

To what extent do corporate and governmental organisations involved in AI accurately incorporate public welfare into their leadership decisions?

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Laidlaw Scholars Research Project

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Abstract

We investigate to what extent corporate and governmental organisations involved in AI effectively incorporate public well-being into their decision making. Our study was motivated by the potential of AI to impact human welfare. Our study design was influenced by the critical role that social actors like government and corporate leaders play in shaping the development of science and technology, including AI. We aimed to understand whether leaders considered public well-being when making decisions about AI, and whether their considerations coincided with public experience. We used a mixed methods approach: conducting quantitative analysis of survey data on public well-being and thematic analysis of interview data from policymakers and business leaders. We found variation in the accuracy of leaders' understanding of AI's effects on well-being; this was not determined by the type of leader (corporate/governmental), as we initially expected. The expected impact of a leader's decisions on AI is determined by their effectiveness and their priorities and values surrounding public well-being. In our survey, we found that AI use has had significant positive effects on workplace efficiency, and these effects were most accurately perceived by business leaders. The effect on mental health and social relationships was ambiguous, yet some policymakers over-emphasised the potential negative consequences of AI on these areas. Overall, we recommend that policymakers increase their efficiency and accuracy by taking an evidence-based approach to decision-making. Tangibly, we recommend they increase regulation of businesses utilizing AI for expanding their market share, at the cost of consumer health and welfare.

Introduction

When Open AI released Chat GPT in November of 2022, artificial intelligence (AI) was thrust into the limelight as a paradigmatic technological development that could radically transform the future of humanity (Marr, 2023). This paper focuses on current actions of businesses and policymakers in shaping AI development and regulation. Until recently, AI has been left relatively unregulated, meaning its development has been determined by a handful of influential companies. We assess the extent to which leaders making decisions about AI consider its impact on public well-being over corporate, political, or other incentives. We also assess whether leaders' perceptions about the public's priorities are "accurate" by surveying AI users and assessing whether leaders' perceptions coincide with their experiences.

Our motivation stems from the immense potential of AI for both harm and good. We focus on well-being or public welfare, instead of traditional economic measures of impact (such as income), because the latter are insufficient for studying AI's broad impacts. Utilising well-being falls in line with recent literature in well-being economics (De Neve, Layard), which claims that citizen well-being should be measured directly since other metrics are not sufficiently good proxies. We focus on leadership (in line with the Laidlaw Scholars programme requirements), particularly on the influence of business and political leaders' decision-making on the development of AI products or legislation, and how they affect public wellbeing. We aim to disentangle the causes of welfare harms incurred by AI: differentiating between 1) bad decisions rooted in inaccurate beliefs, 2) poor decision-making strategies, and/or 3) pursuit of private interest at the expense of public well-being. Subsequently, we make policy recommendations for targeted interventions on AI product design and deployment that could improve public well-being. This paper identifies the importance of responsible leadership for developing ethical AI to drive societal progress. Leaders must be effective decision-makers, and embody conscientious motivations, centred around human flourishing.

This study utilises structured interviews with prominent AI business leaders and policymakers, to uncover their decision-making strategies and goals. Our analysis discerns whether public well-being is a relevant consideration for leaders and its weight relative to competing priorities. Second, we investigate AI's impacts on the public through a survey. There are likely to be differences between decision makers' perspectives and consumers' experiences, so public well-being is best captured by surveying consumers themselves. The survey focuses on three out of nine key determinants of well-being (Layard, De Neve): mental health, social relationships, and work; we expected these to be the most impacted by AI. Finally, we contrast considerations of decision-makers versus users' perceptions on the well-being impacts of AI, to evaluate accuracy in leadership decision-making.

In our survey we find that AI has some benefits for our sample, such as improving efficiency at work, but also may have led to declining mental health levels. Interviews concur with survey data on productivity: both business leaders and policymakers envision economic benefits from AI use, with business leaders demonstrating greater optimism. However, leaders do not consider impacts of AI on changes to human interactions and mental wellbeing. The direction of AI development depends on the choices of decision-makers; thus, it is important that these are correctly aligned with public interest.

The paper is structured as follows: first we provide the theoretical basis and rationale for our research in the literature review. Second, we discuss our approach to data collection in the methodology. Third, we

present our interview findings and combine leaders' effectiveness and wellbeing considerations to deduce the expected impact of their decisions on AI development. Fourth, we present our survey results and analyse the data. Fifth, we combine interview and survey analysis to discern whether leaders' decisions are accurate and speculate on the effects of their decisions on public experience. Finally, we draw conclusions and present policy recommendations.

Literature Review

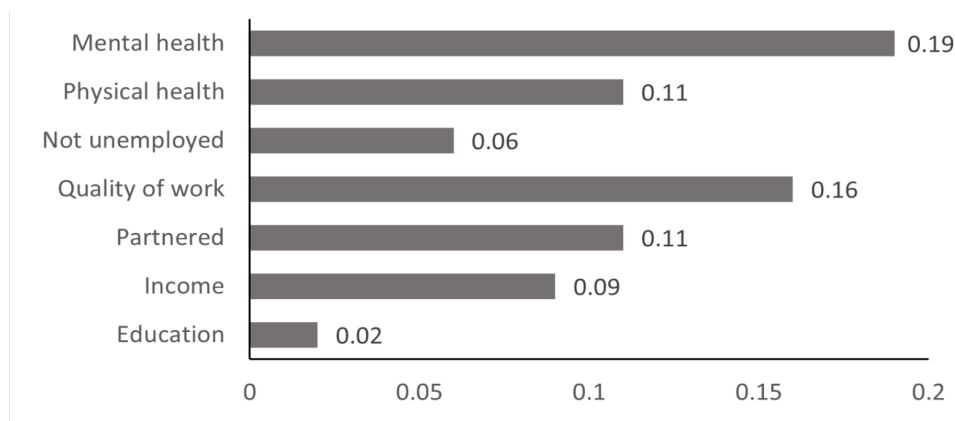
We draw on three main bodies of work: Science and Technology Studies (STS), Wellbeing Economics and Theories of institutional decision-making. STS provides the rationale for connecting leadership decisions to well-being outcomes. Wellbeing Economics sets the terms of our research and the metrics used to evaluate public wellbeing. Theories of institutional decision-making will inform on leaders' priorities and decision-making processes; aiding in developing hypotheses about leadership decisions, which we can contrast against interview data. We also review effectiveness in decision-making, defining a decision-making model against which we compare our interviewees' processes.

Science and Technology Studies

Leadership decisions by businesses and policymakers shape the development of Artificial Intelligence: they determine the features and uses of AI products. The public engages with AI products, and these may have significant impacts on well-being. Science and Technology Studies explain the interaction between business interests and policymaking when shaping technological progress. In *The New Production of Knowledge*, Gibbons, Nowotny and Michael (1994) argue that present developments in science and technology are set in a "political arena and marketplace" where not only universities and academic institutions shape its production, but other actors such as governments, businesses, international organisations, and advocacy groups are involved. Its implication for AI technology is that governmental and corporate organizations play a central role in the development of AI through their decision-making.

Traditional understandings of 'well-being'

We define well-being and its determinants to set the terms of our research. We argue public well-being (as a measurable factor) should be the aim of public policy and thus, policymakers should be regulating AI to produce outcomes that increase public wellbeing. We draw from Layard's seminal work on Well-being Economics: *Happiness (2006)* and his newer work alongside De Neve *Wellbeing: Science and Policy (2023)*. Although many standard economic models assume utility is derived from income, it is only one determinant of well-being (Layard and De Neve 2023). Well-being depends on nine key factors: physical health, mental health, family and social relationships, work life, income, good government, personal values, and genes. Together, these determine how *well* one feels: their quality of life. We concur with the authors that it is important to study well-being since it is self-evidently good: all things equal, more well-being is better than less well-being.



What explains the variation of life satisfaction among adults over 25? (Britain). Source: A.E. Clark et al (2018) [Table 16.1](#).

Historically economists have shied away from well-being because it is a “subjective” metric; however, Layard, along with other researchers (Plant (2020) and Adler and Seligman (2016)), dispel this notion. Well-being can be measured in an accurate and stable way through thoughtfully designed surveys. Adler and Seligman (2016) summarise the iterations that subjective well-being measures have undergone to reach a state which, they argue, is accurate enough for use in public policy. Two aspects of well-being can be measured: hedonic well-being (feeling good) and eudaimonic well-being (functioning well or being satisfied) (Adler, A. & Seligman, M. E. P. (2016)) and both can be elicited from surveys.

This study focuses on the effects of AI on three determinants of well-being: mental health, family and social relationships, and work life. Mental health can be measured through standard psychological evaluation. Family and social relationships are captured by the quantity and quality of an individual’s relationships and interactions with their community. Work life refers to experiential qualities of people’s job rather than pecuniary compensation. Aspects of work life that play a role in well-being include fulfilment and satisfaction, workplace environment, stability, routines, learning, and intellectual development (Layard and De Neve 2023).

Theories of Corporate Decision-Making

The features of AI products have mostly been determined by corporate leaders; governmental institutions have had limited influence in initial stages of development. We define a theory of corporate decision-making to understand the leadership decisions that have led to the current state of AI. Agency theory conceptualises the relationship between managers and shareholders through the principal-agent model: where managers aim to maximise shareholder returns, and make sure that employees fulfil their duties to achieve this (Jensen and Meckling, 1976). Centring businesses around shareholder interests suffers from an accountability vacuum: companies are not accountable to their consumers or other affectees. They have limited liabilities, which encourages managers to invest in areas that promise results (i.e., sales and profit) instead of innovation and creative problem solving (Bower and Paine, 2017).

The literature supports a behavioural approach to decision making, where bounded rationality and political bargaining among coalitions of stakeholders determine firm targets. Firms exhibit satisficing behaviour: achieving outcomes that are 'good enough', rather than optimal (Ees et al, 2009). Furthermore, company boards serve to gather and organise information, using new knowledge to adapt goals and make them attainable. If the environment is stationary for sufficient time, profit maximisation equilibrium is approached via learning (Simon, 1979). However, the AI industry is rapidly shifting so the current state is likely to be far from profit maximisation.

In more recent observations of board and executive behaviour, Boot et al (2005) documents a shift towards distant monitoring to retain objectivity, but at the risk of over-reliance upon monitors' objectives. In continental Europe, firm directors have greater governance autonomy, allowing them to supersede set targets, leading to ex-post monitoring. Thus, welfare risks of AI may not be anticipated nor incorporated into decision-making ex-ante. Many firms take a structured approach to decision-making to prevent bias: a decision is evaluated against key, measurable individual factors, and then judged holistically using intuition (Kahneman et al., 2019). To facilitate agility in firm decisions, a clear responsibility structure for providing inputs, decision-making, and implementation is essential; this also ensures high performance (Rogers and Blenko, 2001). The weight given to welfare maximisation depends on the priorities of the dominant coalition group and is threatened by capture, which entails that business executives as individuals have overwhelming influence over risks of AI to public well-being.

Theories of Governmental Decision-Making

Next, we investigate the decision-making processes of policymakers, the second main actor determining AI development. Decision-making can be bottom-up for issues of low conflict and uncertainty. Whereas for high conflict and certainty situations it is top-down, with greater focus on centralised decisions (Cerna, 2013). At the EU level, there are multiple reforms to improve policymaking and facilitate stakeholders' participation, including: consultations, harmonising EU rules with national legislation, and ex-post evaluation (CEPS, 2009). Policymakers have a duty to respond to stakeholder and electorate demands, although the adequacy of their consultations is questionable. There has been increased attention to data collection and performance indicators in policy making, yet use of evidence has been obfuscated by political arguments and there have been barriers to partnering with external entities for information. We also observe poor processing and use of collected information in the policy space (Head, 2016, pp 473). In practice, lack of a structured, evidence-based process has been a source of agony, leading to often ad-hoc and chaotic decisions based on practicalities (Hallsworth et al, 2011). The literature lends support to a policymaking approach that finds a careful balance between scientific advice and political incentives, to finding a compromise between conflicting interests.

In democracies, the Median Voter Model is fundamental to describe policy outcomes arising from political confrontation: it states that the policies of the median voter are preferred in a pairwise vote (Downs, 1957). Often there is a divergence between voter interests and government policy decisions, which can be explained through the influence of interest groups. The Olson Model implies that coordination costs rise with interest group size to the advantage of mobilising smaller, concentrated, interest groups (Olson, 1965). Therefore, large consumer groups are especially disadvantaged at the expense of business lobbies; from this insight we expect AI policy choices to be suboptimal for consumer welfare.

Effectiveness in Decision-making

Effective decision-making demands precise, accurate, and measurable goals (Obi and Agwu, 2017). Peter Drucker (2006) explains that effective decisions are made when differences in viewpoints are tested against facts rather than through 'intuitive' decision making. To assess courses of action, an effective executive determines boundary conditions that a decision must meet, and searches for facts to assess whether such conditions are met. Effectiveness and efficiency are complementary aspects in decision-making: effectiveness is about whether decisions meet desired ends and efficiency optimises the means to achieve these ends.

Heuristic driven biases are found to impair entrepreneurial strategic decision-making, especially in uncertain environments, by causing systematic and predictable errors. Thus, effective decisions require involvement of multiple levels of management and predetermined guiding principles to prevent biases (Traversky and Kahneman, 1974; Ahmad, Shah & Abbas, 2020). Effective decisions depend on leaders adopting a 'scout mindset': where individuals update their beliefs according to novel facts, rather than searching for evidence to defend pre-existing viewpoints and ignoring contradictory evidence (Galef, 2021). An optimal approach includes experiments to test alternatives and probabilistic reasoning to update degrees of belief based on quantified data. Tetlock (2015) reinforces the importance of evidence-based, Bayesian reasoning for making accurate predictions about the future and for taking decisions that will optimise outcomes given the current state of affairs. We expect leaders who take such approaches to be more effective decision-makers.

Specifically for policies, Rachel Friedman (2020) presents a case for use of probabilities in social insurance schemes, to accommodate opposing views on fairness. Jeffrey Friedman (2019) is critical of using predictions in political decisions because of the unreliability of knowledge connecting proposed policies to desired ends. The "ideational heterogeneity" - lack of uniform response by humans to changes in external conditions - lends support to considering the premises under which probabilistic beliefs hold and refrain from overinterpreting such predictions. Despite this caveat, there is still a place for probabilistic reasoning in policymaking to make decision and implementation more effective.

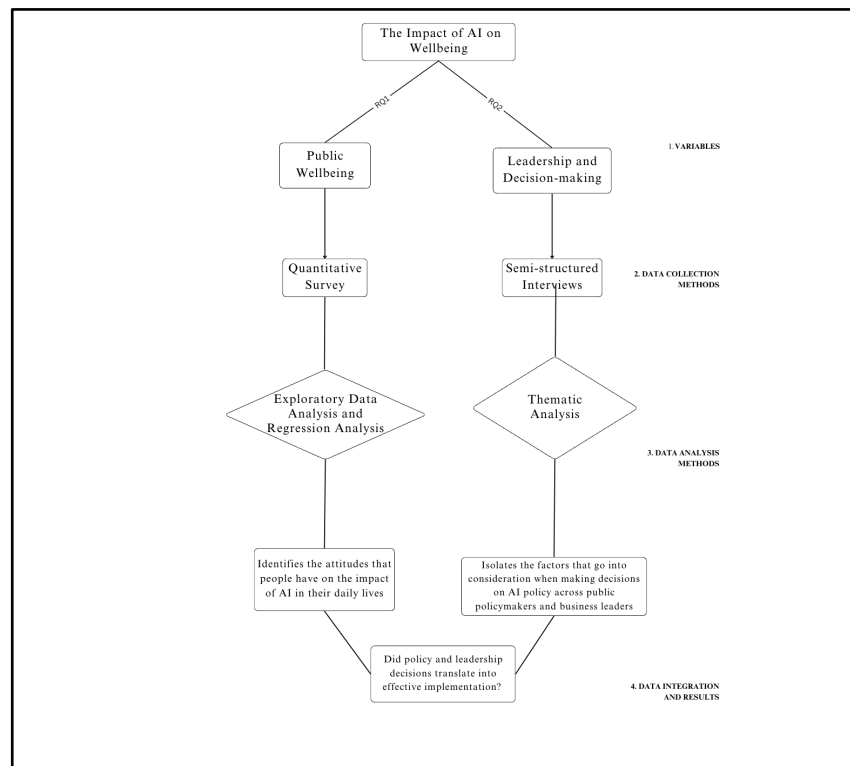
Methodology

Our research adopts a mixed methods approach, combining qualitative analysis (interviews) and quantitative analysis via surveys to gain a comprehensive understanding of the impact of AI on public well-being. This methodological choice is grounded in the need to capture both the insights of key decision-makers and the sentiments of the public concerning AI use and impact. In this section, we provide an overview of our research design: beginning with the qualitative data from interviews, followed by the quantitative survey methodology. **Figure 2** gives a visual overview of the methodological strands of our research, illustrating how they combine to answer our research question. The primary research question, along with the two sub-questions are listed below.

