable expressing views to them”, this indicates that people’s openness to new ideas might be

Table 5. Networks

NW1 Network size		Overall average (n = 7,071) Mean	SD	England (n = 1,015) Mean	SD	Finland (n = 1,013) Mean	SD	Italy (n = 1,004) Mean	SD	Spain (n = 1,004) Mean	SD	Sweden (n = 1,019) Mean	SD	Switzerland (n = 1,003) Mean	SD	The Netherlands (n = 1,013) Mean	SD
Range overall 0–456		40.35	66.68	32.34	60.41	31.63	57.09	61.33	84.21	51.92	80.43	33.09	54.40	30.45	57.53	41.93	59.89
NW2 – 4 Ideas Network centrality	Range overall	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Keeping well informed: how many people	0–6.85	2.20	1.23	1.98	1.23	2.22	1.25	2.27	1.27	2.43	1.23	2.12	1.25	2.39	1.20	2.00	1.07
Keeping well informed: how often	0–6.71	2.47	1.21	2.27	1.25	2.41	1.16	2.69	1.26	2.76	1.27	2.36	1.20	2.52	1.12	2.26	1.08
Current affairs: how many people	0–6.68	2.07	1.19	1.87	1.20	2.07	1.17	2.20	1.24	2.30	1.25	1.98	1.18	2.18	1.13	1.91	1.08
Current affairs: how often	0–6.69	2.36	1.22	2.18	1.29	2.35	1.14	2.56	1.26	2.62	1.28	2.25	1.23	2.39	1.12	2.17	1.11
NW7 Network density	Range overall	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Network homophily	0–8.2	5.06	1.20	4.92	1.26	4.97	1.14	5.13	1.05	5.08	1.17	5.00	1.25	5.12	1.21	5.23	1.29
Network social capital	−0.06–7.2	2.71	1.46	2.48	1.50	2.70	1.34	2.78	1.49	2.76	1.45	2.80	1.49	2.77	1.51	2.65	1.44

Source(s): Table created by authors

Table 6. Ideas network openness

Overall average (n = 7,071)	England (n = 1,015)	Finland (n = 1,013)	Italy (n = 1,004)	Spain (n = 1,004)	Sweden (n = 1,019)	Switzerland (n = 1,003)	The Netherlands (n = 1,013)
I find them easy to talk to (63.7)	I find them easy to talk to (59.2)	I find them easy to talk to (78.4)	I find them easy to talk to (55.8)	I find them easy to talk to (63.8)	I find them easy to talk to (59.7)	I find their points of view interesting or enlightening (59.1)	I find them easy to talk to (78.4)
I am comfortable expressing views to them (50.7)	I am comfortable expressing views to them (53.1)	I am comfortable expressing views to them (59)	We have similar views, outlooks or beliefs (53.8)	I find their points of view interesting or enlightening (50)	I find their points of view interesting or enlightening (54.3)	I find them easy to talk to (57.8)	I am comfortable expressing views to them (52.1)
I find their points of view interesting or enlightening (47.8)	We have similar views, outlooks or beliefs (48.7)	We have similar views, outlooks or beliefs (55.2)	I am comfortable expressing views to them (51.5)	I am comfortable expressing views to them (48.5)	I am comfortable expressing views to them (50)	We have similar views, outlooks or beliefs (52.3)	I find their points of view interesting or enlightening (49.9)
We have similar views, outlooks or beliefs (46.5)	I find their points of view interesting or enlightening (45.5)	I find their points of view interesting or enlightening (38.2)	I find their points of view interesting or enlightening(37.8)	We have similar views, outlooks or beliefs (39.3)	I consider them knowledgeable (35.2)	I am comfortable expressing views to them (40.4)	We have similar views, outlooks or beliefs (42)
I consider them knowledgeable (28.3)	I consider them knowledgeable (34.1)	They positively challenge my existing views, outlooks or beliefs (27.6)	They positively challenge my existing views, outlooks or beliefs (32.5)	I consider them knowledgeable (37.8)	We have similar views, outlooks or beliefs (34.3)	I consider them knowledgeable (30.3)	They positively challenge my existing views, outlooks or beliefs(23.1)
They positively challenge my existing views, outlooks or beliefs (24.5)	They positively challenge my existing views, outlooks or beliefs (19.6)	I consider them knowledgeable (17.2)	I consider them knowledgeable (30.1)	They positively challenge my existing views, outlooks or beliefs (22.9)	They positively challenge my existing views, outlooks or beliefs (25.7)	They positively challenge my existing views, outlooks or beliefs (20.1)	Other people think they are worth listening to (15.2)
Other people think they are worth listening to (14.4)	Other people think they are worth listening to (15.3)	I find their perspective reassuring (10.5)	Other people think they are worth listening to (16.6)	Other people think they are worth listening to (16.9)	Other people think they are worth listening to (15.8)	Other people think they are worth listening to (17.7)	I find their perspective reassuring (14.6)
I find their perspective reassuring (12.5)	I find their perspective reassuring (12.7)	Other people think they are worth listening to (3.4)	I find their perspective reassuring (12.5)	I find their perspective reassuring (14.2)	I find their perspective reassuring (11.6)	I find their perspective reassuring (11.2)	I consider them knowledgeable (13.5)
Other (0.7)	Other (0.6)	Other (1.1)	Other (0.4)	Other (0.4)	Other (0.5)	Other (0.8)	Other (0.8)

Source(s): Table created by authors

significantly influenced by relational aspects of idea sharing with regards to the specific content under consideration. How people approach intellectual challenge is also interesting. The moderate ranking of having "similar outlooks of beliefs" (46.5%) suggests overall that individuals do tend to seek network ties where there is some common ground. Similarly, that respondents value others "interesting" views (47.8% overall) over those who "challenge my existing views" (24.5% overall) suggests that people are more open to new ideas when they are presented as an interesting alternative rather than a direct challenge to existing beliefs. Trust and expertise however play varying roles – for example, England places a much higher value on expertise (34.1%) in comparison to Finland (17.2%) or The Netherlands (13.5%): suggesting that expertise alone may not be sufficient for idea exchange. Instead, it is how an idea is communicated that is important. The consistent low ranking of "other people think their worth listening to" (14.4% overall) further suggests that social validation is less important that interpersonal dynamics.