Research Question (RQ). To what extent do corporate and governmental organisations involved in AI incorporate public welfare into their leadership decisions accurately?

Sub-Question 1. How do business leaders and policymakers integrate well-being considerations into their decision-making processes regarding AI implementation and regulation?

Sub-Question 2. How do individuals perceive the impact of everyday AI technologies on their well-being in domestic and workplace settings?



Qualitative Data: Interviews

The theoretical justification for our interviews draws on STS, which postulates that social institutions shape developments in science and technology. We focus on two main actors shaping the development of AI: policymakers at the European level and business leaders. We interview decision-makers in these two areas to understand their priorities (especially regarding well-being) and effectiveness in achieving them. Given we had the opportunity for in-depth, open-ended conversations and dialogue with our interviewees, our approach is classified as a semi-structured one (Jordan, 2001; Adams, 2015). Literature surrounding leadership (Blowler & Payne, 2017; Heimann & Kleinmann, 2020; Graham et al., 2022), and strategic decision-making in positions of power (Papadakis & Barwise, 2002; Buckley & Casson, 2019; Kahneman, Lovallo, and Sibony, 2019) informed our interview guides (**Appendix 1**). Two separate guides were created for business executives and policymakers; these were slightly adjusted and personalised for each interviewee.

Interviews were designed to last for 45-minutes to one hour. Policymakers were contacted through their respective press representatives and personal assistants, while business executives were contacted through their corporate emails; interviewees could choose between an in-person or online interview. A total of three policymakers, two business leaders, and two policy researchers (for advisory purposes) were interviewed. Interviewees are high-profile, so data has been anonymised and stripped of personal identifiers; direct quotations will not be used for this same reason. We refer to interviewees by identifying their sector and number those in the same sector.

Policymaker 1: MEP from the EPP (European People's Party) working on the EU AI Act

Policymaker 2: Political advisor to an MEP from the S&D (Socialists and Democrats) working on the EU AI Act

Policymaker 3: Policy Officer at the European Commission (DG-CNECT) leading on the EU AI Act

Business Leader 1: CEO of a leading AI solutions company and Chief AI officer at a multinational communications company

Business Leader 2: Senior manager for Digitalisation at a FMCG company

In terms of process, interviews begin by confirming the interviewee's consent for participation. We then ask the interviewee to introduce themselves and their role. The first section is about the decision-making processes of interviewees' firms or organisations. We aim to understand the interviewee's place in the decision-making landscape to gauge their impact on AI products or legislation.

Next, we ask about general decision-making, to understand the frameworks and considerations that underpin their decisions. We ask interviewees to describe effectiveness in decision-making: to assess their process of prioritisation and conducting trade-offs between conflicting aims.

After, we ask AI specific questions: namely, perceived risks, benefits, and their effects on prioritisation for decision-making on AI. We identify whether leaders consider public well-being a priori; if they do not mention it, we prompt them with specific questions about public well-being in relation to their decisions about AI.

We conclude with an open question for our interviewee about AI's current impact on human welfare and their decision-making.

Survey

To measure the effects of AI on public well-being, we used methods from Well-being Economics (Adler and Seligman (2016), Layard and DeNeve (2023))) and surveyed the public to measure AI's effects on three key determinants of well-being: mental health, relationships, and work life. We limit ourselves to three determinants to secure higher survey participation and aid in data processing. We used measures of hedonic well-being, given it was more suitable to capture changes in well-being from AI product use. Measuring eudaimonic well-being would have been difficult, since it required experimental conditions, with data about respondents' eudaimonic well-being before engaging with AI products (which we did not have). In conducting surveys, a snowball sampling approach was used (Naderifar et al., 2017). The only criterion for taking the survey was that the participant had engaged with AI products or used them in their daily lives. Individuals with an online presence are likely to have used AI products; thus, the survey was disseminated online.

Survey participants were given statements scored on a 10-point Likert scale: -5 indicated an extremely negative effect on wellbeing, while 5 indicated an extremely positive effect; 0 indicated no significant effect. The questionnaire had three sections, each capturing one aspect of wellbeing: mental health, (b) interpersonal relationships, and (c) work life. A total of 181 participants took the survey. The mental health section focuses on the impact of AI technologies on emotional management, mitigation of disturbances to healthy life habits, and feelings about the future. The interpersonal relationships section investigates the impact of AI on meaningfulness and stability of social interactions. The work life section centres around subjective feelings about work, its environment and value beyond monetary compensation.

Findings

As detailed in our methodology, we utilise two streams of data collection: a survey questionnaire and interviews. We will summarise our findings in the following section.

Interviews

Interviews gave us rich, detailed information on the AI landscape and agenda, leaders' decision-making processes, prioritisation, and speculations on the future of AI.

We utilise thematic analysis for our interviews, in line with standard practices in social science research. We split themes into two categories: (1) well-being and (2) decision-making. This split comes from our research question¹, since we require an understanding of: (1) well-being aspects incorporated into AI leaders' decisions and (2) effectiveness of leaders' decision-making. We later combine both aspects to contrast leaders' well-being considerations with reports of the public's well-being (survey findings); and assess whether the most effective leaders have the most accurate well-being considerations.

We followed a grounded theory approach; 4-5 themes per category emerged from the data. We chose a theme-driven structure instead of separating by type of interviewee because we observed that often interviewees across types (business/government) held more similar views than those from the same type. Thus, it was more coherent to utilise themes, rather than interviewee role.

Themes

Wellbeing

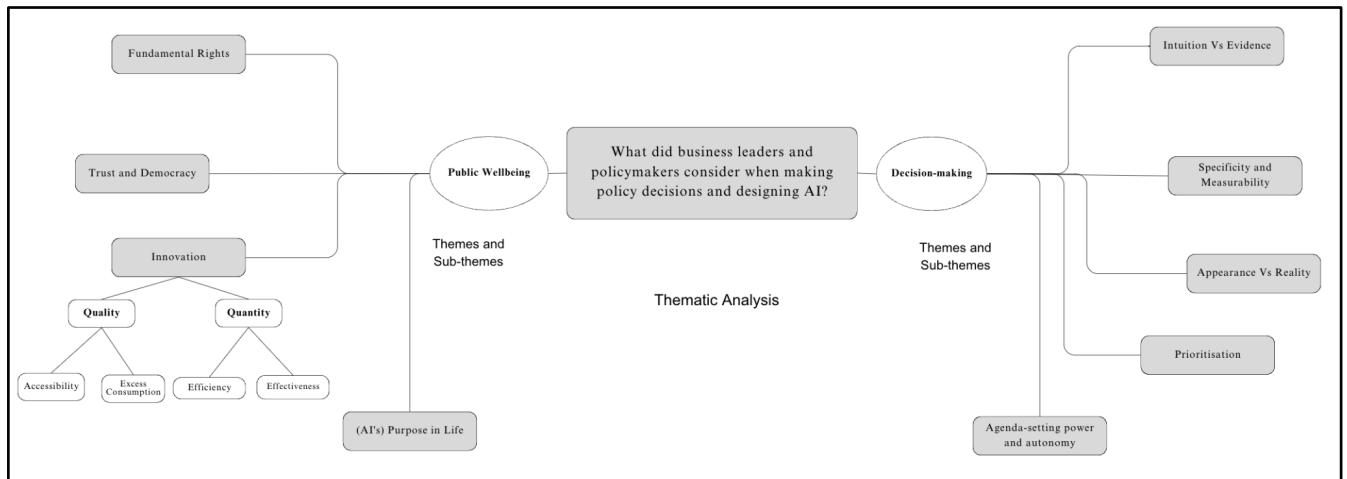
1. Fundamental Rights, Security/Safety and Privacy
2. Trust and Democracy
3. Innovation
 - a. Quantity: Increasing Access to Goods and Services
 - i. Accessibility
 - ii. Excess consumption
 - b. Quality: Efficiency and Effectiveness
4. Purpose in life and role of humans (links to mental health)

Decision-making process

1. Intuition vs Evidence
2. Specificity and measurability
3. Appearance vs reality
4. Prioritisation
5. Agenda setting power and autonomy

¹ To what extent do corporate and governmental organisations involved in AI accurately incorporate public welfare into their leadership decisions?

Figure 2 Visual representation of generated themes and sub-themes.



Thematic analysis

Theme 1: Wellbeing

The following themes express the main ways interviewees conceptualised and accounted for well-being in their priorities. Although they don't coincide with the literature on the determinants of well-being, many of their considerations are correlated to well-being outcomes.

Fundamental Rights, Safety and Privacy

Protecting fundamental rights, security, and privacy was a concern for many of our interviewees, especially when prompted on well-being considerations and risks of AI. All interviewees agreed it is important to regulate unsafe AI, posing direct threats to humans. This concern was less present on the business than the policymaker side; as we expected from the theoretical background on corporate decision-making (cite).

Policymaker 2, from the S&D party, focused on fighting discrimination and algorithmic bias in AI systems. She also emphasised protecting privacy and avoiding surveillance from excessive data use by AI systems. Specifically, defending the classification of facial recognition systems as 'high risk' in the EU AI Act. However, Policymaker 1 from the EPP believed this risk's significance was overstated and claimed that benefits to well-being from personal data use (e.g., for medical diagnosis and treatment) could outweigh costs of privacy loss. Policymaker 2 was against innovation if it threatened safety, fundamental rights, and privacy at all; whereas Policymakers 1 and 3 were willing to make tradeoffs between innovation and risk.

On the other side, Business leader 1 saw potential for AI to enhance human rights by creating resource abundance and freedom from economic oppression. This positive framing contrasted with policymakers' negative outlook and focus on risks. Business leader 1 believed rights concerns were legitimate, but not the most pressing. He used a PESTEL framework to analyse potential AI risks, which was well thought-out, but we did not see from other interviewees. Business leader 2 did not comment on this topic; it did not seem to be their priority.

Interviewees' emphasis on safety (regulating high-risk AI) is positive for well-being outcomes, since they are directly linked: safe AI protects people from direct harm. However, the effects of protecting fundamental rights and privacy are ambiguous; both are correlates of well-being, but do not necessarily lead to better outcomes. It is possible that barring use of personal data by AI systems could prevent the development of new AI products that vastly improve public well-being; this would be a negative outcome. Policymakers that prioritise well-being by demanding strict data protection, may be mistaken about the actual effects of their efforts on public well-being. To determine which approach is better for well-being outcomes, this effect must be measured, calculating the expected net benefit or cost from privacy loss and technological development.

Trust and Democracy

Interviewees also spoke about the threat of AI to democratic processes and trust; they preempted potential long-term effects of AI on social dynamics. Trustworthy AI was cited by many of our interviewees as a worthy pursuit; however, their concept of trust varied. Policymaker 3, from the European Commission, and Business leader 1 explained that "trustworthy AI" (interpretable and transparent systems) is important when AI tools make decisions that materially affect human lives.

Policymakers held diverse perspectives on AI's threat to trust and democracy. Policymaker 2 cited data overuse as a great threat, since it could lead to mass surveillance and erode trust in society. Whereas Policymaker 1 cited increased misinformation and disinformation propelled by generative AI as the greatest threat to democracy and trust. Business leader 1 echoed this threat, when referring to AI's political singularity in the PESTEL framework. Both advocated for monitorization of content creation. However, Business leader 1 admitted this was unrealistic and required changes in media companies' business models: either paying for services or requiring user monitorization of content.

Business leader 1 also expressed AI's potential to improve trust and democracy. AI could increase social cohesion, since increases in efficiency and resources would allow people to invest more time into their relationships and meaningful activity, instead of labour.

People living in democracies and societies with high levels of trust tend to have higher well-being on average. Trust in particular, is a direct correlate of wellbeing (Layard 2006). Thus, leaders' awareness of this substantial long-term risk to well-being from AI is positive, as long as they come up with risk reduction and mitigation strategies. Policymakers had different ideas about how this risk would materialise, which called for different types of policies - this may be problematic if preventing democracy risks calls for policy coordination.

Business leader 2 made no comment on this risk, which may be a negative factor if it is representative of many other business leaders' opinion: indicating they are not attuned to this major risk. Additionally, business leaders' differing priorities could actively harm social cohesion, especially if they benefit from AI uses that increase misinformation and sensationalism.

Innovation: Greater Access to Goods and Services

AI innovations can increase efficiency in processes, bring down costs of production, and increasing quantity of goods and services produced. This broadens availability and accessibility. Increase in access to core goods and services is likely to contribute to well-being, especially in less developed countries.

Most interviewees lended some support to this benefit, although business leaders were more focused on it. Business leader 1 argued that removing frictions from production of essential goods could bring down living costs and free people from the economic need to work. As a result of this increase in quantity of goods and economic abundance, people could invest their time in purposeful work that potentially contributes to positive human development. However, this leader acknowledged negative well-being aspects of excess consumption and advocated against the use of AI for this purpose.

Business leader 2 highlighted AI's impact on increasing accessibility of their goods, but also emphasised its use for growing their business through improved targeted advertising and finding 'consumer winning' solutions. In contrast with the previous business leader, her approach may lead to overconsumption, preference alteration, and behavioural choices. This implies negative outcomes for public well-being, if company growth is pursued beyond necessity (to be expected from a public company, with duties to shareholders to increase market share and profit).

Policymaker 1 advocated for decreases in business costs from efficient AI applications. They also cited current benefits of AI use for public production: to mass produce vaccines, in record time, during the COVID pandemic. Whereas, Policymaker 2 supported greater transparency and regulation to make the use of AI technologies visible to consumers and did not stress its potential to improve production processes.

Some AI innovations bring the possibility of over-consumerism and behavioural consumption, which are welfare deteriorating. When pressed about the issue, Business leader 2 (from a FMCG company) was reluctant to acknowledge this risk and instead, drew attention to other factors impacting consumption like: economic development, affordability, and the public's mood. Leaders' unwillingness to admit AI's potential negative impact on well-being was not a good sign.

Interviewees' suggestions that AI will make essential goods and services accessible, at lower prices, is positive for well-being. Consumption generally increases people's well-being; they could have better quality lives at a lower cost, allowing them to work less, and have more time for leisure and pursuit meaningful activities. Such a benefit is especially welfare-enhancing for less developed societies, as it would increase the uptake of basic goods and services that increase well-being. However, at the margin, this argument breaks down, since at certain levels of wealth the marginal benefit to well-being (utility) from consumption diminishes; especially in societies where most of the population earns enough to cover their

basic needs. Additionally, this argument tends to be overstated: as Layard et al. find, income and consumption are only one determinant of well-being, and not the most significant.

Positive well-being outcomes also depend on companies refraining from utilising AI to distort consumer preferences and encourage overconsumption. Business leader 2 revealed that AI helps companies produce food products with attractive taste; thereby, increasing consumption despite lack of welfare benefits or potential negative impacts on health. Also, AI in targeted marketing facilitates increased consumer demand; this does not necessarily cohere with consumers needs, but distorts preferences to encourage consumption choices which are not value adding. This would be a negative well-being outcome.

Innovation: Efficiency and Effectiveness

Our interviewees also identified other types of innovations from AI: increasing the quality of products (as opposed to quantity) through better efficiency and effectiveness.

Efficiencies, in time and cost, were crucial for both business leaders: to allow employees more time to engage in higher value-added activities. Policymaker 3 countered this claim by arguing that innovations to achieve efficiencies, has an opportunity cost for the present, and this could pose a burden to the public (if funded by public money).

There was divergence between policymakers and business leaders in how effectiveness of AI innovations can be brought about. Business leaders and Policymaker 1, championed greater data transparency and ease of use to allow for AI innovations that improve the quality of goods and services. Whereas other policymakers thought effectiveness meant implementing robust guidelines, to limit potentially risky AI usage, mostly by private actors. This divergence in opinions seemed to stem from differences in their expertise on innovative technologies: AI business leaders' have low confidence in policymakers' capacity to steer the direction of AI investments. This is substantiated by the fact that business leaders situated their innovative investments within their vision for the future, but Policymakers 2 (especially) and 3, concentrated on regulating technologies with visible impacts on our current lives, not necessarily the most impactful on future lives. Policymaker 1 hesitated about overregulation, which is explained by his incentives to retain AI innovators in the EU market. This observation is in line with the literature on special interest groups (Olson 1965), indicating that the corporate lobby may have some influence on Policymaker 1's perspectives. However, his position could also be linked to well-being considerations, since job creation and enterprise development in the technology sector could have long-term benefits for European citizens.

Greater efficiency is likely to be positive for well-being, since it will enable people to do more with less and balance the workload of professions with excessive working hours. It can have damaging consequences for well-being if the increased efficiency makes human labour futile and humans cannot find any alternative tasks that are future proofed from automation. An efficiency process is beneficial for well-being granted that it is also effective.

Ensuring effectiveness (either through testing or regulation) improves the outcomes of the AI process and ensures that the AI system has net benefits for its users. For example, using AI systems for sifting through

large datasets and drawing implications from them is highly effective, as it prevents humans from performing a task that they are inefficient and unsuitable for.

One business leader suggested unlocking greater efficiencies through more data collection and transparency. Such readily available data is likely to help leaders make a decision for the public well-being by considering more diverse data points or checking for consistency across data sets (e.g., when comparing expense declarations with the receipts of payment). A policymaker defined effective decision as one incorporating different stakeholder perspectives. Thus, a decision based on more stakeholder consultations rather than few is more likely to be impartial and contribute to an outcome for the public benefit.

Purpose in Life: Role of Humans in an Increasingly Digitized Realm

AI is increasingly used for semi-automation of skilled jobs, this raises questions about changes to human life and purpose. The ability for humans to engage in productive tasks and contribute to their communities through paid or unpaid labour is a core tenet of their wellbeing.

Both business leaders envisioned AI technologies could enable people to complete current work faster, unlocking opportunities elsewhere: contributing to strategic thinking within their firms (BL 2) or utilising their time for higher ends like human development and environmental interaction (BL 1). Business leader 1 sees AI as a means to accelerate a shift in the role of the public as decision makers: as employees and consumers, people should choose to work and buy from companies whose purpose and goals align with theirs. Increased economic freedom from efficiency gains in AI will allow people to be free to make these choices.

Regulators were less explicit in their vision for humanity's future, but also focused on ensuring human-centric AI. Policymaker 1 reiterated the importance of a 'future oriented' education to foster an understanding of programming and digitisation, especially in training citizens for jobs secured from automation. He also emphasised the potential of AI to foster innovations that make people's lives easier.

Policymaker 3 focused on fulfilling the Von der Leyen Commission's commitment towards 'human centric AI'. This illustrates the vague directions given to policymakers for policy development: meaning the societal impact of these technologies are often shaped by the visions of influential business leaders, journalists, and academics, rather than policymakers.

We observed policymakers' focus on optimising AI's benefits for human lives, while business leaders were more likely to consider the meaning of human lives in themselves, beyond their material needs. For instance, the MEP explained his support for developing AI technologies in terms of the beneficial impacts on livelihoods for his people and his own person: automated vehicles would help him drive when old. The senior manager at a FMCG company, however, focused more on optimising the worker's skills and ensuring that her people 'stayed relevant' rather than developing AI technologies to their limit. This is inherently due to different business and policy priorities, shaped by interest groups behind policymakers and the people who are influential in contributing to business success.

In terms of well-being implications, more time spent on higher level tasks, like making complex judgments, developing creative solutions, and interpersonal tasks, are likely to enhance well-being by increasing the meaningfulness of people's work - which is a direct contributor to well-being. However, these positive well-being effects can only be materialised if humans are trained to utilise new technologies and fulfil these demanding tasks. Additionally, a sufficient quantity of new tasks must be created to ensure humans are engaged in relevant and meaningful work. A society where AI automates most human tasks, and the pace of AI development outruns the pace of human retraining may result in mass technological unemployment and a decrease in humans' sense of purpose and value - this is a potential negative well-being scenario.

On the other hand, if the efficiency and goods accessibility scenarios come to fruition - people will have more time to invest in well-being enhancing activities like: building relationships and high quality social interaction, which could also increase trust and make societies more interconnected - all these being positive for well-being. Additionally, working and buying from purposeful companies would also be positive, since the benefits from working and consumption would have the added well-being benefit of contributing to a valuable cause.

However, it is questionable whether the conditions for this positive AI scenario will materialise. We previously found that business leaders tend to shape the societal direction of technological development more than policymakers; so if there are more business leaders utilising AI with preference-altering effects and to increase consumer behaviouralism rather than consumer autonomy, this may have significantly negative well-being implications

Theme 2: Decision-making

The following themes address leaders' decision-making strategies. We judge decision-making based theories of governmental and corporate decision-making theories from the literature review.

Intuition vs Evidence

We observed two styles of decision-making: intuitive and evidence-based; we place these on opposite sides of a spectrum and interviewees fall somewhere in between. All based their decisions on some evidence, although the degree and quality of evidence varied. An intuitive vs evidence-based approach has implications for effectiveness; as shown in the literature, an evidence-based approach is likely to yield more effective decisions (i.e., better at achieving their aim).

Close to the intuitive style we find Policymakers 1 and 2 from the Parliament. They gather some evidence when meeting with lobbyists (industry, interest groups, and civil society) and citizens, to understand stakeholder perspectives; but weigh stakeholders' interests intuitively. They also analyse current use cases of AI as evidence for future risks and benefits. But their analysis and evidence lack quantification and predictive power. They predict the potential outcomes of their policies intuitively, rather than with evidence and structured models.

At the middle level, more towards an evidence-based approach was Policymaker 3 from the Commission. They conduct in-depth and structured consultations, obtaining richer, more structured data in comparison to Parliamentarians' meetings with lobbyists. There is more deferral to academia and experts to discern effective, evidence-based policies, especially for AI. Inevitably there is some intuitive weighing of priorities when stakeholders express conflicting views, but this is done less intuitively than for parliamentarians (since they have a party agenda to abide by). Notably, they lack evidence-based follow-up on their decisions. There is little effort to gather evidence and evaluate whether legislation is achieving its purported objectives. So an evidence-based approach is taken in the early stages, while an intuitive one is adopted in the later stages of policymaking.

On the evidence-based side of the spectrum we find business leaders. Business leader 1 was notably more intuitive than Business leader 2; yet we could discern structure in their reasoning. Both business leaders aimed to gather extensive amounts of evidence and data; 'as much as possible', they report. They come up with theoretical frameworks to describe complex situations. They act according to measurable targets and use business tools like agile methodologies, quarterly business reviews, containing SMART goals. Decisions are made based on the best available evidence; its effects are monitored and measured, to determine the most effective next decision. Even experimentation in R&D is roadmapped and iterates based on evidence. This contrasts starkly with policymakers' approach.

In light of our data, business leaders are more effective than policymakers. This may have positive implications for well-being, if business leaders aim for well-being; it has negative implications otherwise. On the policymaker side, it has adverse well-being consequences, since policymakers will be less effective

at safeguarding the public's interest. One especially negative aspect was that members of parliament did not believe they need to measure public well-being; their intuitive inferences sufficed for them. This is likely to deliver much worse well-being outcomes than if policymakers aimed to measure well-being effects of policies (Layard et al).

Specificity and Measurability

If leaders have specific goals, with measurable targets they will be more effective; that is, more likely to achieve their aims and to know when they have achieved them. Both aspects increase the ability to pursue a particular objective (rather than having a vague aim which keeps changing and is never achieved).

We observe that policymakers tend to have an unspecific, unstandardized conceptualization of well-being. They make decisions based on broad characterizations, which they rarely pinpoint and may be incoherent with others' characterizations. When speaking to policymakers about well-being, they struggled to conceptualise it; often asking what we meant by well-being, or taking for granted that whatever their pursuits, these would be good for well-being, by virtue of their role as policymakers. The idea of well-being as a standardised consideration, to be evaluated during decision-making, was lacking. As a result, policymakers legislate based on vague principles and are more susceptible to being swayed by lobbyists' arguments when synthesising stakeholder perspectives.

Policymakers expressed more specific ideas when discussing use cases or current applications of AI. They could identify AI's tangible impacts on people and predict potential future impacts; but they rarely tied this to a conceptual understanding of well-being. Policymaker 1 also stressed the differences in AI technologies, yet his lack of specificity in explaining his vision for AI technologies, possibly due to his lack of technical expertise, meant he used generalised categories and approaches in legislating AI. Policymaker 2 mentioned that there is no specific conceptualisation of wellbeing in the EU AI Act, and Policymaker 3 explained that public wellbeing is relative: there are tradeoffs between financial costs bore by some citizens and benefits received by others. This demonstrates a lack of awareness of the academic literature of well-being science and the standardised processes for measuring well-being.

Also, there was low measurability and monitoring of policy outcomes once legislation was passed. Policymaker 3 stated that only the implementation of policy across different Member States was monitored, although without specific procedures. This contrasts with both business leaders' approach in measuring effects with respect to measurable targets. Business leader 2, for example, uses specific and measurable targets - mostly focused on profit growth and efficiency gains - in her decision making. The multinational nature of the company inherently results in specific definitions and guidelines per geography for data collection and AI investments, aligning with local regulations. Specificity of advertising campaigns to channels and audiences is also important in appealing to the end consumer and broadening product sales.

Business leader 1 had specific business targets in place but a more diverse definition of their beneficiaries, going beyond employee and shareholder interests. He also added specificity into his conceptual frameworks

to find targeted solutions to problems. Guided by core principles and ideologies, he took measurements as proxies for his aims and carefully tailored them accordingly.

Overall, business leaders were much more specific in their targets and approaches than policymakers and had clearer evaluation mechanisms in place. This can be explained by the role of values in policymaking and difficulty of capturing concrete effects of policies in a short time.

Specific targets and clear monitoring procedures means businesses are likely to have more success in meeting their targets and more effective decision-making. Tracking progress is easier when there are identifiable and measurable benchmarks. This does not necessarily mean that effective decision-makers with specific and measurable approaches more successfully factor in wellbeing considerations. Whether this occurs depends on leaders' priorities and the importance of values beyond profit-making (or growth, and other traditional business aims) for firms and extent of political buy-in for politicians. For instance, Business leader 2 had a more unidimensional metric for corporate success (involving growth and efficiency), but Business leaders 2 considered factors beyond conventional business strategies, such as human rights and environmental considerations.

Transparency in decision-making

Whether decision-makers are open and honest about the motivations behind their decisions is important for public scrutiny and well-being outcomes.

Business Leader 2 puts sustainability at the forefront of their agenda on the surface, but as the interview progressed it became increasingly obvious to us that this was not their primary target. They do not consider implications of increasing growth through AI innovations on overconsumption, which could worsen both social and environmental sustainability. Their bold purpose (sustainability) helps direct the company towards taking actions for resolving their core issue, but the authenticity of this purpose is questionable when it is largely at odds with their profit motive.

At the most basic level, the AI leader's decision-making appears obscure for himself but can be conceptualised by the interviewer.

Similarly, Policymaker 3 exemplified the dual nature of policymakers' role to protect the public interest, but their de facto motives to push for their or their parties' interests. Although he stressed the independent role of the European Commission in representing collective interests, to ensure AI benefits public wellbeing.

The dichotomy between appearance and reality is visible across the policymaking spectrum. In the negotiation process, Policymaker 1 expressed he must appear to take a harsher stance than his genuine position, as a part of the balancing act against opposing forces. This dichotomy is not necessarily harmful for human welfare as long as it is utilised consciously, without jeopardising trust and encouraging flexibility and consensus.

Overall, lack of transparency in decision-making may worsen well-being, since this divergence between leaders' purported aims and their real objectives problematizes the process of public scrutiny and protest. The public sees companies' positive purposes and policymakers' claims of representing public interest; yet if decision-makers are intransparent these claims are misleading. It takes much more effort for the public to realise this divergence between values and there is less incentive for them to intervene in the decision-making process. As a result, outcomes favour business or party priorities, which may not necessarily cohere with public well-being.

Parliamentarians' use of taking more extreme stances to arrive at a moderate position can be beneficial for public well-being due to the final outcome balancing out different interests (in line with the median voter model). However, if opposing sides do not balance or if strategic polarisation inhibits consensus, we can expect worse well-being outcomes from policy (or lack of thereof).

Prioritisation

Prioritisation plays a key role in decision-making: leaders face an abundance of choice, their prioritisation process determines their goals and thus, decisions to achieve these goals. It determines whether decisions are welfare enhancing or deteriorating.

We observe differences at the political and business level. Businesses must be profitable to keep operating in the long-run, so inevitably leaders will prioritise financial sustainability. However, there is much to decide beyond financial sustainability. We observe this decision and prioritisation happens at the managerial level. Especially in large organisations, mid-level employees are usually set targets from above. Targets are based on company values, these are articulated into specific and measurable goals, which employees follow. In smaller organisations we observed that C-suite have discretion over employee autonomy and often there is more space for employees to prioritise individually (in line with company objectives).

Policymakers are managing stakeholder interests so they operate differently. They receive guidelines from higher levels (party leadership, Commission presidency), but their prioritisation process is about weighing interests. In the parliament, we observed this is done broadly across party lines. In the Commission, we observed it relied on the individual's interpretation of presidential guidelines; still, Policymaker 3 expressed he must be strategic in prioritising elements of legislation that will secure "buy-in" from other directorates and managers.

Despite this difference, we find our data transcends the business/political distinction since prioritisation relies heavily on individual (or company/party) values. Business leader 1 and Policymakers 2 prioritised AI safety, and making decisions that lowered the possibility of risk and harm from AI. Business leader 2 and Policymakers 1 were more in favour of devising AI solutions to harness the potential of AI for their goals; they placed less emphasis on risks. Policymaker 3 offered a balanced view, placing relatively equal weight on innovation and risk.

Our findings imply that well-being outcomes will depend on the values and priorities of decision-makers in the AI landscape, more so than we expected. If leaders place a priority on enhancing public well-being through their decisions, this is likely to lead to better well-being outcomes. Leaders are not as constrained as we expected by the requirements of their jobs: profitability (business) and representation (political).

Agenda Setting Power and Autonomy

Agenda setting power and autonomy is important for decision-making because it defines the scope of leadership decisions. The more agenda setting power, the greater the range of leadership action; thus, the more opportunities to take well-being enhancing decisions, instead of being restricted by a fixed agenda. The greater the autonomy of leaders the more their individual beliefs matter for leadership decisions. From our interview data we observe differences between corporate and governmental sectors in agenda-setting power, we also observe some variation within.

Business leaders had greater agenda-setting power and autonomy than their political counterparts. Private corporations can pursue any aim; they are only constrained by regulation and a profitable business model. For our interviewees these did not pose significant barriers to agenda-setting power. For business leaders, their agenda-setting power depends on the size of the company and their position. For large multinational companies (Business leader 2), power is reduced for individual leaders: since actions must fall in line with broader company aims. Individual leaders are less autonomous and must respond to their organisation's interests. For smaller, tech-focused companies (Business leader 1) we observed greater autonomy for leaders and employees. Both of our interviewees identified constraints to agenda setting from legislation: most notably data/GDPR and international hiring (due to Brexit legislation).

Businesses' autonomy means their prioritisation of well-being depends on leaders' willingness to pursue it as a business goal. For some of our interviewees this was a priority, for others less so. For some leaders this also depended on the extent to which their organisation focused wellbeing.

On the policymaker side, we observed that agenda setting power is constrained by leaders' duty to accommodate stakeholder interests. Still, the executive arm (European Commission) has greater agenda-setting power and autonomy than the legislative (European Parliament). The European Commission drafts the initial piece of legislation, which is debated by the Parliament and Council. This grants a considerable amount of power and autonomy to Commission bureaucrats; they make key decisions on what to include or omit from the agenda. Policymaker 2 mentioned that parliamentarians are constrained by the parliament's mandate: they cannot introduce new ideas or legislation, only make amendments. They also seemed more constrained by stakeholder and interest group pressure; Policymaker 1 mentioned their role was to mediate and compromise rather than push for new initiatives.

The effects on wellbeing are ambiguous. On the one hand, policymakers' duty to stakeholders means they must consider civil society organisations and consumer groups, which aim to defend public wellbeing. However, they must also value industry and other interests which may pull legislation in the opposite direction. As public servants, they are tasked with protecting public wellbeing which should lead to positive

well-being outcomes; still, constraints on their agenda-setting power in comparison to businesses may be suboptimal for well-being.

Survey Instruments

Survey Structure

A 41-item survey was deployed on Qualtrics. The intention of the survey was to capture the attitudes of individuals engaging with AI tools in three specific realms of wellbeing: (a) individual mental wellbeing, (b) interpersonal social wellbeing, and (c) workplace wellbeing. Together, they give us an indication of the impact of AI on everyday users. Particularly, a general indication of the EU AI Act's policy efforts on personal and social wellbeing have had effect.

As previously discussed, survey instruments were carefully designed based on pre-existing, standardised measures of wellbeing; these questions were adjusted to measure the impact of AI on wellbeing; apart from this, they remain unchanged. Appendix 4 contains survey questions, along with the cleaned data sample.

Design and Measures

Initial demographic questions were asked to capture the demographic diversity in our survey sample. Alongside giving us an indication of the characteristics of the sample, demographics provide an indication of the pre-existing factors that could influence a respondents' answer choices. For example, the question gauging the frequency of AI use (Appendix 4.) would be heavily dependent on the geographic region of the participant, and whether they have ready access to hardware, internet and software required for AI use.

Second, wellbeing is largely linear and subjective, with a variable either having a negative, or positive impact on an individual that is influenced by context. Thus, subjective well-being scales that are used to measure an individual's quality of life by considering emotional and cognitive judgements are useful to collect data for our research question. The use of a Likert-scale to capture attitudes on the impact of AI on wellbeing domains further emerges as a strong candidate that would yield interesting data; quantifying these self-reported attitudes would not only enable us to evaluate the significance of these attitudes but also provide us with the opportunity to gauge whether this significance is impacted by external variables, such as demographics.