The network density measurements we used also reveal two crucial aspects of connection: homophily (the tendency to associate with others similar to oneself) and social capital (the social connecting power of clubs, groups and affiliations). In terms of homophily (which represents situations in which close friends share the same political views and wider beliefs, hobbies, as well as know one another), The Netherlands presents the highest score (5.23: situated within a range of 0–8.2), whereas England the lowest (4.92). This suggests that Dutch networks, while not necessarily the largest, tend to be more homogenous in terms of shared characteristics as well as more densely interconnected. Social capital scores – which correspond to whether respondents' network ties belong to the same clubs, groups, communities or share religious affiliations (with a range of 0.06–7.2) are broadly consistent across the nations – with only England showing a notable lower score (2.48). This consistency suggests that despite the varying network sizes and homophily levels, the importance of social capital, as a form of social bonding force (Putnam, 2000), maintains a similar strength of network "attraction" across these countries.

Ideas engagement and evaluation

Although all nations appear to value staying well informed (see Table 7), Italy and Spain (in relation to a range of 0–4) demonstrate a higher level of commitment (3.47 and 3.48, respectively) contrasting with countries like Sweden and The Netherlands (3.06 and 3.01). A similar pattern emerges for staying up to date with current affairs with Italy (3.43) and Spain (3.39) again presenting higher scores. The consistency between these two measures within countries suggesting that populations which value staying informed generally, also value keeping up with current affairs. This indicates that these characteristics may be linked rather than separate behaviours. The data also revealed three distinct channels through which people engage with ideas with different patterns emerging. The first is the *digital exploration of ideas* (i.e. where respondents access ideas via social media, Web searching, the use of GenAI, etc.). Here, Spain (5.68) and Italy's (5.59) high levels of digital engagement contrasted with England's much lower score (4.61); though there is considerable individual variation within each country. Second is *traditional consumption of ideas* (e.g. where respondents are more like to "Watch or listen to news programmes or channels" or "Watch or listen to current affairs programmes"), which largely mirrors digital engagement: with England, despite its strong educational outcomes, showing lower engagement again (4.66). The lowest overall scores across all countries were for *active in-person engagement* (respondents who "Attend public lectures or talks", "Take courses (e.g., history of art, film, etc.)" or partake in "activities, such as going to an exhibition at a gallery, museum or science park; or visiting a place of interest, a cultural site or similar"). Here, however, Italy and Spain

Table 7. Ideas engagement

		Overall average (n = 7,071)		England (n = 1,015)		Finland (n = 1,013)		Italy (n = 1,004)		Spain (n = 1,004)		Sweden (n = 1,019)		Switzerland (n = 1,003)		The Netherlands (n = 1,013)	
IE1 and IE2 Value of ideas engagement	Range overall	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Keeping well informed	0–4	3.22	0.77	3.22	0.80	3.07	0.82	3.47	0.65	3.48	0.60	3.06	0.83	3.23	0.73	3.01	0.80
Stay up to date with current affairs	0–4	3.22	0.79	3.16	0.85	3.15	0.81	3.43	0.66	3.39	0.64	3.09	0.86	3.19	0.81	3.09	0.80
IE3 Seeking out ideas	Range overall	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Active in person engagement with ideas	−0.28–7.53	2.05	1.36	1.79	1.46	1.91	1.20	2.23	1.47	2.37	1.33	2.01	1.34	2.19	1.33	1.85	1.29
Digital exploration of ideas	0–8.62	5.12	1.54	4.61	1.72	5.12	1.46	5.59	1.43	5.68	1.39	4.96	1.54	4.97	1.50	4.93	1.46
Traditional consumption of ideas	−0.18–7.57	5.29	1.52	4.66	1.66	5.24	1.62	5.59	1.29	5.61	1.33	5.25	1.55	5.39	1.44	5.29	1.50
IE4 Able to identify positive and dark ideas effectively		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Overall	Max score 12	10.42	1.62	10.55	1.59	10.58	1.55	10.31	1.65	10.26	1.66	10.65	1.50	10.20	1.70	10.35	1.67
Dark ideas	Max score 6	5.04	1.21	5.09	1.24	5.14	1.10	4.95	1.34	5.00	1.28	5.21	1.08	4.87	1.23	5.04	1.17
Dark ideas	Max score 6	5.37	0.89	5.46	0.83	5.44	0.89	5.37	0.84	5.26	0.92	5.44	0.85	5.34	0.93	5.31	0.95

Source(s): Table created by authors

maintain their leading positions (2.23 and 2.37 respectively, but with a range of possible scores of −0.28 to 7.53).

Asking respondents to select the three characteristics that most influence which channels they use to both stay up to date with current affairs and keep themselves well informed, added another dimension to the picture (Table 8). Although we see interest in subject matter as the primary driver (58.14% overall), there is substantial variation in how much entertainment value matters: with The Netherlands placing a much higher value (51.15%) compared with Italy (34.06%) or Switzerland (27.22%). This suggests different cultural approaches exist with regards to learning and information consumption. Cost also varies as a factor in why people seek out ideas with England (32.81%) and Finland (32.08%) placing "They are free/inexpensive to access" relatively highly in comparison to The Netherlands (17.47%), Italy (19.22%) or Sweden (19.53%).

We calibrated these measures by testing respondents' ability to distinguish between true and false ideas (Table 7). Overall, Sweden lead (10.65 / 12) with a particular strength in identifying dark ideas (5.21 / 6). The data suggested that high engagement rates with ideas does not necessarily translate into better idea evaluation capabilities as the countries with the highest engagement levels (Spain and Italy) showed lower calibration scores, whereas those with more moderate engagement (Sweden and Finland) demonstrated higher ability to evaluate ideas effectively. This may indicate that quantity of engagement is less important than quality when developing skills in effectively evaluating of ideas.

Prospection patterns

Although all seven countries demonstrate generally positive prospection capabilities (with England and Spain emerging at the top), there are clear differences in how these manifest across the different aspects of future-orientated thinking (Table 9). For instance, the aspect of prospection known as "Making a plan" relates to the following survey items (Ruscio *et al.*, 2023):

- I consider alternative paths toward a goal and choose the best one.
- I make plans that specify different courses of action depending on how things progress.
- When making a plan, I build in extra time for unanticipated problems or delays.
- I consider obstacles I might encounter on the way to my goal and plan how I will deal with them.
- I make a back up plan in case my original plan fails.