The three sections on well-being took the form of a 10-point Likert-scale: with -5 indicating an extremely negative impact of AI on wellbeing, +5 indicating an extremely positive impact on wellbeing,

and 0 indicating no perceivable effect on wellbeing. Further, participants were given the opportunity to elaborate on any responses or provide additional context that they believe the survey failed to capture.

Dissemination

To ensure the sample did not take on a WEIRD (Western, Educated, Industrialised, Rich, Democratic) skew, we aimed for the survey to be widely shared across different social media platforms. Further, the diversity of the researchers themselves, to some extent, theoretically increases the probability of a diverse sample. Thus, the decision was taken to employ a snowball sampling approach, asking contacts and online respondents to further share the survey to secondary contacts. This accomplished two things:

- (a) One, respondents who share and take the survey would be individuals who have experience with AI relevant to our research question, and
- (b) Two, the survey's reach would extend to a broader range of demographics and regions, reducing the potential WEIRD bias and enhancing the overall diversity of the sample.

However, there do exist concerns around this approach. While snowball sampling approaches expand respondent diversity, there is no guarantee of a representative sample. Thus, results must be interpreted with caution and would not be generalisable or universally applicable. Second, snowball sampling can lead to network effects, where certain groups dominate the sample because they have more extensive networks or are more active in sharing the survey. This could still ultimately skew our sample as the survey was shared within a London-based university and London-based researchers.

Timeline

Survey was deployed after primary and secondary checks were carried out by the research group and the supervisor. The survey was active for three weeks, after which responses were closed. Survey dissemination and interviews were conducted in conjunction, and the data collection finished toward the first week of August 2023.

Survey Analysis

Preliminary Analysis

Data Cleaning

A total of 181 responses were obtained over the course of the five weeks of dissemination. As this was a within-person design, any missing data due to false completions (submission without any attempt of responses) or fraudulent survey responses (responses that were completed in less than 10 minutes or were straight-lined) were deleted listwise ($n = 76$). A final sample of 105 responses were validated for primary analysis.

Descriptive Statistics

Demographics

Out of 105 respondents, two-thirds were students while the rest (~33%) were engaged in paid work of some capacity. This indicates a skewed sample; however, this was expected, as the survey was largely circulated within university social media groups and online forums. In addition, most respondents hailed from the United Kingdom and Western European countries; this limits generalisability outside a European context but is suited for answering our research question and on studying the impacts of the EU AI Act. Finally, with regards to the gender divide, there were slightly more male participants than female

<i>Employment Status</i>					
Employed Full-time	Employed Part-time	Student	Unemployed	Not in Workforce	Unknown
24.76%	8.57%	60.95%	1.9%	1%	1.9%
<i>Religious affiliation</i>					
Religious			Non-Religious		
41.90%			46.67%		
<i>Gender Divide</i>					
Males		Female		Non-binary	
53.33%		45.71%		1%	

participants, with around 53.3% identifying as male; however, there was only a minor representation of non-binary and genderqueer individuals. The table below provides the percentage split of respondent demographics. Missing responses, or respondents who indicated they preferred to not answer certain questions are not included since their presence was marginal (~5 responses per section).

Table 1: Demographic data of the collected sample

Average Well-being Scores

Since respondents selectively filled in questions that were applicable to their case, we create mean well-being scores based on responses in each section. Respondent’s scores across each section were averaged, leading to the creation of three average scores, viz., ‘Average Mental Wellbeing’, ‘Average Social Wellbeing’, and ‘Average Workplace Wellbeing’ for each individual respondent. The responses for ‘Social class’, ‘Religious affiliation’, ‘Education’, and ‘Frequency of AI Use’ were converted to numeric variables for statistical analyses. A thorough breakdown of data cleaning and post-cleaning measures done to procure the final sample is listed in **Appendix 4**.

Table 2: Descriptive statistics for average wellbeing scores in each domain

From **Table 2.**, it is evident that all realms of wellbeing have, at least once, been negatively impacted by the use of AI. Furthermore, the mean impact of AI on social wellbeing seems to have a slightly negative effect, at $X_{SOC} = -.07$, while the most positive impact of AI seems to be on workplace wellbeing. The standard deviation for all three wellbeing domains is between 1.5-1.9 units.

<i>Wellbeing Domain</i>	<i>Min.</i>	<i>Median</i>	<i>Max.</i>	<i>Mean</i>	<i>sd</i>	<i>n</i>
Mental Wellbeing	-5	0.53	5	0.30	1.94	98
Social Wellbeing	-5	0	4.5	-0.07	1.9	73
Workplace Wellbeing	-5	1.45	4.67	1.33	1.53	92

Table 2: Descriptive statistics for average wellbeing scores in each domain

Next, the frequency of AI use was inspected. (**Table 3.**) Here, 0 represents no engagement with AI, or an isolated experience with AI. ‘1’ represents AI use a few times per month, ‘2’ represents AI use every other week, ‘3’ represents AI use every week, and ‘4’ represents frequent AI use every day. The descriptive statistics of the frequency of AI use is given below. Out of the 94 respondents who indicated their frequency of AI use, the mean seemed to be 1.74 out of the 4 point scale, indicating that respondents engaged with AI tools on a weekly, or bi-weekly basis.

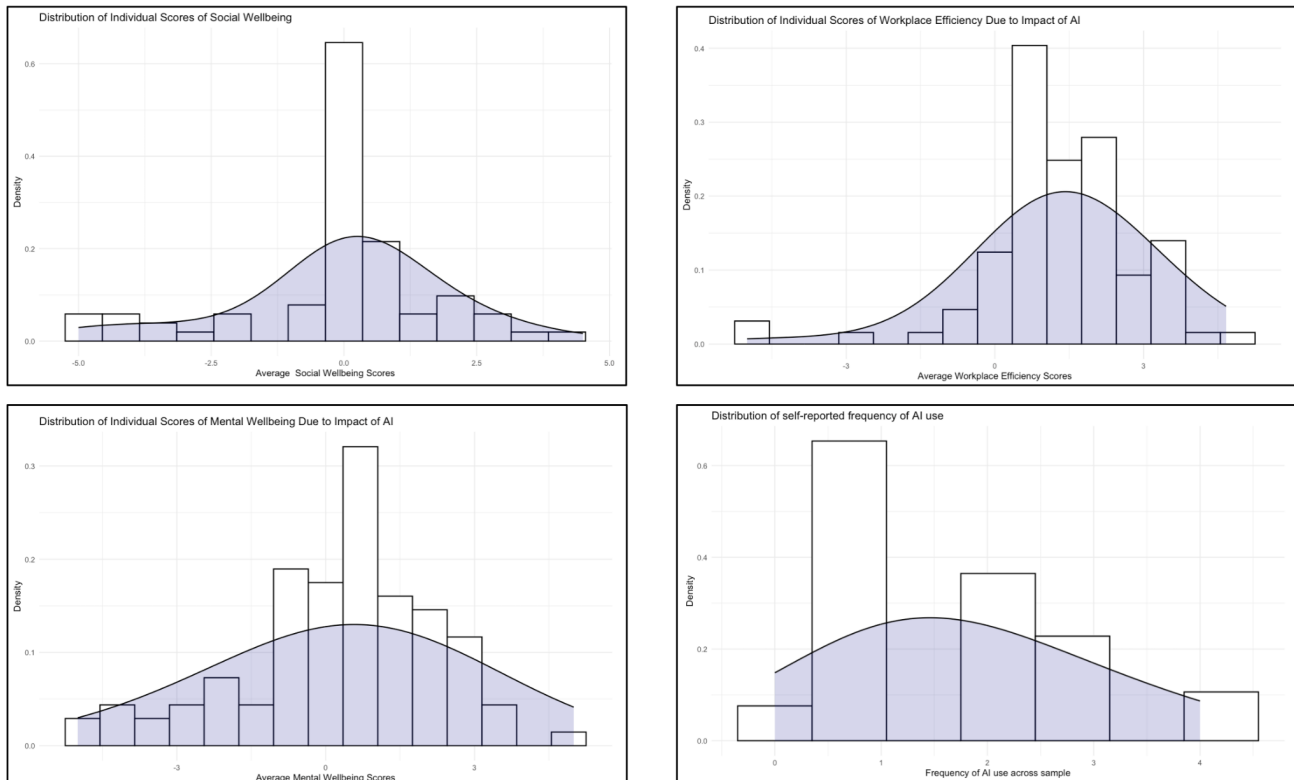
Table 3. Descriptive statistics for frequency of AI use

<i>Min.</i>	<i>Median</i>	<i>Max.</i>	<i>Mean</i>	<i>sd</i>	<i>n</i>
0	1	4	1.74	1.03	94

Conditions of Normality

Before proceeding with primary analysis, it is crucial to ensure that the data obtained fits a normal distribution, and if not, adjust statistical analysis to account for this deviation. To ensure the reliability of further analyses, assumptions were evaluated using the *performance* R package (Lüdtke et al., 2021). These included checking for normality and independence of residuals, equality of variance, absence of influential observations, multicollinearity, and homoscedasticity.

Figure 3. Distributions of responses for four key variables; average social wellbeing, average workplace wellbeing, average individual mental wellbeing, and frequency of AI use.



Primary Analysis

Pairwise Pearson Correlations

To assess the extent of correlation between variables, parametric correlation tests were computed using the *testcorr* R package (Dalla, Giraitis and Phillips, 2021). Average mental wellbeing, social wellbeing, and workplace wellbeing were compared against the frequency of AI use to delineate any significant correlations. The correlation table, along with the p values are displayed in **Table 4**.

Table 4. *Pearson's correlation table with correlation coefficient and p value.*

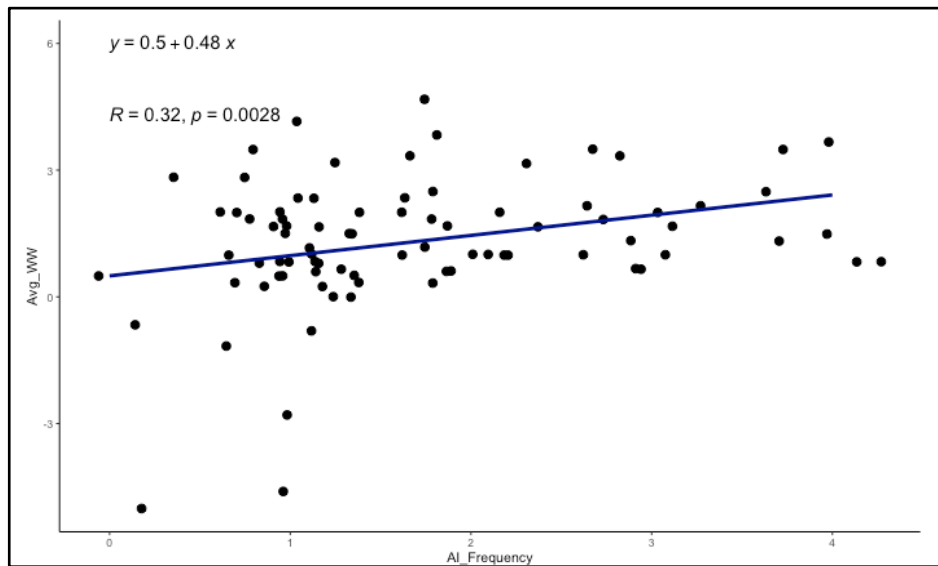
		Mental Wellbeing	Social Wellbeing	Workplace Wellbeing	Frequency of AI Use
Mental Wellbeing	<i>r</i>	—			
	<i>p</i>				
Social Wellbeing	<i>r</i>	.32	—		
	<i>p</i>	.007**			
Workplace Wellbeing	<i>r</i>	.30	-.07	—	
	<i>p</i>	.006**	.588		
Frequency of AI Use	<i>r</i>	-.11	.03	.32	—
	<i>p</i>	.332	.820	.003**	

Note. ** $p < .01$

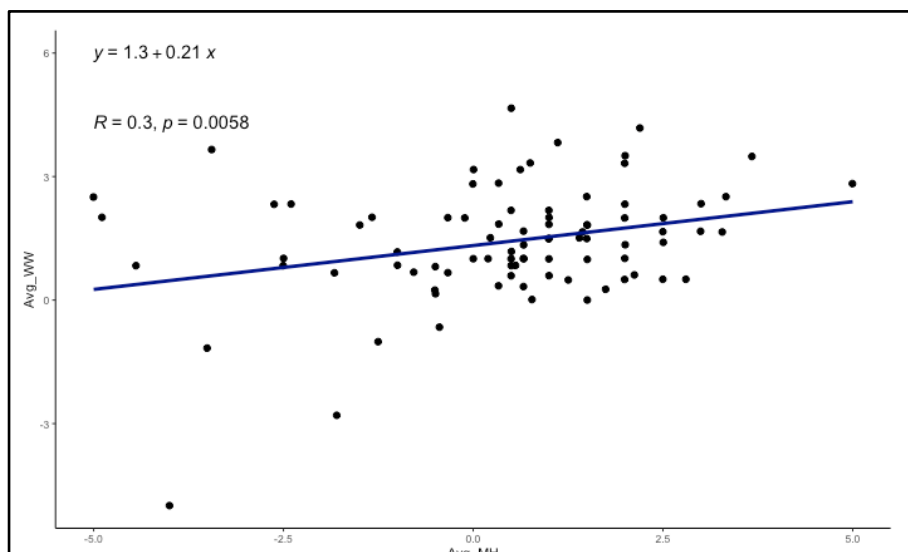
There exists a significant and moderately positive correlation between mental wellbeing and workplace wellbeing ($r = .30$, $p < .01$), while the same is true for mental wellbeing and social wellbeing due to AI use ($r = .32$, $p < .01$). However, there is a mildly negative correlation between the frequency of AI use and mental wellbeing ($r = -.11$), which is proven to be non-significant ($p > .05$). Additionally, the strongest significant correlation emerged between the frequency of AI use, and workplace wellbeing at .32, significant at $p < .01$. Thus, this delineated three correlations of interest: that between (a) workplace wellbeing and mental health, (b) social well-being and individual mental wellbeing, and (c) workplace wellbeing and the frequency of interaction with AI.

Correlations were visualised using graphs. Graph 1 represents the correlation between workplace wellbeing and the frequency of AI interaction, Graph 2 represents the correlation between social wellbeing and mental health, while Graph 3 represents the correlation between mental health and workplace wellbeing.

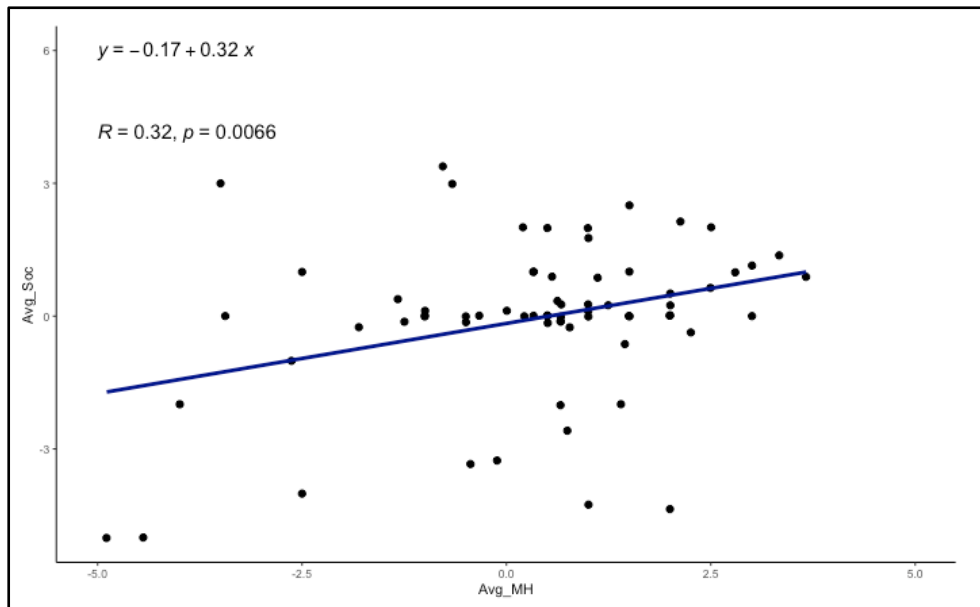
Graph 1. Relationship between workplace wellbeing and frequency of AI use.



Graph 2. Relationship between mental wellbeing and workplace wellbeing upon AI use.



Graph 3. Relationship between individual mental wellbeing and social wellbeing upon AI use.



Multiple Linear Regressions

While correlations have given us an indication of how these four variables (Mental wellbeing, Social wellbeing, Workplace wellbeing, AI Use frequency) are related to one another, it is still isolated from social context. For example, pairwise correlations do not capture the full complexity of the linear relationships between workplace wellbeing and mental wellbeing, or frequency of AI use and mental wellbeing. Therefore, studying how the relationship between these variables changes when introduced to other independent variables, and whether the relationship is still significant is crucial to extrapolate conclusions regarding AI use within a social, real-world context. Thus, multiple linear regressions were employed to study these dynamics.

All regression analyses were run on R, with packages *lm.beta* (Behrendt, 2014) and *supernova* (Blake et al., 2018), and visualised using *tidyverse* (Wickham, 2016) assisted by *pander* (Daróczi and Tsegelskyi, 2022).

The effect of Frequency of AI Use on Workplace Wellbeing: A multiple linear regression was employed to test the effect of the frequency of AI Use on Workplace Wellbeing, with education, age, and social status added as predictors. A significant regression equation was found ($F(4, 75) = 4.481, p < .05$), with an adjusted R^2 of .15. Participants' predicted Workplace Wellbeing is equal to $0.523 + 0.596$ (Frequency) + 0.043 (Social Class) + 0.310 (Education) - 0.038 (Age), where *Frequency* is coded as 0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = almost every day, and *Social Class* is coded as 0 = below minimum wage, 1 = lower class, 2 = working class, 3 = middle class, 4 = upper class, and *Education* is coded as 0 = middle school, 1 = high school, 2 = undergraduate, 3 = masters, 4 = postgraduate, 5 = post-doctoral.

Workplace wellbeing increased 0.523 units for each increase in frequency of AI use, 0.31 units of educational level, 0.043 units of social class, and decreased by 0.038 units with age. The frequency of AI use, and age of the worker emerged as significant predictors. **Table 5** summarises these results.

Table 5. Multiple Linear Regression Associations of Workplace Efficiency with Frequency of AI Use, Social Class, Education, and Age.

Coefficients	Unstandardised Estimates		β	95% CI		<i>T</i>	<i>p</i>
	B	SE		95% CI			
				<i>LL</i>	<i>UL</i>		
Intercept	0.523	0.634	-	-0.740	1.787	0.825	0.412
AI Frequency	0.596	0.164	0.378	0.270	0.922	3.643	0.000**
Education	0.309	0.182	0.246	-0.053	0.672	1.700	0.093
Social Class	0.043	0.189	0.024	-0.333	0.419	0.228	0.821
Age	-0.038	0.018	-0.314	-0.073	-0.004	-2.195	0.031*

Note. * $p < .05$ ** $p < .001$. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

The effect of Social Wellbeing on Individual Mental Wellbeing: A consideration of whether there was a significant relationship between social wellbeing and individual mental wellbeing in the absence of influence from the workplace (as observed in **Table 4.**) was analysed using a multiple linear regression test.

A multiple linear regression was employed to test the effect of social wellbeing on individual mental health, with education, age, and social status added as predictors. There was no significant relationship between mental wellbeing and any predictor variables. The significant correlation observed in **Table 4.**, is found to be insignificant upon the addition of social context viz., Education, Social status, and Age. Thus, there is no significant effect of social wellbeing on individual wellbeing upon AI use. **Table 6** summarises these results.

Table 6. Multiple Linear Regression Associations of Individual Mental Wellbeing with Social Wellbeing, Social Class, Education, and Age.

Coefficients	<i>Unstandardised Estimates</i>		β	95% CI		<i>T</i>	<i>p</i>
	B	SE					
				<i>LL</i>	<i>UL</i>		
Intercept	0.307	0.770	-	-1.233	1.847	0.399	0.691
Social Wellbeing	0.227	0.126	0.224	-0.026	0.482	1.794	0.078
Education	0.022	0.244	0.016	-0.465	0.508	0.089	0.930
Social Class	0.132	0.243	0.068	-0.355	0.619	0.542	0.590
Age	-0.011	0.025	-0.082	-0.062	-0.039	-0.456	0.650

Note. * $p < .05$ ** $p < .001$ *** $p = 0$. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

The effect of Workplace Efficiency and Social Wellbeing on Individual Mental Wellbeing: A multiple linear regression was employed to test the effect of workplace efficiency and social wellbeing on individual mental health, with education, age, and social class added as predictors. A significant regression equation was found ($F(5, 57) = 3.988, p < .005$), with an adjusted R^2 of .19. Participants' predicted Individual Wellbeing is equal to $-0.502 + 0.509$ (Workplace Wellbeing) + 0.250 (Social Wellbeing) - 0.132 (Education) + 0.251 (Social Class) - 0.002 (Age), where *Frequency* is coded as 0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = almost everyday, and *Social Class* is coded as 0 = below minimum wage, 1 = lower class, 2 = working class, 3 = middle class, 4 = upper class, and *Education* is coded as 0 = middle school, 1 = high school, 2 = undergraduate, 3 = masters, 4 = postgraduate, 5 = post-doctoral.

Individual wellbeing decreased 0.503 units for each increase in workplace efficiency of 0.510 units, 0.275 units of social wellbeing, 0.251 units of social class, and decreased by 0.132 units of education and

0.003 units of age. Workplace efficiency and social wellbeing emerge as significant predictors of individual wellbeing. **Table 7** summarises these results.

Table 7. Multiple Linear Regression Associations of Individual Mental Wellbeing with Workplace Efficiency, Social Wellbeing, Social Class, Education, and Age.

Coefficients	<i>Unstandardised Estimates</i>		β	95% CI		<i>T</i>	<i>p</i>
	B	SE					
				<i>LL</i>	<i>UL</i>		
Intercept	-0.503	0.727	-	-1.959	0.954	-0.691	0.492
Workplace Wellbeing	0.510	0.140	0.422	0.229	0.791	3.636	0.000***
Social Wellbeing	0.275	0.117	0.268	-0.040	0.510	2.346	0.022*
Education	-0.132	0.230	-0.097	-0.592	0.327	-0.577	0.566
Social Class	0.251	0.227	0.127	-0.204	0.705	1.104	0.274
Age	-0.002	0.023	-0.019	-0.003	-0.049	-0.118	0.906

Note. * $p < .05$ ** $p < .001$ *** $p = 0$. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Discussion

Initial Observations

When considering the impacts on wellbeing due to AI use, the frequency is an important variable that defines the extent of engagement with AI tools and can be studied to isolate correlational and potentially causal effects on different aspects of wellbeing. First, the correlation between AI use and wellbeing in the workplace ($r = .32$, $p = .003$; **Table 4.**) suggests that the implementation of AI tools to assist employees significantly increases their productivity. It is likely that AI aides to otherwise technical work reduces cognitive load on employees, enhancing their workplace experiences and increasing satisfaction. This echoes research by Shaikh et al., who, through a socio-cognitive approach, identifies that AI positively impacts workplace productivity and workers' mental health (2023).

Addition of control variables (Age, Education, Social Status) to this relationship gave us context-specific insights. Within a largely European sample, it was identified that both age ($p = .031$; **Table 5.**) and the frequency of AI use ($p = 0$; **Table 5.**) significantly affected workplace productivity and wellbeing. Interestingly, the effects of age seem to inversely impact workplace wellbeing ($\beta = -.314$, $CI = [-.073, -.004]$). This indicates that it is likely older employees do not get positively impacted by workplace AI tools. This could be due to a multitude of reasons, from unfamiliarity with technological advancements, to the automation of jobs that is slowly resulting in layoffs particularly affecting older workers. Nevertheless, this significant relationship would benefit from further study.

The second relationship that was inspected was the significant positive correlation between mental wellbeing and social wellbeing (**Table 4.**). Upon adding age, social class, and education as predictors, this relationship ceases to remain significant. However, interestingly, when workplace wellbeing is added to this model, the effects of social wellbeing become statistically significant at $p < .05$. This suggests that methodologically, the previous model had a case of omitted variable bias, and adding more controls resolved the issue. It also highlights the inter-dependence and intersections between domains of wellbeing. Both increased social wellbeing and workplace wellbeing due to the usage of AI significantly causes the AI for personal use to positively impact wellbeing. Implying that impacts of AI across the three determinants of well-being may depend on the person using the tools, and their general perception of AI.

Interview

In this section, we return to a discussion of qualitative data and rank interviewees based on two metrics: well-being and effectiveness. We plot these two scores on a two-dimensional plane to make an overall assessment and predict future well-being outcomes from our interviewees' leadership.

Leaders' Well-being Prioritization

Leaders' prioritisation of well-being depends on two factors: their values and their organisations' aims and interests; in our data we observe that often these converge. We rank interviewed leaders on a 10-point scale. These rankings represent leaders' prioritisation of well-being relative to each other, not in general; it also does not coincide with whether leaders' considerations about positive well-being actually lead to positive outcomes (this is to be assessed later when comparing with survey data).

Business leader 1: 9

This leader conducts detailed assessment of both short and long-term risks (PESTEL) to society from AI, demonstrating a nuanced understanding of well-being which he incorporates into leadership decisions. He also described the potential of AI to create ideal well-being conditions: abundance, freedom from the need to work, more time for relationships and meaningful activity. He seemed to make decisions in his company to facilitate and enable this positive AI future. He includes well-being considerations in business decisions. Specifically, he cited a case where his company produced an AI solution that was suboptimal for well-being. He altered the product to prevent this outcome. His consideration of present AI risks and his vision to shape the AI future to promote optimal well-being outcomes warrants a score of 9.

Business leader 2: 2

This leader's prioritisation of well-being contrasts starkly with the previous leader's despite both being from the business side. She offered limited comments on fundamental rights, security, privacy and trust and democracy; these considerations were not priorities in her decision-making. She also described some AI innovations (targeted ads, "consumer winning" solutions) in her company that could potentially harm public well-being by creating behavioural and excessive consumption choices. She had one major well-being consideration: complying with regulation and ethical standards, but this seemed to be by obligation rather than choice. She also described the potential for AI to lower costs and improve products' sustainability (by utilising local ingredients); this could lead to good well-being outcomes, but again seemed to be imposed by organizational efforts to be seen to comply to ESG regulations and appeal to environmentally conscious consumers.

Policymaker 1: 5

Policymakers have a duty to advocate for constituents' interests; so by virtue of their position they should not make decisions that actively harm public well-being (CITATION). However, in their role as managers of stakeholder interests, some policymakers may be more inclined to listen to stakeholders in business and industry than in civil society, as was the case with Policymaker 1. He also focused on innovation and fostering AI development in Europe, rather than risks to public well-being from its use; he argued the industry was overregulated. This seems to imply that public well-being falls lower down in his

priority list. However, this policymaker did claim that this approach would lead to better well-being outcomes in future; meaning, well-being came into play as an indirect, long-term goal.

Policymaker 2: 7

Policymaker 2 prioritised privacy and safety from AI more than Policymaker 1; specifically, she was unwilling to make tradeoffs between AI innovation and development and risk. She mentioned she prioritises along party lines, and the S&D (Socialists and Democrats) tend to be more well-being oriented than the EPP (European People's Party, of Policymaker 1). She placed an emphasis on protecting the public from risky AI applications (e.g., predictive policing) and ensuring individual data is fully protected and private. However, it is questionable whether this approach is good for well-being in the long-run, since it may prevent valuable and welfare-enhancing AI innovations from materialising.

Policymaker 3: 6

This policymaker's aim was delivering the Von Der Leyen's Commission's aim of "human-centric AI"; this puts public well-being as a consideration in his decision-making. However, this policymaker also seemed focused on balancing stakeholder interests and felt a duty to incorporate all perspectives, including those that may push for less well-being oriented legislation. One positive aspect is that he emphasized regulating AI that posed a direct threat to human safety, while allowing for a less regulated environment for unthreatening AI to promote experimentation and innovation. This has some risks, but could lead to broadly positive well-being outcomes.

Leader effectiveness

Leaders' effectiveness is influenced by their power to make decisions, use of evidence, specificity and measurability of their goals, and success at prioritisation. In assessing the effectiveness of their decision making, transparency is key, since without clarity on their aims it is challenging to come to accurate conclusions about whether they achieved their targets and if not, where they made mistakes.

Business leader 1 score: 9

The leader's decision making is highly evidence-based, guided by SMART goals, and he has the autonomy to make decisions for his company even after its acquisition. Having multifaceted objectives beyond just efficiency and profit-making, could present challenges when trying to prioritise what is most central to his business. This might cause him to spread his business endeavours broadly reducing probability of success in any one ambition. He is transparent in his decision-making and open to contributions from his employees, despite not being able to articulate a set structure for his general decision-making.

Business leader 2 score: 8

The leader bases her decisions on data and established business frameworks which helps her track progress within the business and achieve the set targets quicker. Given the global role and size of business, the leader mentioned challenges in prioritisation do not derive from her decision-making structure, but from the complexity of the role. The leader gained more agenda setting power as she became a senior manager, yet

it seemed that at times she was constrained by institutional structures and culture. Given the hierarchy, inevitably her power would also be restricted by the priorities of the top leadership team, board, and shareholders. The leader was less transparent especially in conveying the business' true priorities, and their impact on the environment and the consumerist culture. However, her general decision-making framework was enough to warrant high levels of effectiveness.

Policymaker 1 score: 5

The policymaker utilised stakeholder interests as evidence but they weigh such interests intuitively and according to their group's priorities. This could increase their fallibility in pushing for legislation that caters for all interests. The targets set by the Parliament are not as easily quantifiable and they are not monitored through measurable targets by the MEPs. The leader had limited agenda setting power as a MEP, as he was constrained by the Parliament's agenda and could not issue new legislation. There was some lack of transparency in balancing out public interests with the interest of the leader's party.

Policymaker 2 score: 4

The political adviser's decision making lacked quantifiable evidence and predictive power. The policymaker thought about the benefits and risks of AI mostly through the lens of AI's current applications. Far from being led by clear and objective targets, she mentioned the disproportionate trust given to the MEP working on the file due to the impracticality of following everything (consultations, discussions, and developments) oneself. The policymaker mentioned her priorities to facilitate AI development in a way that respects fundamental human rights but also acknowledged the limited power of the Parliament to determine the regulatory foundations. For example, the Commission determined to view AI regulatory policies through product safety regulation. We further note the high level of opacity in her decision-making, as she showed signs of defensiveness when questioned about the roots of her priorities. This suggests that her decision-making might be steered by party interests through a significant extent.

Policymaker 3 score: 7

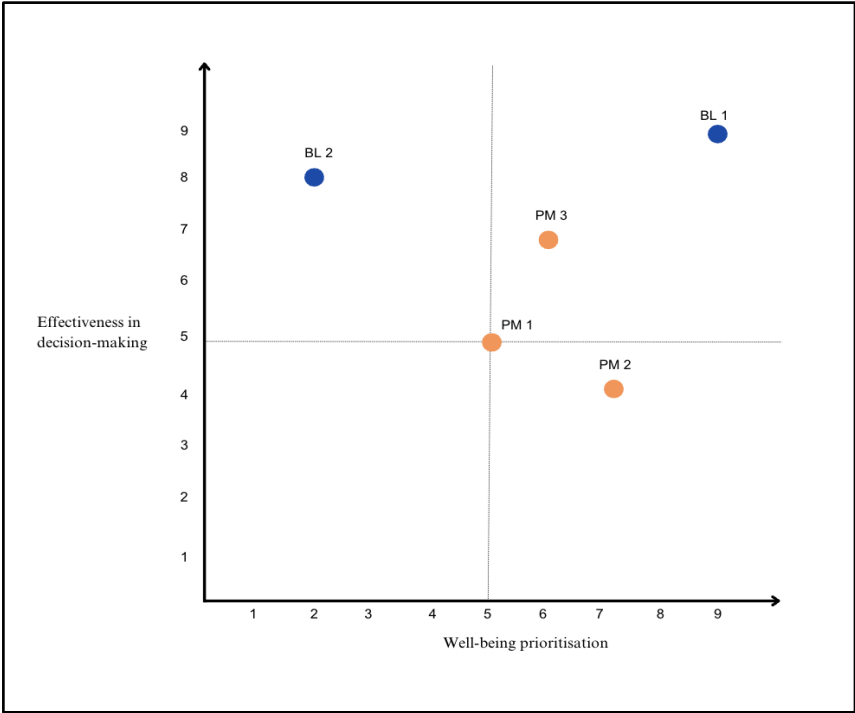
The policymaker is the most effective decision-maker amongst our policymaker interviewees. He utilised evidence more effectively through structured consultations as a part of his role at the EU Commission. The process of decision-making was still not guided by specific and measurable benchmarks but more so through qualitative evaluations of the legislation's effectiveness. Therefore, it was not as effective as the business decision-makers. The policymaker appeared to be very transparent in explaining how he balanced out stakeholder interests and demonstrated his mostly objective and independent stance towards legislation.

Overall Scoring and Expected Well-being outcomes

We combined interviewees’ well-being prioritization and effectiveness score in the following graph. We observe that Business Leader 1 is the most effective and well-being oriented. His contributions to the AI landscape should shape the development and use of the technology for positive well-being outcomes. On the other hand, Business Leader 2 is highly effective, but much less well-being oriented. Her contributions may have negative implications for well-being, given she will be effective at achieving her goals even if they are suboptimal for public welfare.