This tends to be the strongest aspect of prospection, with most countries exhibiting high scores. For example, The Netherlands achieves 3.77 in this category (in relation to a range of 0–5) despite lower score in other areas. This suggests that the practical aspect of planning might be more universally developed than other aspects. Data also suggests that "Flexible execution" shows the greatest variation between nations. Ruscio *et al.* (2023)'s approach to measuring prospective traits suggests "flexible execution" can be identified when respondents provide negative scores in relation to the following survey items:

- I get stuck when I encounter unexpected delays or difficulties on the way to a goal.
- I am unsure what to do when things do not go as planned.
- When I reach a "fork in the road" on the way to a goal, I get stuck deciding which path to choose.
- I am uneasy when circumstances require me to modify my plans.

Table 8. Reasons for connecting with sources of ideas

Overall average (n = 7,071)	England (n = 1,015)	Finland (n = 1,013)	Italy (n = 1,004)	Spain (n = 1,004)	Sweden (n = 1,019)	Switzerland (n = 1,003)	The Netherlands (n = 1,013)
They offer topics or subject areas that interest you (58.14)	They offer topics or subject areas that interest you (63.05)	They offer topics or subject areas that interest you (66.44)	They offer topics or subject areas that interest you (50.7)	They offer topics or subject areas that interest you (55.58)	They offer topics or subject areas that interest you (60.35)	They offer topics or subject areas that interest you (57.83)	They offer topics or subject areas that interest you (52.91)
They are enjoyable to use/visit (37.92)	They are enjoyable to use/visit (49.95)	They are enjoyable to use/visit (39.09)	They are enjoyable to use/visit (34.06)	You trust that they will provide you with reliable information/ knowledge (35.46)	They provide something topical, meaning you are up to date (31.8)	They provide something topical, meaning you are up to date (31.3)	They are enjoyable to use/visit (51.15)
You trust that they will provide you with reliable information/ knowledge (31.52)	You trust that they will provide you with reliable information/ knowledge (35.27)	They provide something topical, meaning you are up to date (36.72)	That I often feel inspired as a result (32.97)	They are enjoyable to use/ visit (32.17)	They are enjoyable to use/ visit (31.6)	You trust that they will provide you with reliable information/ knowledge (30.71)	You trust that they will provide you with reliable information/ knowledge (30.4)
They provide something topical, meaning you are up to date (26.63)	They are free/ inexpensive to access (32.81)	They are free/ inexpensive to access (32.08)	You trust that they will provide you with reliable information/ knowledge (31.18)	That you are presented with an expert view/ opinion on a subject (27.59)	You trust that they will provide you with reliable information/ knowledge (30.72)	They are enjoyable to use/ visit (27.22) =	That I often feel inspired as a result (29.81)
That I often feel inspired as a result (25.74)	That I often feel inspired as a result (17.93)	You trust that they will provide you with reliable information/ knowledge (26.95)	That you are presented with an expert view/opinion on a subject (25.50)	That I often feel inspired as a result (25.4)	That I often feel inspired as a result (26.1)	That I often feel inspired as a result (27.22) =	They provide something topical, meaning you are up to date (24.78)
They are free/ inexpensive to access (24.3)	That the content/ subject matter presented is easy to understand (16.55)	That I often feel inspired as a result (20.83)	An in-depth explanation of the issues is provided (24.7)	They are free/ inexpensive to access (25.2)	That you are presented with an expert view/ opinion on a subject (21.88)	They are free/ inexpensive to access (23.73)	That you are presented with an expert view/opinion on a subject (17.77)
That you are presented with an expert view/opinion on a subject (20.58)	That you are presented with an expert view/opinion on a subject (15.96)	Doing these things are part of your regular routine (16.49)	Doing these things are part of your regular routine (23.51)	They provide something topical, meaning you are up to date (24.3)	An in-depth explanation of the issues is provided (20.41)	Doing these things are part of your regular routine (23.33)	They are free/ inexpensive to access (17.47)

Source(s): Table created by authors

Table 9. Pragmatic prospection

PR1 Prospection	Range overall	Overall average (n = 7,071)		England (n = 1,015)		Finland (n = 1,013)		Italy (n = 1,004)		Spain (n = 1,004)		Sweden (n = 1,019)		Switzerland (n = 1,003)		The Netherlands (n = 1,013)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Overall	0–5	3.57	0.48	3.78	0.45	3.38	0.44	3.42	0.44	3.78	0.48	3.35	0.42	3.70	0.45	3.60	0.44
Imagining outcomes	0–5	3.56	0.57	3.66	0.53	3.48	0.61	3.66	0.58	3.67	0.48	3.42	0.69	3.56	0.52	3.46	0.51
Setting sensible goals	0–5	3.54	0.67	3.76	0.53	3.39	0.73	3.26	0.75	3.85	0.57	3.43	0.78	3.58	0.55	3.52	0.52
Making a Plan	0–5	3.67	0.59	3.86	0.49	3.45	0.59	3.62	0.58	3.83	0.55	3.32	0.65	3.83	0.51	3.77	0.51
Flexible execution	0–5	3.52	0.71	3.83	0.55	3.22	0.76	3.13	0.73	3.75	0.58	3.20	0.78	3.82	0.54	3.66	0.55

Source(s): Table created by authors

With our survey data (Table 9) showing a range of responses to these items, from Italy's low of 3.13 to England's high of 3.83. This substantial gap might indicate that the ability to adapt plans and maintain flexibility is the most challenging aspect of prospection, or perhaps one most influenced by cultural or societal factors. Sweden represents an interesting case in that it has the lowest overall average (3.35) with challenges in "flexible execution" (3.2) and "making a plan" (3.32), however, it performs relatively better in imagining outcomes (3.42) (example survey item "I consider what my future will be like once I reach my goals") and setting sensible goals (3.43), (example survey item "my goals exceed the reality of what I can do": this is negatively scored). Both suggesting the citizens in Sweden possess a stronger capacity for envisioning future possibilities rather than implementing them.

Discussion and conclusion

Our purpose with this paper was twofold. Firstly, to outline how we developed a survey instrument (INPES) to operationalise a theoretical framework for ideas engagement. As we describe above, this framework explains individuals' engagement with both positive and dark ideas by recourse to three factors:

(1) their levels of education and the extent to which the education people receive enables them engage with ideas critically;

(2) the characteristics of individuals' social networks, in terms of how these impact on access to ideas and the nature of ideas engagement; and

(3) whether individuals possess a prospective mindset, which can foster value in ideas engagement (as well as a commitment to the behaviours concomitant with ideas that have optimal and wide reaching outcomes) (Brown and Luzmore, 2024).

Nonetheless, such a framework will only offer utility when it can be used in the actual advancement of the ideas-informed society. For instance, if it can provide explanatory power for (for example) studies seeking to understand why ideas-engagement is or is not present in specific situations; or for interventions and programmes hoping to facilitate ideas-engagement/the actualisation of ideas-informed societies or seeking to repel the incursion of dark ideas into ideas eco-systems. As such, our work in developing, piloting and running a survey paves the way for future (more advanced) analysis to establish whether the theoretical framework we have operationalised does indeed successfully explain what drives ideas engagement, and whether successful ideas engagement explains whether individuals are more likely to cleave to positive or dark ideas. But likewise to provide concrete solutions for policy in practice that might emerge from more advanced analysis. Furthermore, given the data we have collected and the contrasting nature of the countries we have collected it from, we will be able to ascertain (at least for a Western European perspective) whether our theoretical framework for ideas engagement appears to have universal explanatory power. This is a significant step if we are hoping to promote ideas engagement globally.

Secondly, we have presented initial descriptive analysis to explore the presence or absence of our posited key ideas-related factors our across seven European countries. In particular, we have examined the extent to which these countries value and successfully engage with ideas and an exploration of each county's education, prospection and social network profiles. Although this analysis cannot determine relational or causal pathways between the individual components of our framework (either amongst themselves or in relation to their impact on ideas-engagement), our analysis does provide insights that will be useful as we begin to engage with our data in more advanced and more in-depth ways. For instance, our data reveal several nuanced dynamics which suggest a possible relationship between network

characteristics, cultural dimensions and ideas engagement across different national contexts. This, therefore, raises the very real possibility that individualistic and collectivist cultures approach knowledge sharing and critical evaluation differently. For instance, while network size varies substantially across countries, there appears to be a consistent North–South divide, which potentially reflects deeper cultural traditions that shape the value placed on social interactions and discussion. This divide thus highlights the potential limitations of focusing solely on network size as a measure of engagement, suggesting that the qualities of one's networks – rather than the numerical quantity of members – may be more important for effective ideas exchange and evaluation. The findings also indicate that greater engagement with ideas might not inherently translate into higher quality evaluation of those ideas, while also pointing to the importance of individual and interpersonal factors in terms information sharing and being able to act on ideas. Here again, network qualities rather than quantity may be key, as our respondents appeared to prioritise interesting ideas over challenging ideas and demonstrated varied levels of social validation and expertise recognition. At the same time, we also saw that the planning capabilities of respondents does not always align with execution ability, highlighting the influence of personal and cultural factors on ideas-engagement resulting in concrete ideas-informed action.

Educational attainment levels would appear not to uniformly predict larger network sizes or higher ideas engagement rates. For instance, Italy's high college-level education rate (50.9%) correlates with large networks (61.3 individuals on average) and elevated engagement, whereas Switzerland, with a higher postgraduate education rate (33.4%), exhibits smaller networks (30.45) but high engagement. Similarly, Sweden, with approximately 50% of its population holding advanced degrees, demonstrates superior ideas evaluation capability (10.65: from a range of 0 to 12) but within relatively smaller networks (33.09). These cases suggest that how individuals leverage educational achievement may influence network effectiveness. Countries with higher educational levels may benefit more from individuals fostering close, high-quality networks for learning and ideas exchange than from expanding network size alone. Countries with high prospection scores, meanwhile, do not necessarily show greater ideas engagement or stronger evaluation. For instance, Spain achieves high prospection with high engagement across communication channels, but scores lower on ideas calibration. England, with similar prospection levels, shows lower engagement but improved calibration. These variations indicate that high prospection does not appear to guarantee more effective ideas engagement and that other cultural or contextual factors might moderate this relationship.

Applying Minkov–Hofstede's cultural dimensions framework to network and ideas engagement offers further insights. Countries with high individualism, such as The Netherlands, Sweden and Switzerland (individualism scores of 182, 133 and 105, respectively), tend to have smaller networks (The Netherlands has an average network size of 41.93, Sweden, 33.09 and Switzerland, 30.45) but often achieve more effective ideas exchange. The Netherlands, with the highest network homophily score (5.23), demonstrates that individualistic cultures may favour more selective and homogeneous networks, potentially enhancing the efficiency of knowledge transfer. In contrast, Italy and Spain, which exhibit lower individualism scores (5 for Italy and 58 for Spain) and larger networks (61.33 for Italy and 51.92 for Spain), reflect a more collectivist cultural orientation. Both countries engage broadly across digital and traditional information-sharing channels but demonstrate lower calibration scores. This suggests that collectivist cultures might emphasise information sharing over critical evaluation, particularly in contexts with shorter-term orientations, which focus more on immediate information sharing than on assessing information quality. The high individualism scores observed in England (93) and Finland (88) are coupled with long-term orientations (56 and 71, respectively), potentially supporting

critical thinking and high ideas calibration scores (5.41 for both countries). Despite their relatively small reported network size, both nations demonstrate effective ideas engagement, further potentially reinforcing the importance of network quality over size. Long-term orientation thus appears to foster critical thinking and improved evaluation capabilities, as evidenced by Finland, The Netherlands and other long-term-oriented societies. Short-term orientation, by contrast, correlates with higher engagement but may lead to less rigorous evaluation, as observed in Italy and Switzerland.

Conclusion

Our education, prospection, social networks framework is seemingly exemplified by the life and work of German polymath, geographer, naturalist, explorer and proponent of Romantic philosophy and science, Alexander von Humboldt (1769–1859). Tutored at a young age by enlightenment thinkers, including Kantian physician Marcus Herz and botanist Carl Ludwig Willdenow (one of the most important botanists in Germany); von Humboldt went on to study at the Universities of Frankfurt and also Göttingen. It was at the latter where he began to build his social networks: encountering first Steven Jan van Geuns, a Dutch medical student, with whom he travelled to the Rhine in the autumn of 1789. Then in Mainz, van Geuns and von Humboldt subsequently met Georg Forster, a naturalist who had accompanied Captain James Cook on his second voyage. His prospective mindset was already longstanding, with von Humboldt noting, for instance:

> My taste for botanising and the study of geology, with the chance of a trip to Holland, England and France accompanied by Georg Foster, who was lucky enough to travel with Captain Cook on his second world tour, helped determine the travel plans I had been hatching since I was eighteen years old (Wulf, 2015, p. 1).