On the policymaker side, Policymaker 2 was the most well-being oriented, but the least effective; meaning her efforts may result in misdirected policies that, although well-intentioned, are unlikely to achieve positive well-being outcomes. Policymaker 1 was in the middle for both effectiveness and well-being orientation; his decisions’ effects on well-being are likely to be broadly negligible. Whereas Policymaker 3 was slightly more effective and well-being oriented than Policymaker 1; we predict his decision-making to yield an overall positive effect on the public.

Further research could evaluate leaders using this framework. Leaders that fall into the first quadrant would make decisions yielding positive well-being outcomes because they prioritize well-being and are effective enough for their decisions to achieve their intended outcomes. Those in the second quadrant are likely to contribute to worsening of well-being: they may have priorities that come into conflict with public well-being, and they will be effective in achieving these. In the third and fourth quadrants are the ineffective leaders; their well-being considerations are less relevant, since they are ineffective, and their decisions are not necessarily coherent with their goals, so they effect on well-being will be ambiguous (and likely have some randomness). A thorough assessment of relevant leaders in political, business, and other major institutions in the AI space could provide input into the future of AI development.



Integrated Discussion

We combine analysis from interviews and survey data to assess whether leaders are accurately considering public wellbeing. We define accuracy as the resemblance between leaders' perception and our findings (from survey data) on the effects of AI on public well-being. We use the thematic analysis from our interviews, contrasted against mean values and correlations from our survey data, to assess the accuracy of leaders' perceptions of public well-being. We divide this assessment along the three well-being determinants we've focused on throughout the paper: mental health, social relationships, and work.

Mental health and Social relationships

On average, survey respondents indicated a slightly negative effect of AI on both their mental health and social relationships. In terms of the regression coefficients for these factors, they were not statistically significant, so our data does not provide information about their change with increased AI use. In our interview analysis, leaders did not isolate the effects of AI on mental health and social relationships, it was not relevant to them as a specific consideration. On the one hand, this indicates accuracy in leaders' prioritisation, since survey values for mental health and social relationships were not particularly high, meaning it has a small effect on public well-being and leaders may be justified in not explicitly prioritising it.

However, two themes in our interview analysis are connected to mental health and social relationships: 'Purpose in Life: Role of humans in a digitalized realm' and 'Fundamental rights, Safety, and Privacy'. For 'Purpose in Life', business leaders stressed AI's potential to increase efficiency, giving people more time for meaningful activity, which would contribute to a greater sense of purpose and fulfilment. This is linked to positive outcomes for both mental health and social relationships. However, these perceptions are incoherent with our survey data, in which the public provides a slightly negative evaluation of AI on their mental health and social relationships.

On the other hand, 'Fundamental rights, Safety, and Privacy' was generally the most pressing well-being concern for policymakers. Threats to rights and safety could deteriorate social relations, and increased surveillance may have a negative effect on mental health (evidence?). All in all, these concerns were broadly overstated, especially by Policymaker 2, who anticipated a much greater level of harm from decreased privacy than survey respondents expressed (in relation to their mental health and social relationships). Indicating policymaker priorities may be misaligned: excessively emphasising a factor that is not as relevant for the public. Policymaker 1 did not over prioritise these factors, although it was still part of his considerations; thus, we may describe his wellbeing considerations as more coherent and accurate than those of Policymaker 2. Policymaker 3 was somewhere in between on this front.

Work

Survey respondents expressed a positive evaluation of the effects of AI on their work, with some citing enormous efficiency gains. The effects of AI tools on work were positive on average and increased with use. On the business side, leaders were perceptive of these effects and consistently mentioned increased efficiency from AI as a key gain. Both business leaders emphasised it would allow people to spend less time on mundane tasks and more on meaningful work. Although Business Leader 1 focused on benefits to broader society, whereas Business Leader 2 focused on their employees.

In contrast, Policymakers 2 and 3 did not focus on the efficiency gains from AI. Especially Policymaker 2 neglected AI's role in improving work, demonstrating a divergence between her vision and the public's experience. Policymaker 1 considered the effects of AI on work and aimed to foster innovation which would promote these efficiency gains. His conceptualization of the effects of AI on work and its potential to improve people's well-being through the world of work was more in line with our survey data than Policymaker 2 and 3's.

Overall, we found variation in the accuracy of leaders' understanding of AI's effects on public well-being. From combining prioritisation and effectiveness we also find variation in the expected well-being outcomes of their decisions. However, contrary to our initial beliefs, variation is not determined by interviewee type. We predicted that policymakers would put more consideration into well-being factors and be more attuned to the implications of AI development on public well-being, but this was not the case. In fact, all policymakers prioritised public well-being less than Business Leader 1 and they were less accurate in their well-being predictions in addition to being less effective decision-makers. Business Leader 1 is an example of a business leader that diverges from the traditional pressures of stakeholder capitalism, in that he does not aim to maximise profit, but

In light of our evidence, we update our beliefs about the extent to which corporate and governmental organisations incorporate well-being into decision making, and their effectiveness and accuracy in doing so. The decision-making landscape is more complex than we imagined: well-being considerations and their accuracy do not depend on the type of leader or the nature of their organisation (governmental vs corporate), but their beliefs about the world, which shape their priorities, values, and approaches to understanding public well-being. All these determine whether leaders will have accurate considerations about how their decisions on AI products and legislation affect the public and whether they make and adjust their decisions depending on public well-being outcomes.

Conclusion

In this paper we set out to find to what extent corporate and governmental organisations involved in AI effectively incorporate public well-being into their decision making. Our study was motivated by the potential of AI to greatly impact human welfare and our study design was influenced by the crucial role that social actors like government and corporate leaders play in shaping the development of science and technology, including AI. We aimed to understand whether leaders were considering public well-being when making decision about AI, and whether these considerations coincided with the experience of the public. We used a mixed methods approach: conducting quantitative analysis of survey data on public well-being and thematic analysis of interview data from policymakers and business leaders. We found that AI use has had significant positive effects on workplace efficiency, and these effects were most accurately perceived by business leaders and one policymaker. The effect on mental health and social relationships was ambiguous, yet some policymakers over-emphasised the potential negative consequences of AI on these areas.

Our study was severely limited in scope due to our lack of time and resources. We were not able to survey or interview as many people as would've been optimal. More interviewees would've allowed us to get a better understanding of the AI decision-making landscape, since 5 interviews are insufficient for this. A greater sample size for our survey may have allowed us to estimate statistically significant effects of AI use on mental health and social relationships, since we only obtained this for workplace environment. It may have also decreased the potential for bias in our sample, making our results more robust. Additionally, more time to collect responses may have allowed us to gain a better understanding of the effects of AI on society – since most effects are unlikely to have fully materialized at this stage.

In terms of positive aspects of this paper, there is some merit in attempting to research a recent phenomenon that may have transformative effects on society, as there tend to be gaps on research in emerging technologies. We also attempted to change the narrative and mode of social science research by using well-being metrics instead of traditional measures of economic impact like money or time. Finally, we were able to interview significant players in the AI landscape, in spite of our disadvantaged position (relative to professional researchers) as undergrad researchers.

The following policy recommendations stem from our analysis. First, we recommend that leaders increase their valuation of well-being when conducting cost-benefit analysis in decisions relating to AI (and more generally), so that the effects of decisions on public well-being are not neglected. Second, we recommend that policymakers increase their effectiveness by adopting some of the tools of business leaders in decision-making: particularly they should aim to quantify their goals and determine precisely what is required to achieve them. Third, we recommend that policymakers focus on increasing their accuracy of perceptions on public well-being by surveying the population, rather than deferring to their intuitions or “expert opinions” on what the public wants and experiences.

Overall, leaders have a choice between directing investments towards innovations that are truly welfare-enhancing or that promote impulsive consumption choices, harmful for human welfare. With a technology as powerful as AI, it's development cannot be left to the benevolence of business leaders. Thus, policymakers should impose greater scrutiny over businesses aiming to utilize AI for expanding their market share, at the cost of consumer health and welfare.

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Appendix 1

Informed Consent

Impacts of Artificial Intelligence on Mental Health, Relationships, and Work

Informed Consent

You are invited to participate in a research study about artificial intelligence's impact on well-being. This study is being conducted by 5 Laidlaw Scholars at London School of Economics and Political Science.

In this study, we define AI tools as products or services that utilise artificial intelligence technology to enhance human capabilities or assist individuals in their everyday lives. One example of such AI tools are AI Chat bots, such as OpenAI's ChatGPT, or writing softwares like Grammarly. Your participation in this survey is essential; it will enable us to discover valuable insights on the societal impacts of AI technology.

To participate in this study you must have used AI tools **at least once** for any purpose, to be able to answer the survey questions with competency.

The survey will comprise a series of questions asking about your experiences and perspectives on AI within three domains of well-being: mental health, social and family relationships, and work.

Your responses will be treated with the utmost confidentiality and will be used solely for research purposes. Participation in the study is entirely voluntary. You may skip any questions you do not want to answer and withdraw from the survey at any time.

Study findings will be presented only in summary form and your name, or any identifiable information will not be used in the report. While the investigator(s) will keep your information confidential, there are some risks of data breaches when sending information over the internet that are beyond the control of the investigator(s).

If you have any questions about this study, please contact: i.l.dyonmez@lse.ac.uk.

If you have any concerns or complaints regarding the conduct of this research, please contact the LSE Research Governance Manager via research.ethics@lse.ac.uk.

Please read these three statements and tick the checkbox below if you agree...	
I have read this message and had the opportunity to ask questions.	<input type="checkbox"/>
I agree to participate in the survey.	<input type="checkbox"/>
I understand that my responses will be kept confidential and anonymous and that my personal information will be kept securely and destroyed at the end of the study.	<input type="checkbox"/>

*Please print or save a copy of this form for your records. *

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Appendix 2

Interview Guides

Two separate interview guides were made for (a) business executives, and (b) policy makers. Context-specific modifications were made during the interview, and the semi-structured nature allowed us to adapt and personalise questions as necessary. The general interview guides are provided below.

All interview guides were created upon researching aspects of policy making and decision-making in leadership positions, with each guide further being tailored with additional research concerning business leadership and policy-making decisions.

Interview Questions for Business Leaders

In formulating questions for business leaders, research from Graham et al. (2022), Heimann & Kleinmann, (2020), and Liden & Antonakis (2009), Vroom & Jag (2007), Zaccaro, Green, Dubrow, & Kolze, (2018), were used to frame questions regarding corporate leadership and corporate culture.

Research from Papadakis and Barwise (2002), and Buckley and Casson (2019) were used in forming questions around strategic decision making in corporate workplaces and positions of leadership.

The initial list of general questions that every interviewee was asked is as follows:

Q1) Could you introduce yourself and your role within the company?

Q2) Could you explain the different steps in the decision making process?

- *Potential Follow-up: How are the employees and the wider firm included in the decision making process?*

Q3) What are the top 3 value drivers in your firm? How do these influence the decision making process?

Q4) What are the questions or problems, if any, that you think generative AI can help resolve and what kind of benefits can these have for the wider society?

Q5) What are the key risks, if any, related to your products and services?

If they mention risks...

Follow-up (if they don't mention wellbeing): What about wellbeing? Are there key risks related to wellbeing? Are these factored into decision making?

If they do not mention any risks...

Follow-up: What is your opinion on ideas that have been expressed about potential risks of AI?

Q6) How do you, if at all, factor these risks into your decision making process?

- *Do you take any actions to minimise the risks of your products?*
- *Would certain risks cause you to forgo certain investment decisions?*

Q7) Was there a situation in the past where you identified welfare-related problems in one of your products?

Q8) Could you tell us what effective business decision making means for you with an example and who would be the different stakeholders involved in the process?

Q9) To what extent do you think the regulations and policy help maximise welfare benefits and minimise welfare risks?

- *What are your perceptions about regulations in terms of the product development process and broader decision making/leadership?*

Q10) Is there anything else you want to share related to the role of welfare in decision making processes in your company?

Interview Questions for Policymakers

Research on policy making, policy decisions, and decision-making within the EU were considered before creating the initial list of questions for AI policymakers, and MEPs. While each interviewee was

thoroughly researched, and questions specific to their background was asked by the researchers, the list below offers a general set of questions created for policymakers, MEPs, and commissioners involved in the policy process surrounding AI development, regulation and use.

Q1) Could you introduce yourself and your role within the institution?

Q2) How would you define policy problems and what is the process in the (Parilament, Commission) to tackle these problems?

- *Follow-up: What is your role as commissioner and policy leader in this process?*

Q3) Do you consider AI a policy problem? If so, what are its specific risks? How are you tackling the most negative aspects of this problem?

Q3) What benefits, if at all, can AI have for the EU? What is the role of policy, if any, in capturing these positive impacts?

- *Follow-up: Specifically, how will the EU AI act regulate companies to make decisions to harness AI's potential for good?*
- *Can you provide examples of successful policies that have been enacted to drive responsible AI adoption?*

Q4) What are the main risks, if at all, that AI causes and do these risks qualify as policy problems?

- *Follow-up: Can the short-term electoral incentives inhibit prioritising long-term issues, such as AI regulation?*

Q5) How do you incorporate the perspectives of different interest groups? How do you balance the interests of AI innovators/entrepreneurs and the public?

Q6) How do you ensure that policy is effectively implemented with the highest net benefit? What considerations come into play, in general?

- *Follow-up: And specifically for AI?*
- *How are you looking to garner support from the business community on policy on AI risk mitigation?*
- *Are there any ways of framing effects of AI as urgent, relevant, and less ambiguous for people?*

Q8) What is your process of evaluating success and indirect impacts of policies? (policy evaluation process)

- *Follow-up: How will you do this for AI?*
- *Follow-up: In this policy evaluation stage, how do you, if at all, factor in consequences for the public and what would be the time frame that you would consider in the cost-benefit analysis?*
- *Can ask a question about if and how they take into account long-term analysis of benefits and costs.*

Q) What is your goal, as a leading policymaker,

Q) To what extent do you consider effects on the public in the EU?

- *Follow-up: ask more explicitly about any indications of democratic representativeness to gauge whether they take into account public welfare effects in the individual EU member states.*

Q10) How do you, as a leader, mitigate conflicting interests in policy making between different entities (e.g., EU Council, Commission, and Parliament)? How do you aim to resolve these?

Q11) From your perspective what specific considerations are important in making an effective AI policy?

- *See whether they reference transparency, accountability, fairness, or the public welfare.*

Q12) Is there anything else you want to share related to the role of welfare in decision making processes in your role as commissioner?

Q13) Have you done any public consultations? With who? What have been the outcomes of these consultations?

Appendix 3

Survey Instruments and Survey Data

Appendix 4

Interview Codes

To preserve the anonymity and privacy of interviewees, the appendix only contains the anonymised codes of each interviewee. Company and personal identifiers are removed and replaced with generic labels. The gender, age, or personal affiliations of interviewees are also not included in this section.

Interviewee 1

Understanding Interviewee's Role	Role	Interviewee 1's Role Within Unilever	...currently I am in the global team leading our digital transformation agenda and I'm also responsible for our digital teams in terms of any capabilities and strategy required to be landed from a holistic point of view.
Interviewee's Decision Making	In general	Data-based Decision Making	The answer to your question, of course, is to analyze people's data in terms of the digital skills, experiences, and capabilities we want to see in the company.
		3 Bubbles of Focus	so the first bubble is about people capabilities. Second bubble is about tools, systems and processes, and the last one of course is my current responsibility. I'm also doing quite a lot of Comms and engagement
		Setting of Targets	So in my current role, of course, the definition of priorities and targets are more enabling and influencing targets.
		Importance of Prioritisation in a Global Role	I have to be sharper in terms of prioritizing what to do where and when and with whom.
		Business Planning	Overall, we are using the QBR's . And at some agile methodologies as well. to see the big picture and to make choices in terms of the things that will make the biggest impact.