Consequently, von Humboldt's combination of education, a prospective mindset and his social networks led him to "desire to see with my own eyes [the world in its richness and for […] collecting facts that might contribute to the progress of science". In other words, they facilitated and enabled von Humboldt to encounter and codify new ideas, not only for his edification but also for the benefit of others. Unlike Humboldt, however, we are only at the beginning of our journey – one in which we are seeking to explore whether this framework has true explanatory power. Although we have successfully operationalised our framework, developing a survey instrument that we have deployed in seven European countries, we now need to move beyond descriptive analysis. Our analysis as presented here, while offering insights into ideas-engagement, is insufficient to illustrate relational pathways between the variables of education, prospection and social networks and the strength of those pathways in terms of how they impact on the ideas engagement of individuals. As such, our future work will therefore now turn its attention to such requirements and so help determine with more analytical power, whether ideas engagement is a function of education, prospection, social networks and if so, how we use these concepts to advance towards an ideas-informed society for all.

Note

See: https://dictionary.cambridge.org/dictionary/english/post-truth

References

Baer, A. (2020), "What intellectual empathy can offer information literacy education", *Informed Societies: Why Information Literacy Matters for Citizenship, Participation and Democracy*, pp. 47-68.

Ball, T. (2023), "Hope sussex school trains next generation of conspiracy theorists", *The Times*, available at: www.thetimes.com/uk/healthcare/article/hope-sussex-school-trains-next-conspiracy-theorists-zbv6fnf57 (accessed on 8 November 2024).

Ball, T. (2024), "Exposed: the illegal school teaching children conspiracy theories", available at: www.thetimes.co.uk/article/exposed-the-illegal-school-teaching-children-conspiracy-theories-htcdtnm6h, (accessed on 26 April 2024).

Baumeister, R. and Lim, K. (2023), "Prospection", *The Palgrave Encyclopedia of the Possible*, Springer International Publishing, Cham, pp. 1392-1401.

Baumeister, R., Vihs, K. and Oettingen, G. (2016), "Pragmatic prospection: how and why people think about the future", *Review of General Psychology*, Vol. 20 No. 1, pp. 3-16.

Bierwiaczonek, K., Fluit, S., von Soest, T., Hornsey, M. and Kunst, J. (2024), "Loneliness trajectories over three decades are associated with conspiracist worldviews in midlife", *Nature Communications*, Vol. 15 No. 1, p. 3629, doi: 10.1038/s41467-024-47113-x.

Boynton, P.M. and Greenhalgh, T. (2004), "Selecting, designing, and developing your questionnaire", *BMJ*, Vol. 328 No. 7451, doi: 10.1136/bmj.328.7451.1312.

Brown, C. (2021), *The Amazing Power of Networks. A [Research-Informed] Choose Your Own Destiny Book*, John Catt, Woodbridge.

Brown, C. and Luzmore, R. (2024), "An educated society is an ideas-informed society: a proposed theoretical framework for effective ideas engagement", British Educational Research Journal, available at: https://bera-journals.onlinelibrary.wiley.com/doi/10.1002/berj.4110

Brown, C. and Groß Ophoff, J. (2022), "Exploring effective approaches for stimulating ideas-engagement amongst adults in England: results from a randomised control trial", *Emerald Open Research*, Vol. 1 No. 1, doi: 10.35241/emeraldopenres.14914.1.

Brown, C. and Luzmore, R. (2021), *Educating Tomorrow: Learning for the Post-Pandemic World*, Emerald, London.

Brown, C., Groß Ophoff, J., Chadwick, K. and Parkinson, S. (2022a), "Achieving the 'ideas-informed' society: results from a structural equation model using survey data from England", *Emerald Open Research*, Vol. 1 No. 1, doi: 10.35241/emeraldopenres.14487.1.

Brown, C., Luzmore, R. and Groß Ophoff, J. (2022b), "Facilitating the ideas informed society: a systematic review", *Emerald Open Research*, Vol. 1 No. 1, p. 25, doi: 10.35241/emeraldopenres.14729.1.

Brown, C., Luzmore, R. and Groß Ophoff, J. (2022c), "Anomie in the UK? Can cultural malaise threaten the fruition of the ideas-informed society?" *Emerald Open Research*, Vol. 1 No. 1, p. 28, doi: 10.35241/emeraldopenres.14786.1.

Campbell, D. (2023), "Dire need' for labels on alcohol and ads about unhealthy eating to cut avoidable cancers", available at: www.theguardian.com/society/2023/sep/16/dire-need-for-labels-on-alcohol-and-ads-about-unhealthy-eating-to-cut-avoidable-cancers, (accessed 17 March 2024).

Castling, J. and Johnston, J. (2023), "Curiosity and stories: working with art and archaeology to encourage the growth of cultural capital in local communities", in Brown, C. and Handscomb, G. (Eds), *The Ideas-Informed Society: Why we Need It and How to Make It Happen*, Emerald Publishing, Bingley, pp. 179-192.

Cheung, H. (2020), "What does Trump actually believe on climate change?" available at: www.bbc.co.uk/news/world-us-canada-51213003 (accessed 18 May 2024).

Christakis, N. and Fowler, J. (2010), *Connected: The Amazing Power of Social Networks and How They Shape Our Lives*, Harper Press, London.

Commission into Countering Online Conspiracies in Schools (2025), "Commission into countering online conspiracies in schools", available at: https://counteringconspiracies.publicfirst.co.uk/Commission_into_Countering_Online_Conspiracies_in_Schools.pdf, (accessed 26 February 2025).

Couchman, J.J., Miller, N.E., Zmuda, S.J., Feather, K. and Schwartzmeyer, T. (2016), "The instinct fallacy: the metacognition of answering and revising during college exams", *Metacognition and Learning*, Vol. 11 No. 2, pp. 171-185.

Craig, J. (2020), "Coronavirus: scores of rebel tory MPs launch anti-lockdown campaign group", available at: https://news.sky.com/story/coronavirus-scores-of-rebel-tory-mps-launch-anti-lockdown-campaign-group-12129631 (accessed 18 May 2024).

Cramer, C., Brown, C. and Aldridge, D. (2023), "Meta-reflexivity and teacher professionalism: facilitating multi-paradigmatic teacher education to achieve a future-proof profession", *Journal of Teacher Education*, Vol. 74 No. 5, p. 5, doi: 10.1177/00224871231162295.

D'Ancona, M. (2017), *Post Truth: The New War on Truth and How to Fight Back*, Ebury Press, London.

Department for Education (2024), "Elective home education", available at: https://explore-education-statistics.service.gov.uk/find-statistics/elective-home-education/2023-24 (accessed 26 April 2024).

DiMaggio, P. (1982), "Cultural capital and school success: the impact of status culture participation on the grades of U.S. high school students", *American Sociological Review*, Vol. 47 No. 2, pp. 189-201.

Erisen, E. and Erisen, C. (2012), "The effect of social networks on the quality of political thinking", *Political Psychology*, Vol. 33 No. 6, pp. 839-865.

Franco, A., Sousa, A.S. and Viera, R.M. (2019), "How to become an informed citizen In the (dis) information society? Recommendations and strategies to mobilize one's critical thinking", *Sinergias – di Logos Educativos Para a Transformação Social*, Vol. 9, pp. 45-58.

Greene, J.A. and Yu, S.B. (2016), "Educating critical thinkers: the role of epistemic cognition", *Policy Insights from the Behavioral and Brain Sciences*, Vol. 3 No. 1, pp. 45-53.

Guess, A., Nyhan, B. and Reifler, J. (2018), "Selective exposure to misinformation: Evidence from the consumption of fake news during the 2016 US presidential campaign", fake-news-2016.pdf (accessed 28 February 2025).

Hamilton, C. (2017), "That lump of coal", *The Conversation*, available at: https://theconversation.com/that-lump-of-coal-73046 (accessed 18 May 2024).

Hochschild, J. (2010), "If democracies need informed voters, how can they thrive while expanding enfranchisement?" *Election Law Journal: Rules, Politics, and Policy*, Vol. 9 No. 2, pp. 111-123.

Hofstede, G. (1980), *Culture's Consequences: International Differences in Work-related Values*, Sage, Beverly Hills, CA.

Hofstede, G. (2001), *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations* (2nd ed.), Sage, Thousand Oaks, CA.

Huber, C.R. and Kuncel, N.R. (2016), "Does college teach critical thinking? A meta-analysis", *Review of Educational Research*, Vol. 86 No. 2, pp. 431-468.

Imhoff, R., Zimmer, F., Klein, O., António, J.H.C., Babinska, M., Bangerter, A., Bilewicz, M., Blanuša, N., Bovan, K., Bužarovska, R., Cichocka, A., Delouvée, S., Douglas, K.M., Dyrendal, A., Etienne, T., Gjoneska, B., Graf, S., Gualda, E., Hirschberger, G., Kende, A., Kutiyski, Y., Krekó, P., Krouwel, A., Mari, S., Đorđević, J.M., Panasiti, M.S., Pantazi, M., Petkovski, L., Porciello, G., Rabelo, A., Radu, R.N., Sava, F.A., Schepisi, M., Sutton, R.M., Swami, V., Thórisdóttir, H., Turjačanin, V., Wagner-Egger, P., Žeželj, I. and van Prooijen, J.W. (2022), "Conspiracy mentality and political orientation across 26 countries", *Nature Human Behaviour*, Vol. 6 No. 3, pp. 392-403, doi: 10.1038/s41562-021-01258-7.

Jackson, M. (2019), *The Human Network: How We're Connected and Why it Matters*, Atlantic Books, London.

Kline, R.B. (2011), *Principles and Practice of Structural Equation Modelling*, Guilford Press, New York, NY.

McKiernan, J. (2024), "MPs given guide to spotting conspiracy theories", available at: www.bbc.co.uk/news/uk-politics-68990672.amp.(accessed 11 May 2024).

Milmo, D. (2024), "Trump shooting shows conspiracy theories not confined to right wing", available at: www.theguardian.com/us-news/article/2024/jul/15/trump-shooting-shows-conspiracy-theories-not-confined-to-right-wing (accessed 21 July 2024).

Milmo, D. and Hawkins, A. (2024), "How China is using AI news anchors to deliver its propaganda", available at: www.theguardian.com/technology/article/2024/may/18/how-china-is-using-ai-news-anchors-to-deliver-its-propaganda (accessed 18 May 2024).

Minkov, M. and Kaasa, A. (2022), "Do dimensions of culture exist objectively? A validation of the revised minkov-hofstede model of culture with world values survey items and scores for 102 countries", *Journal of International Management*, Vol. 28 No. 4, doi: 10.1016/j.intman.2022.100971.

NBC News (2017), "Conway: press secretary gave alternative facts", available at: www.nbcnews.com/meet-the-press/video/conway-press-secretary-gave-alternative-facts-860142147643?ex=digest (accessed 18 May 2024).

Neal, Z. (2013), *The Connected City: How Networks Are Shaping the Modern Metropolis*, Routledge, London.

Oettingen, G. and Reininger, K.M. (2016), "The power of prospection: mental contrasting and behavior change", *Social and Personality Psychology Compass*, Vol. 10, pp. 591-604, doi: 10.1111/spc3.12271.

Open Society (2023), "Open society barometer: can democracy deliver", available at: www.opensocietyfoundations.org/uploads/e6cd5a09-cd19-4587-aa06-368d3fc78917/open-society-barometer-can-democracy-deliver-20230911.pdf, (accessed 17 March 2024).

Pataranutaporn, P., Winson, K., Yin, P., Lapapirojn, A., Ouppaphan, P., Lertsutthiwong, M., Maes, P. and Hershfield, H. (2024), "Future you: a conversation with an AI-Generated future self reduces anxiety, negative emotions, and increases future self-continuity", arXiv preprint arXiv:2405.12514.

Pinker, S. (2018), *Enlightenment Now the Case for Reason, Science, Humanism, and Progress*, Penguin, London.

Putnam, R. (2000), *Bowing Alone: The Collapse and Revival of the American Community*, Simon and Schuster, New York, NY.

Rees, A. (2021), "The history of predicting the future", available at: www.wired.com/story/history-predicting-future/ (accessed 3 November, 2024).

Robins-Early, N. (2024), "OpenAI says Russian and Israeli groups used its tools to spread disinformation", available at: www.theguardian.com/technology/article/2024/may/30/openai-disinformation-russia-israel-china-iran (accessed 2 June, 2024).

Ruscio, A.M., Khazanov, G.K., Reece, A. and Kellerman, G. (2023), "Development and validation of the pragmatic prospection scale, a measure of constructive future thinking", Manuscript in preparation.