	Strategies Related to AI	Internal Rule Setting	Let's say the rules and regulations and there are specific targets in terms of building the guidelines and allowing everybody to follow that.
		Guiding Applications of AI through focused KPIs	By geography and by function specific definitions and KPIs to drive application of it.
		Experimenting Future Applications of AI: Roadmaps for Testing	to drive pilots and the test learn agenda to experiment some of the future fit stuff. And when it comes to experimentation as well, Unilever was usually developing roadmaps to identify the key suppliers and technologies that we wanna test in a specific market or a function.
		AI Objectives @ Unilever	how we define the key objectives in Unilever to scale use of AI is either through efficiencies or through growth. You use the AI technology to do better decisions in procurement for anything you buy, but when it comes to marketing and sales functions, it allows you to make better decisions to drive growth.
	Unilever's Core Values	Purposeful Walk Towards Sustainability	So making sustainability a common marketplace for any kind of consumer that is served in the world and of course in order to drive this vision. Unilever talks about a purposeful people purposeful brands and a purposeful company and any kind of decision.
AI's Benefits	AI Applications @ Unilever	Huge Data Analysis	So I think it's a huge opportunity to enable analyzing huge amounts of data to be moved to business faster.
		Research & Development	To be honest, it helps us to combine more than like thousands of different data sources into one pot to 1st identify key insights, group them, turn them into key ideas, and it also allows us to make tests for any kind of an innovation that we think is consumer winning...it's identification and validation of thoughts, ideas and insights and turning them faster into innovations, meaning innovations.
		Developing Product Quality	Any kind of AI application and use in the company is to help Unilever be better uh and add more value to the consumer with any kind of products that we develop. So the the product has great quality, amazing smell, the right local ingredients that are applicable in a specific market or you develop an advertising campaign by using these tools that are more relevant that are more personalized, that are more segmented.
		Better and Channel Specific Advertising Development	You do everything for like different channels and different advertising platforms in a different way so that AI tool also helps you to automate that ... So what am I learning specifically from that creative asset or

			any kind of advertising material with the likes of the consumers and have then this enables me to develop better advertising in the future.
	Benefits for Consumer	Self-Development, Social Networks & Greater Well-being	Uh, for the consumers, whether or not it's about self development, well, being training and using different ways to socialize, seeing stuff that's more relevant to them, et cetera.
AI Risks	Risks for Consumer	Privacy Concerns	One is uh consumer privacy for sure.
		Ethics Issues	is have does the industry regulate itself? Uh to make sure any kind of. Consumer behavior? Uh, in digital channels is visible to the consumer and the consumers aware. Uh. And consumers making choices by seeing what it means to use or ask questions
		Data Transparency	how that data is being captured, collected and used for other purposes. So really making sure that this is transparent for the consumer for companies like us through the institutions and associations that enable that.
	Consumer Trust	Training Employees on Ensuring Consumer Trust	The consumer Trust is part of the training programme in the literacy module, so it is part of the licence to operate.
		Global Frameworks for Protecting Consumer Privacy Alongside Local Guidelines	So while we have the global framework in terms of what needs to be in place, who are the right key contact people, what's the still goin a market? Ohh, we also have variations of different scripts and languages in place depending on the. Regulations that are applicable for specific markets.
	Long-Term Risks	Future of Work Workstream	Ohh, we have the future of work, work streaming, Unilever. Ohh that not only. Ohh thinks about how you deliver will be future fit with the new role definitions. Ohh but it also impacts workplace employee engagement. Even the type of meetings that you will have.
Personal Development & Staying Relevant to the AI Age		Some rules may become redundant, but the number of roles at the end of today will probably be the same or even higher, so it becomes a key question of how can I stay relevant. Ohh how can I uplift myself? How can I continue to survive in an A I net world and that becomes the key positioning of any kind of upskilling. Any scaling agenda we have in the company as well stay relevant.	

		Consumerism & Trust	The second bubble can be about like consumer being aware and having the full trust of living in this new world.
		Societal Risks of AI: Polarisation	And the wider impact can be, of course on societies, and that is more on the societies becoming more polarised, more turbulent.
		Importance of Embracing Purpose in the Face of Long-term Risks	But when it comes to you, uh, the company purpose, the Unilever purpose is of course to be available to all the consumers in the world. Ohh and really provides a equality inclusivity. Ohh so that also is a key purpose for Unilever in a world that's becoming even more turbulent and bipolar.
		Overconsumerism a Huge Generalisation?	So there are so many different things that you need to consider when it comes to consumption levels. Ohh, affordability pricing. The economic situation in the country, the mood of people, even in some instances, whether has a fundamental impact in terms of how much ice cream can be sell. So I wouldn't want to Oversimplify to give a response to this question, and I would urge you to think of other factors when it comes to making a statement that a I will boost consumption.
		Potential Risk of Impulsive Decisions for More Prosperous Societies	So as I said there are so many indicators of. Ohh consumption and it would be quite an overstatement in my perspective to say a I will drive consumption because everything will become super impulse like our Click to buy yes, but it's not applicable for everybody. Maybe. For a smaller percentage of the population, it's a yes, but for some geographies, it said no.
		Unilever Positions Products According to Consumer Profiles does not Really Consider Impact of High Consumption	Measurements and targets in place in terms of consumer segments, affordability and how we position our brands to different sorts of consumers. Ohh, of course that's in place, but not much with the consideration of impact of a I on consumption to be honest.
Business Adaptation Considerations	Upskilling	Ensuring Mastery by Employees using AI Actively in Their Roles	For selective people in the organization who are ahead of others who need constantly skilling because these people are the ones who are piloting, you are who are future proofing technologies.
		Additional AI Training Opportunities	the second one what we try to do in this space is help our people gain on the Jack experiences and we do this through some either like internal competitions or master class sessions, close group virtual classrooms for people to really deep dive into usage of it, case studies etcetera.
Role of Regulations	Within Unilever (Internal)	Two Types of Regulators: Legal and Technology Terms	One, of course, is through our legal teams. Um and any kind of regulation which is related to? Oh. Oh, trust ethics and privacy. Ohh and the second sort of uh regulation or any kind of a

			regulatory relationship we have is through the technology teams we have and of course you can also assume that legal and the technology teams are working quite closely because some of these are codependent or they are shaping together.
		Targeting both Understanding Industry Trends and Shaping Upcoming Regulations	A to keep an eye on the things that are changing and has implications for us today and also to help contribute at an industry level. Ohh in terms of shaping up the upcoming regulations so both of these work streams are in place in Unilever, either from the more legal. Ohh. Perspective or advertising perspective or from the technology perspective.
		Assessing Regulatory News and Positioning Business Accordingly	And we take action accordingly in the recent ones, there wasn't much that was impacting our business, but there is an assessment committee as part of that value stream to provide guidance to the business.
Regulatory Limitations		Limitations for Data Travel Across Countries	We can't use some of the global tools so that our local versions of that and the data cannot travel.
		Geography Specific Communication Platforms	Some country regulations using some of the Microsoft tools is even this is a challenge and for a global company you would expect all of your people to use the same chat tools emails. Ohh so at times even there are even countries that these kind of employee solutions are different. So there is a huge stick guidance in Unilever to all the regulatory requirements.
Engagement with Regulators		Hosting Open Forums with Regulators	We get together with these regulators to have open forums most of the time they are open to listen to some of the companies like us to capture experiences which is great. They capture feedback on the challenges on the things that they may miss.
Wellbeing & Regulation		Working together with World Federation of Advertisers for Responsible Advertising	A part of The Pioneers of some selective companies, for example, develop a responsible advertising framework...Ohh, specific regulation, but the Unstereotype alliance. Ohh is another one that Unilever is also part of or... That Unilever is also part of that Global alliance as well. Ohh so these are all examples that we've been. The three to five advertisers or companies in the world to initiate together and talk to Co create success.Ohh in terms of trust and respect.

Interviewee 2

Own Opinions	Development of AI	Role of Europe in the AI space	So, for me, it's quite important, if we are regulating something, that this is not simply innovation and that we might be also able for the European industry to enable more in supporting and so on.
			This is my interest because I think we are somehow third state of World states as Europe and so therefore we need to enable and come forward to catch up with the data and tech companies.
		How humans should develop alongside advancing AI	So we need to be careful. I think the best answer for this one is education. Good education. Improve the education and also try to direct a bit more. So if you are in the future, training people in something where you might be redundant because of AI, then it's not very intelligent by humans in doing so. That's why it would be better.. so it will create new jobs in a totally different world, service orientated and informatich (technological).
		Why we shouldn't stop AI	So of course I'm expecting self-driving cars coming in ten years because I'm too old and to be driving by my own. So no, there we have a lot of chances. But so far I don't know if this is benefiting everyone. But smart farming, green tech, self driving car - AI is a fundament of everything. So that's why we shouldn't stop AI.
	Crime	Case for facial recognition	So just for instance, the facial recognition yes, there are technological solutions in place where only the machine can detect all this is false, super criminal and we have to get them out of the street. And nobody else. So, this is from my point of view, because then the others are always arguing... It's not possible to have any kind of solution; but they are not open minded, they see just a danger, everything might be in an unfriendly state and so we will misuse things and so on. So this is the argument always what we are facing.
		What they thinks vs. what their opposition thinks	If you're coming to child sexual abuse in the internet, they are not open, they are just saying oh no, everything's digital rights and we can't control and blah blah blah, but the problem is growing and they do not have a solution. Just defending your digital rights. This is not what I have learned as a lawyer. All these rights has to be balanced.
		Competence of the legislators to tackle crime	Then as you can see on social media it's so hard now to get rid of criminal, or not legitimate content from platforms. Because really with the same argumentation on mass surveillance and freedom of expression and so on. So if we are not doing this from the beginning then we might be in a position where we can't really get rid of these illegal things.
	Policy development	Importance of lobbyism to the policymaking process	For me [lobbyism] a fundamental, otherwise we would regulate something that has nothing to do with the reality. So that's why we need this feedback and everyone who is not presenting a problem here, for us, it's

			<p>nonexistent. So that's why it's very important that they have this exchange of ideas, exchange of classifications.</p> <p>We are contacted by everyone who is interested in this file and also everyone who has to deal with it at the end. And there you get a kind of a very good overview - where are the problems, and sometimes how this can be solved. Some of these might or can't be solved any longer, but we are trying to find ways forward and then of course, this is the main challenge with seven different political parties and ideas and so on, to come forward with a compromise. This is the main challenge. But to be aware of all these problems and what might lead to what, therefore, lobbying is extremely important.</p>
		Philosophy towards thinking about AI	<p>So as long as some colleagues naming this [AI] like voodoo, you will never create trust in the society, in using all these [technologies]. As a lawyer I'm a fan of differentiating everything, because we then might have different cases and use cases and blah, blah blah that we can find solutions for. For other ones (other MEPs) sometimes it's not, there's a resistance somehow, and even knowing that there are technologies and solutions all to balance these [problems] better.</p>
		Perseverance in adapting legislation	<p>Of course, if you're coming to the educational system, schools and so on, then everything [change/legislation] is difficult. Yeah, so there is a risk and there will be ever [always] a risk in analyzing personal data. But if you're just sticking to this, then we can't develop.</p>
		Speeding up to keep up with advancing AI	<p>So far, I would say a Democratic legislator, like we are here, we are totally not effective enough compared to the digital, or fast, development and digital issues. And actually we have to change ourselves. But I do not see an initiative so far that we are really speeding up the whole thing. But this is from my point of view, it's totally necessary if we do not want to be behind all the time.</p>
Experience as a policymaker	Decision-making as a policymaker	Decision-making with differing AI spaces geographically/politically	<p>But we have to think about ,and this is not solved, I don't know how this can be solved, which court might be competent? Which law is the competent law in solving problems?</p> <p>But the metaverse is combining everything: there's AI, there's blockchain, there is identity, currency, there is civil law and at the moment not yet criminal law. This is a real challenge for regional legislator.</p>
		What do you have to balance as a policymaker?	<p>But in the digital area you have more or less three arguments in non balancing, more than this problem - it's data protection, it's the freedom of expression and mass surveillance.</p> <p>If you're trying to do something just to balance crime and normal digital behaviour, then of course in this situation where everyone is communicating via digital means, we need a kind of a technical instrument for looking at it and so nobody can do this any longer. But then if you have this, then it's mass surveillance but our law enforcement has nothing else to do, just surveil every single person.</p>

		Deciding between establishing Europe in the AI space and prioritising regulation	I would say if Google is not interested in Europe any longer, and they switch off their system for Europe then we are simply left with a black screen. So, so far they have an interest... especially in AI, they are all asking for regulation. What we are doing now is a kind of an attempt. I still think we are over regulating these.
		Adapting previous decisions made by policymakers	We tried a bit to face this problem [of changing technology] in the so called AIDA report. I don't know if you're aware. So it's AI in the Digital Age where I would say but probably there might also be other ideas. As a democratic legislator we have to catch up with the development and therefore we need to avoid these ponderous processes or proceedings we adhere to. Therefore we have to think about how we can be faster and give a kind of an idea of how they might develop something.
	Interacting with others	Balancing different opinions	So as a politician, and especially also in the digital area, you have to balance, all the time, different interests. So this is more or less the role. Sometimes I would like, I would say, please, tech industry and let's say NGOs, please sit together and make your own rules. It would be better. But here now, this is a kind of fight - they are not talking to each other. So we are there and we have some expectations also to minimize the risk to our citizens because of the results of AI and so on. And therefore we need to have something in place.
		Interacting with policymakers representing left-wing organisations and general public interest	But this part is filled by all my left wing orientated friends. It's filled by the other NGOs and it's filled by some, let's say, consumer organizations to fill up the void. The European Consumer Association, they are perfectly playing their role. That's why you need more or less to counterbalance the extreme to the other side, just to end up somewhere in the middle.
		To represent AI development, the other side must be counterbalanced	So the NGOs are loving me here [sarcastic]. They think always if I'm making my amendment, then of course I have to go to the more extreme version and then they are all upset in public, blah, blah, blah. But of course, I should also know this is a strategic or tactical situation. Of course I can't go to what I really want, I have to exaggerate.
		NGOs inform policymakers of the risks	The misinformation, disinformation and so on. And here, of course, we are trying to mitigate these risks. How we are getting aware of these risks? Either the associations, NGOs, companies are telling us these or we have already experienced the risks.
		Conflicting mentalities and philosophies	So this is something where we have to create a more positive mentality on saying we need to digitalize. The problem is again, some other political parties are playing more with the fears. Instead of saying this is our future, we have to deal with it and now we are mitigating the risk somehow. But use it [the AI], this is not really happening. They are all saying: "oh it's dangerous and we need to be careful".
AI's development		The need for policy and regulation in AI development	The need for regulation to distinguish between good and bad

			<p>the beginning, you can't hinder this. So probably then we need a kind of governance structure. It's like criminal law.</p>
		Sometimes, regulations are wrong (we need to share data)	<p>So now with AI and the health sector we have a kind of conflict. We have also a conflict with, what we are having in mind, with the results of AI. We are saying all non bias, nondiscriminatory, gender balance. You will need massively personal data to train your algorithms. And if GDPR is not providing these, then we are out of the game. In a data driven world we need data instead of no we don't want to use data for this. And this we created a mentality in, not showing and not processing and so on. Now we need the total opposite. And if we are missing now the timing of the health data development, then we are out.</p>
Effects of AI	Current Benefits and Current Risks	ChatGPT is not as dangerous as we think.	<p>So, of course I'm asking myself also if chatGPT for instance, is a kind of the entrance or the starting point for the shifting of power from humans to machines - it might be. So far it's not. Of course they can do this faster, quicker sometimes probably more intelligent or creating better text or whatever. But so far I would say it's not out of control somehow.</p>
		Risks from social media	<p>We see already that the digitalization and the possibilities, especially with social media misinformation is a kind of, pushback on democracy or rule of law. And so that's why we have to keep in mind there are risks and this might infringe on the individual or this might infringe institutions or principles, democracy, rule of law and so on. And this is what we are knowing, this might happen. The misinformation, disinformation and so on.</p>
		Biometrics: Keeping up with the times or an invasion of privacy?	<p>So especially the question of real time use of biometrical identification. This is something that is more ideologically driven at the end. We are always saying, of course we have to update our police or our law enforcement in a way to stay on the same level of how everyone else is acting today, and the others are seeing these 'big brother' states everywhere.</p>
		AI making decisions is not always reliable, with hiring or medical processes.	<p>But also what we like to avoid is the individual risk. So if you're applying for a job, you will be sorted out by AI and even if you are into the last five, then you would say so it's important for your future, it's important for your personality. And this can't be decided by AI. Of course, if you have 2000 applications then probably you can use AI and preselect it somehow. But if you're then coming to this end and saying oh yes, now we have ten or five or whatever left, then this should be done by humans.</p>
			<p>Often in the medical side there are possibilities in just saying I shouldn't decide if you are going to surgery or not. This should be done by someone, might be supported by AI in decision, what is this and so on. But at the end there will be a decision not by the machine. It might change in a couple of decades, but for this stage I would say we need to be careful.</p>
		Current Risks sometimes have to be overlooked.	<p>So the vaccine for COVID or against COVID [it was] helped by AI, but nobody is seeing this. Here with Chat GPT you can see and feel a bit. But on vaccine, it's developed and created and so on with AI... but yeah, you</p>

			can't believe it, but you don't have to believe it. And this is somehow, I would say problematic in saying there are risks, but use it.
			Google will know everything about you. They have analyzed your personality already in a way you probably don't want to know....And they don't care if you're coming asking in general, then of course they are totally seeing risks everywhere and so on. But if we are not having a digital world in Europe or in Germany or whatever, then others will overtake us everywhere, producing faster, more individual, less costly [technologies] and so on. We can decide in just ignoring or we can decide to be more on the top, but then we have to be active.
	Future Benefits and Risks	What jobs are going to be digitalised in the future?	So that's why we need to come forward with probably saying something like: everything in our daily life will be digitalized, so we need an understanding for all of this. And we need all the one who are working on these, are understanding these and learning these programming languages and so on. This is what we should do at the end, because the skills might be different, or they will be different. The demanded or requested skills vary. So there is a kind of a change. But the politicians or the government could add to this development already now. Create more possibilities. In these days I would say very future oriented education on these digital issues. And do you need a lawyer still like me in ten years or maybe years, I don't know. The pilots, probably totally redundant. Architecture might be also done by AI. Even the legislator might be if you're pressing just the button on Chat GPT and saying please create [EU] AI Act 2.0, it might happen.
		Benefits in the health sector	I would say the health sector, so this is where everyone can benefit from. So these are lung screen pictures or screenings for detecting cancer or whatever it is. So far they are able to detect it earlier than what human beings can do.
		Benefits to the climate crisis	Energy now, regarding climate, fighting climate change is also something what we have a kind of a very broad field of usage of AI. It will help in saving, it will help in distributing and so on. This is something which is the actual problem and that's why we can use AI for this purpose.