Schelling, T. (1971), "Dynamic models of segregation", *Journal of Mathematical Sciences*, Vol. 1, pp. 143-186, doi: 10.1080/0022250X.1971.9989794.

Vosoughi, S., Roy, D. and Aral, S. (2018), "The spread of true and false news online", *Science*, Vol. 359 No. 6380, pp. 1146-1151.

Wulf, A. (2015), *The Invention of Nature: The Adventure of Alexander Von Humboldt The Lost Hero of Science*, John Murray, London.

Further reading

Aguinis, H. and Cronin, M.A. (2022), "It's the theory, stupid", *Organizational Psychology Review*, Vol. 0 No. 0, doi: 10.1177/20413866221080629.

Kraimer, M., Martin, X., Schulze, W. and Seibert, S. (2023), "What does it mean to test a theory", *Journal of Management Scientific Reports*, Vol. 1 No. 1, pp. 8-7, doi: 10.1177/27550311231153484.

Krieglstein, F., Beege, M., Rey, G.D., *et al*. (2023), "Development and validation of a theory-based questionnaire to measure different types of cognitive load", *Educational Psychology Review*, Vol. 35 No. 1, p. 9, doi: 10.1007/s10648-023-09738-0.

Morris, W. (1908), "Hopes and fears for art", London, Longmans, Green and Co, available at: https://ia600904.us.archive.org/28/items/hopesfearsforar00morr/hopesfearsforar00morr.pdf(accessed 18 May 2024).

Oettingen, G. and Mayer, D. (2002), "The motivating function of thinking about the future: expectations versus fantasies", *Journal of Personality and Social Psychology*, Vol. 83 No. 5, p. 1198.

Rots, I., Aelterman, A., Devos, G. and Vlerick, P. (2010), "Teacher education and the choice to enter the teaching profession: a prospective study", *Teaching and Teacher Education*, Vol. 26 No. 8, pp. 1619-1629.

Yin, H. and Huang, S. (2021), "Applying structural equation modelling to research on teaching and teacher education: looking back and forward", *Teaching and Teacher Education*, Vol. 107, p. 103438, doi: 10.1016/j.tate.2021.103438.

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Appendix

Table A1. Operationalising the framework through ideas, networks, prospection and education survey

Label	Aspect of framework	Variable	Survey items	Scale	Existing (E) or new developed (ND) items
IE1	Ideas engagement	Value of ideas-engagement [keeping well-informed]	How important is it for you to keep yourself well-informed? For example, by finding out more about different ideas or perspectives; learning more about scientific discoveries and new technology; and/or discovering more about different aspects of history and culture (including arts, literature etc.).	• Very important • Important • Neither important or unimportant • Somewhat important • Not important	ND
IE2	Ideas engagement	Value of ideas-engagement [staying up-to-date with current affairs]	How important is it for you to stay up to date with current affairs? For example, by staying abreast of political and economic events; keeping up to date with sport; engaging with health-related developments; finding out more about new products, services or forms of media/social media; and/or maintaining an overview of the news generally.	• Very important • Important • Neither important or unimportant • Somewhat important • Not important	ND
IE3	Ideas engagement	Seeking out ideas	Thinking again about both staying up to date with current affairs and keeping yourself well informed, how often do you do the following *(please tick all that apply)*?: • Watch or listen to news programmes or channels • Watch or listen to current affairs programmes • Watch documentaries (of various genres) • Listen to podcasts (of various genres) • Read content from subscription emails • Read newspapers (physical copies or online) • Engage in other reading (such as magazines or books) • Access social media and blogs for content • Specific web searching • Use Wikipedia • Use a form of generative AI, such as ChatGTP • Attend public lectures or talks • Take courses (e.g. history of art, film etc.) • Activities, such as going to an exhibition at a gallery, museum or science park; or visiting a place of interest, a cultural site or similar	• Once a day or more • Every few days • About once a week • Once a fortnight • Once a month • Twice a year or less • Never	ND

(continued)

Table A1. Continued

IE4	Ideas engagement	Seeking out ideas	With these activities in mind, please select the <u>three</u> characteristics that most influence why you engage in/with them: • They offer topics or subject areas that interest you • You trust that they will provide you with reliable information/knowledge • Doing these things are part of your regular routine • They are enjoyable to use/visit • That often feel inspired as a result • That the content/subject matter presented is easy to understand • That you are presented with an expert view/opinion on a subject • An in-depth explanation of the issues is provided • They provide something topical, meaning you are up to date • They are free/inexpensive to access • That the analysis mirrors your own world-view and perspectives (e.g. political views) • That they are recommended or liked by others you know • Not applicable	• 1 • 2 • 3 • n/a A multi code rather than a ranking approach was used here	ND
IE5	Ideas engagement	Able to identify positive and dark ideas effectively	Please indicate the extent to which you believe the following statements to be true: • Participating in cultural activities – such as visiting museums or galleries – can have positive impacts, beyond just learning. • There is currently no evidence to suggest vaping is bad for your health. • Being obese can contribute to mental health issues like depression. • Our outlook on life, (e.g. our attitudes and beliefs), is influenced by the those in our social circles. • Parents and home environment have a bigger influence on children's success at school than teachers. • Immigration is the biggest threat facing society and the economy • Governments have no secret proof of encounters with UFOs and extra-terrestrial technologies. • Vaccines (such as MMR or the Covid 19 vaccine) are generally more dangerous to our health than the diseases they are designed to cure. • Global heating (climate change) is directly caused by human activity. • A number of terrorist attacks and incidents (such as 9/11) were carried about by national governments to provide an excuse to impose stricter and more prohibitive laws. • There is evidence to suggest the Earth is actually flat, rather than round. • Archaeologists believe that, before being destroyed, an advanced, Atlantis like, civilisation shared its knowledge with early hunter gatherers, leading to the creation of new civilisations, like ancient Egypt and Mesopotamia	• I strongly believe this to be true • I believe this to be true • I need more information to be able to judge this statement • I believe this to be untrue • I strongly believe this to be untrue	ND

(continued)

Table A1. Continued

ED1	Education	Level of education	What is your highest level of qualification?	• No qualifications • School level qualifications (such as GCSE or equivalent) • A level or equivalent • Apprenticeship • Bachelors Degree • Post Graduate Certificate or Diploma • Masters Degree • Doctoral Degree • Other – please specify	E e.g. Brown et al., (2022a)
ED2	Education	Ability to think critically	To what extent do you agree with the following statements: • I can recognize inconsistencies in the thoughts of others. • I can grasp the logical connections between different ideas. • I can interpret, evaluate, and analyze facts to make informed judgments. • I actively seek out evidence that might counter what I already know. • I am more likely to trust something when it builds on what I know to be factual/accurate. • If I am not sure about something, I will research to find out more. • I am able to ask hard questions to challenge other people's observations and assumptions. • I am confident in my ability to assess the credibility of information sources. • I know how to search for reliable information to develop my knowledge of a topic. • I am confident to express my expertise on a subject • I am confident to admit when I don't know something • I can recognize biases in my own thinking and am open to exploring alternative viewpoints • I can identify misconceptions and flaws in my reasoning. • It's important that my opinions are influenced by evidence and not solely emotion or personal experience • I am seldom swayed by a speaker's ability to make a compelling case if it's not backed up with evidence.	• Strongly Disagree • Disagree • Neither agree nor disagree • Agree • Strongly Agree	ND
NW1	Networks	Network size	Please indicate the approximate number of: • Close friends you have • Close family members you have • Members of a club you belong to (such as a sports club) to whom you talk socially [other than close friends] • Members of a group or community you belong to whom you talk socially [other than close friends] • Members of a religious group you belong to (such as church, mosque temple or synagogue) to whom you talk socially [other than close friends] • Work colleagues to whom you talk socially [other than close friends] • Neighbours to whom you talk socially [other than close friends] • Social media connections you have? • Social media connections (excluding family and friends) that you engage with	Open response text	ND

(continued)

Table A1. Continued

NW2	Networks	Ideas network centrality [keeping well-informed]: how many people respondents discuss ideas with	Thinking about keeping yourself well-informed for the moment (for example, when you find out more about different ideas or perspectives; learn more about scientific discoveries and new technology; and/or discover more about different aspects of history and culture - including arts, literature etc.), with how many of your social connections do you discuss these types of things? [uses same set of responses as Network Size]	• I discuss with all or almost all • I discuss with many • I discuss with about half • I discuss with a few • I discuss with very few or none • n/a	ND
NW3	Networks	Ideas network centrality [keeping well-informed]: how often respondents discuss ideas with social connections	Thinking about keeping yourself well-informed for the moment (for example, when you find out more about different ideas or perspectives; learn more about scientific discoveries and new technology; and/or discover more about different aspects of history and culture - including arts, literature etc.), how often do you discuss these types of things with your social connections? [uses same set of responses as Network Size]	• Every time I see them/engage with them • Most times that I see them/engage with them • On some of the occasions when I see them/engage with them • Rarely • Never • n/a	ND
NW4	Networks	Ideas network centrality [staying up-to-date with current affairs]: how many people respondents discuss ideas with	Thinking about keeping staying up to date with current affairs for the moment (for example, when you stay abreast of political and economic events; keep up to date with sport; engage with health-related developments; find out more about new products, services or forms of media/social media; and/or maintain an overview of the news generally), with how many of your social connections do you discuss these types of things? [uses same set of responses as Network Size]	• I discuss with all or almost all • I discuss with many • I discuss with about half • I discuss with a few • I discuss with very few or none • n/a	ND
NW5	Networks	Ideas network centrality [staying up-to-date with current affairs]: how often respondents discuss ideas with social connections	Thinking about keeping staying up to date with current affairs for the moment (for example, when you stay abreast of political and economic events; keep up to date with sport; engage with health-related developments; find out more about new products, services or forms of media/social media; and/or maintain an overview of the news generally), how often do you discuss these types of things with your social connections? [uses same set of responses as Network Size]	• Every time I see them/engage with them • Most times that I see them/engage with them • On some of the occasions when I see them/engage with them • Rarely • Never • n/a	ND
NW6	Networks	Ideas network ties [weak or strong]	With these social connections in mind, please select the three characteristics that most influence why you engage with about current affairs, ideas or new perspectives: • That you consider them to be knowledgeable • That you have similar views, outlook or beliefs in common • That you find them easy to talk to • That you find their points of view interesting or enlightening • That they positively challenge your existing views, outlook or beliefs • That you find their perspective reassuring • That other people you know think they are worth listening to • That you feel comfortable expressing your views to them • Other [please specify] n/a	• 1 • 2 • 3 • n/a A multi code rather than a ranking approach was used here	ND

(continued)

Table A1. Continued

			To what extent do your close friends:			
			• Share the same political views as you?			
			• Have the same level of qualifications as you?	•	All do	
			• Live in the same neighbourhood as you?	•	Most do	
			• Have the same occupation as you?	•	Some do	
NW7	Networks	Network density	• Belong to the same clubs you belong to (such as a sports club)?	•	Very few do	ND
			• Belong to the same groups or communities you belong to?	•	None do	
			• Belong to the same religious group you belong to (such as church, mosque or synagogue)?	•	Don't know	
			• Share something else in common with you (such as interests or hobbies)?	•	n/a	
			• Believe the same kinds of things to be true as you?			
			• Know one another?			
			To what extent do you agree with the following statements:			
			• I contemplate my ideal outcomes for the future.			
			• I imagine what my future will be like once I reach my goals.			
			• I consider alternative paths toward a goal and choose the best one.			
			• I get stuck when I encounter unexpected delays or difficulties on the way to a goal.			
			• My goals exceed the reality of what I can do.			
			• I make plans that specify different courses of action depending on how things progress.	•	Strongly Disagree	
			• I am unsure what to do when things don't go as planned.	•	Disagree	E
PR1	Prospection	Whether respondents possess a prospective mindset	• My goals are so optimistic that I rarely meet them.	•	Neither agree nor disagree	
			• When making a plan, I build in extra time for unanticipated problems or delays.	•	Agree	e.g. Ruscio et al. (2023)
			• When I reach a "fork in the road" on the way to a goal, I get stuck deciding which path to choose.	•	Strongly Agree	
			• I envision the outcomes I want most.			
			• I consider obstacles I might encounter on the way to my goal and plan how I will deal with them.			
			• My goals are often unrealistic given the time and resources I have available.			
			• I am uneasy when circumstances require me to modify my plans.			
			• I make a backup plan in case my original plan fails.			
			• I identify the outcome I am hoping for among the possible future outcomes.			
			• My goals are often impractical.			
			• I imagine how I will feel after reaching my goal.			

Source(s): Table created by authors