Interviewee 3

Understanding Interviewee's Role	Role	Interviewee's Dual Role Within Company	So I have a dual role in Company. One is the CEO of Company2, scaling that organization within Company, and the second is the Chief AI Officer where I'm coordinating AI across the whole group of 120,000 people.
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		Benefits from Company's Acquisition of Company2 and Continued Autonomy within Company2	So, yeah, I've got a lot of freedom, but also at the same time, there are benefits of joining up and aligning with such a large organization.
		Additional Compliance Procedures for Public Companies	Yeah. It is a public company, so you have various different kind of compliances from an audit and like sox compliance perspective. So there's been things that we have to have done as a startup that we wouldn't have ordinarily have had to do.
Effects of AI	AI Benefits	6 AI Categories of Application	So rather than talking about definitions and technologies, I think there are six categories of applications of AI from task automation through to complex decision making through to insight extraction. And I'm not talking about technologies here. I'm just talking about the things that companies value.
		Dual Benefit of AI Technologies: Efficiency and Effectiveness	Essentially these technologies are good at two things, really. One is making things more efficient, removing friction and the other one is making things more effective.
		Harnessing Effectiveness of Information Transparency and Mutual Responsibility from Self-Policing	But what AI can do, for example, is well, not just AI but even just analytics, but you could actually make all of your expenses publicly available and have people self-police each other.
	AI Future Benefits	Optimisation, Halving Energy Needs, and the Charm of Immortality	And if we optimize them to death, then then they they we could half the amount of energy required. So the third risk is, not necessarily risk, but these technologies in theory, there are people alive today, according to some scientists, that won't have to die because AI can advance medicine.
		Economic Freedom to Contribute to Humanity	And then that gives then people the ability, the freedom, the economic freedom to not have to work for a company they don't want to be working for, that's not purposeful, but the economic freedom to contribute to humanity how they want.
		The Reinforcing Loop of Innovations for Public Benefit	I think if we can get to the point where we can free more and more people up from those economic constraints, they will then create innovations that will also free more and more people up. And the more and more people we free up, the more I think that they will actually make the world better.
		Innovations Aimed at Tangible Benefits instead of Shareholder Return	And so you remove this concept of ownership of innovations and then innovations can be can be built that are primarily driven to benefit whatever they're trying to benefit and not to give a shareholder return, if that makes sense.
	AI Risks	Lack of Understanding of AI Technologies by the House of Commons	I've been going to the Houses of Commons to educate ministers about these technologies cause they still don't really know what they are, cause they're being advised by people that don't know what they're talking about.
		The Black Box Problem: Issue of Explainability and Accountability	If it's making decisions that affect people's lives materially, then I would argue you probably need to make it explainable and transparent and

			auditable so that you can you know hold people to account or fix it when it goes wrong.
		Creation of Imbalances from Overreliance on AI: Moving the Needle Too Much	The second short term challenge is these technologies are phenomenally powerful and they can move the needle significantly when solving a problem.
		Macro Risk 1: The Political Singularity	The pestle framework to try to capture some of the macro Michael's singularities associated with these technologies. So the first one, I referred to the political singularity as a world where we no longer know what is true. So a post truth world. So these technologies can have challenged our political foundations, deep fakes, misinformation, bots, et cetera.
		The Role of Regulation in Ensuring Authentication	The second, and I think regulation, by the way, needs to play a significant role in that. They need to essentially, as far as I'm concerned, they need to say any content that's being put out there through any channel, whether it be social media or newspapers or television, it needs to be authenticated and not pushed out there and then brought back when they realize they've got it wrong.
		Increased Productivity and Consumerism: Curse or Benefit?	The second category is environmental impact. So these technologies are very good at increasing consumerism. Now, consumption gets a bad rep. I think consumption gives people access to goods and services that typically enrich people's lives.
		The Technological Singularity: AI Superintelligence	The technological singularity is what everybody's kind of philosophizing about at the moment. We're all LinkedIn AI philosophers, which is where we build a brain that's smarter than us in every single possible way. A super intelligence. People think we'll be able to control it or align it with our values or whatever.
		Being Unthreatening in the Eyes of AI	So so the best thing we can do, even from a regulation perspective, either stop all AI, which is very unlikely, or it's to try to figure out how to make sure that when this thing comes along that it doesn't see us as a threat.
		AI's Awareness of Human Behaviour and Its Manipulation for Corporate and Political Interest	So I guess these technologies are amazing at knowing people's behaviors. They're amazing at even potentially manipulating people to make decisions that don't benefit themselves but benefit the companies and benefit the governments that are using these technologies.
		Mass Job Displacement and Technological Unemployment	And the final one is the risk is that these technologies are going to replace loads of jobs and we're going to create mass technological unemployment.
		Lapse in Retraining Labour and Risk of Social Unrest	The concern here is that we will free up lots of jobs. People won't be able to retrain fast enough to get new jobs cause any new jobs of value we create will probably be able to build an AI that can do them. So you have then mass prolonged technological unemployment. Our economies won't be able to rebalance fast enough and you then have social unrest.

		Illustration of Overshooting the Needle: Risks of Over-optimisation for Human Welfare and the Environment	They could now twelve and a half percent more billable hours than hundreds of millions of dollars for them. But what happened was that people were then having to drive longer distances, in some cases to clients. They were not having enough time to train, clients weren't getting the continuity the same faces they wanted to see. And so it had an environmental impact, it had a negative impact on employees well being, it had a negative impact on clients.
		Possibility to Make Progress in Most KPIs	What's amazing about AI is you can lift you can like move the needles positively for almost all of your KPIs.
		The Problem of Overachieving and the Readjustment Need	sometimes when it overachieves its goal, going back to my original point, it can cause a problem which then you have to adjust and solve for.
	Limitations of AI	AI's Deficiency in Replicating Multisensory Tasks	But I think those things where you have to combine in complex ways, different sensory activities, if it's just one sentence, if it's just seeing something or hearing something, then that I think is probably ripe for AI and automation.
		AI's Deficiency in Complex Decision-making	Also, AI is not particularly very good at reasoning right now and also it's not good at complex decision-making.
How to Ensure that Companies Use AI for Public Benefit?	Welfare Harms	Altruistic Tendencies and Positive Impact Deriving from Abundance of Consumer and Employee Choice	And I think that will happen over the next several years. People have more choice to work and people have more choice to consume. And then hope that I hope that the good in human beings means that they will choose things that are creating a positive impact. I think if we didn't have an innate desire to make the world better, if we genuinely were kind of selfish to the point that we would screw over the world and each other for the next generation, then we wouldn't have survived as a species. We have altruistic tendencies and we want to try and make the environment better for our children.
Decision-making Processes by Businesses and Policymakers	Business Decision Making	Active Information Absorption and Unconscious Cumulation into A Decision	So how I make decisions is I try to absorb as much information as possible through speaking to people, through sharing ideas, and then I have to wait for my body to make a decision.
		Inaction on Things that Do Not Feel Right	So it's one of the reasons why we never took VC funding, why we've never organized ourselves as a hierarchy. It would have been easy to decide to do those things that other people do, but because it didn't feel right, I just wasn't able to.
		Utilization of Frameworks to Distill the Complexity	The world doesn't really make much sense to me, so I try to kind of kind of understand things in its entirety and then collapse it that complexity into frameworks and things that I guess help me internally navigate the world.

		Giving Autonomy to Employees and Reluctance to Manage People	I'm not a fan of managing people. I want people to be relatively self-directed, autonomous. And so I typically I typically enable other people to make decisions by just getting out of their way, if that makes sense as well.
		Anxiety with Reasoning in Blocks; The Automatic Emergence of Decisions	So people tend to kind of like have these axioms, these kind of blocks and then they try to kind of reason and rationalize with those blocks to come to some sort of conclusion that just makes me anxious. I don't have any concept of that so I just have to wait. You wait and then you know, you. Sort of know it just appears. Appears.
		4 Universal Principles of His Company: Justice, Freedom, Equality, and Safety	Like if you looked across different kind of religious, philosophical, political ideologies, you hear words like justice, freedom, equality, safety. Those are actually the four principles that we try to or maybe at least I try to make decisions against in my unconscious.
		Intuitive Conception of Company Values	they essentially say the same thing like integrity, innovation, it's all the same. You don't have to pay millions of dollars to come up with the values.
		Individual Qualities: Curiosity and Creativity	One is your ability to be curious across broad things, how things work. And the other one is what I call creative, which means are you so good at your discipline that you're able to come up with new things.
		Essential Qualities in Social Interactions: Being Considerate and Contributing	And those first two represent kind of relate to you as an individual and the second two relate to your interaction with other people. So the first one I guess, is considerate. So don't do harm, don't be a dick, but you can be considerate but not do the other thing which is to contribute.
	Role of Policymakers	Regulators Role in Removing Frictions and Creating Abundance for Businesses	So what do regulators need to do is to encourage, as far as I'm concerned, organizations to remove friction. So I guess to, to create abundance as opposed to create shareholder returns, taxes obviously, is one way of doing it.
		Regulatory Trends Towards Open-Sourcing	So what I think we're going to start to see, and this happening with Meta is more and more innovations will become open source. So rather than me just sitting on them in a closed model and then getting value from them, I make them open.
		Government's Limited Role in Creating the Abundance of Ideas	And as you open source more and more stuff, again, the idea is that that becomes abundant. We all have access to those goods. So I don't think that necessarily governments will be able to force this to happen.
		Financial Viability of Open-Source and Creation of Alternative Revenue Models	So I might be able to open source a last mile delivery solution which is what we built for Tesco but a company might not have the capability to be able to go and integrate that into their workforce so they pay us to go and do that. So there are revenue models associated with open source but still makes the source abundant for people that want to access it.
		Regulatory Hurdles to Accessing AI Talent from EU countries	Yeah, Brexit has been frustrating because it's been hard to be able to kind of access talent across Europe, ammm which has been very frustrating because some of the talent that is good at certain types of AI are found in Greece and the Germanic countries and Portugal.

		Benefits of GDPR for Responsible Data Use	GDPR has been good. I think, for most people, we're much more conscientious about how we use people's data, even though it puts constraints on there.
		AI's Material Impacts on Society and the Uncertainty Regarding The Timeliness of Regulation	Those technologies that can have material impact on society have been regulated. The question is, can we regulate AI quickly enough to make sure that we mitigate some of the existential threats?
	Innovative Solution Ideas	Crowd-Funding More Ethical Open Source Platforms	Facebook have 3 billion users, and if there was an open source version of Facebook that had the same functionality but was transparent about it not explicitly trying to kind of capture and keep your attention and approve it, would you pay one pound a year to access that? Would you pay ten pence a year to access it? So if you pay 3 billion, people pay ten pence, that's 300 million pounds a year, which is more than enough to fund an open source version of Facebook.
		Possibility of Decentralised Companies	One of the things I'm very passionate about is how can you create decentralized companies? So how can you create a company that has HR and accounting and software development, et cetera, but without having a company?
		Replacing the Traditional Company: The Difficulty of Creating the Platform for Corporate Coordination	But you're right, you need to have that platform in place that coordinates all of the things that you need to run a company. And that's hard. And it's something I've been thinking about for over 15 years.

Interviewee 4

Parliament Procedure and Decision Making	Decision-Making	<ul style="list-style-type: none"> You trust the MEP who's working on the file, because you cannot follow everything yourself. So sometimes it's hard to get yourself an opinion on it. So you more or less rely on what you hear from your colleagues. I think all we know, we're happy with the results achieved, of course, we have to make some compromises but its a work in progress
	Partisan Beliefs are overridden by group objectives	<ul style="list-style-type: none"> It's not that it's a party or party lines, about what's important for your group. It's like a value so of course you, you defend it because you believe in it because that's what you're a member of this group. The reason that you get into politics in the first place is the well being of citizens [Businesses will not be able to self-regulate]...that's the view of our group. And we should be very clear about that.

			<ul style="list-style-type: none"> • There was a general understanding among the other groups that we need to create some mechanisms for people to have the right to get redress if something goes wrong. So, if your company is high risk or not high risk, if things go wrong, people should get somewhere to complain.
Policy and Policy making	Challenges in Policy making and Regulation in the EU AI Act	Challenge 1: Definitions	<ul style="list-style-type: none"> • Well, we don't have for example, we don't have such a concept of [wellbeing] such a definition in the AI act. • One of the biggest things that was the big issue that we were having in Parliament was how to define the high risk AI systems
		Challenge 2: Making legislation future-proof	<ul style="list-style-type: none"> • This has always been one of the biggest challenges – how to write legislation that can be future proof when this technology develops at such a high speed • Instead of fighting discrimination and these [algorithmic] biases, we're trying to find shortcuts with AI systems that are actually going to make things worse.
	Fundamental Issue in regulatory AI policies: Basing regulatory AI policies on Product Regulation Legislation		<ul style="list-style-type: none"> • The reason there's a lot of talk about risk in this is AI is that the Commission based it on product safety regulation. [AI regulation can't be effectively done through basing it on product safety regulation]...you're not technically user, the user of the system is the supermarket. They decided to buy the system, or whoever decides to, and they employ it and they put it in place, they deployed it. • There is those that make the AI: the provider. Then there is the second entity that buys the AI system and starts using it. And then there are the people that get affected by that. <ul style="list-style-type: none"> ■ AI is not just any other device. It's not your hairdryer, when it's really it's very clear, there's a manufacturer producing your hairdryer [and you are the user].

Influence from External Stakeholders	Stakeholder Intention	Companies push for less strict selection criteria	<ul style="list-style-type: none"> - And there was a big push from industry, from companies and from some groups saying that this list [of AI systems that contain risk] is too broad and encompasses too many companies, even though the Commission says that, in their view, this would only cover around 10-15% of the AI systems in the market currently. -
		Company involvement in influencing policy	<ul style="list-style-type: none"> - So yeah, they can say like, which parts they like more, which they like less, but they cannot say, Oh, why don't try to do something new, because it's not possible to consider.
	Stakeholder-proposals for Regulatory AI Policy	Stakeholder-proposed solutions: Self regulation	<ul style="list-style-type: none"> • If you feel that even though you're in Annex 3 but are not high risk, you can just do some sort of self assessment or something, and then you won't be considered high risk [proposals by AI companies] • When we've spoken to representatives from the industry, when they... when they are completely honest, they always say that "yeah, it's just the best idea that we had". They understand that it might not work, but it is the best idea that they came up with.
		Countermeasures to Proposed Self-regulation of AI companies: An opportunity to appeal EU decisions	<ul style="list-style-type: none"> • We said that we cannot accept, the companies just get to decide by themselves, whether they're high risk or not, because the biggest part of this regulation is obligations and healthcare systems. • So [instead of their solution, we decided] they have to notify the supervisory authority, and they have to receive a go approval from the AI authority within three months, so that they can sort of fix, like, further checks whether the system is high risk or not.

<p>Strategies for Stakeholder Engagement</p>	<p>Stakeholder involvement in policy making: Companies, NGOs, Public</p>		<ul style="list-style-type: none"> • We've had many meetings [with companies] before we are tabling amendments [and] even after that. • In the Commission, there's public consultations before they prepare their proposal, they have a specific procedure for that usually, which is open to everyone or certain actors, and they collect input from different actors. • We've met with many representatives, not only of businesses, but of different associations, different NGOs. So I think we've met a very large spectre of factors and representatives. • I mean, I don't know whether we've done it [stakeholder consultations] the best way possible, but this is usually part of what the MEP does
	<p>Incentivising Innovation for social good</p>	<p>Simulated AI product Implementation to assess risks</p>	<ul style="list-style-type: none"> • Obligating even member states to participate in at least one sandbox where companies can get to test and develop their products in a controlled environment, and something that we facilitate. • There should be an incentive for them to participate there knowing that if they participate, and they do that, then afterwards, they'll have an easier time to rating their product and putting it on the market

		<p>Creating General and Specific Product requirements for ethical AI</p>	<ul style="list-style-type: none"> ● In our view, what we were thinking was something more broad, like maybe taking some principles that could be applicable to all AI systems, like they should all be like fair and for the good of the society ○ And then there should be another list of like, more specific requirements, which should be how you get to ensure that you're applying the principle. So you should do this and this and this in order to ensure that your AI system is fair.
Oversight in AI Innovation	Presupposition by stakeholders that all innovation is good		<ul style="list-style-type: none"> ● When people speak about how important innovation is they feel that it's for the good of everyone <ul style="list-style-type: none"> ○ Is all innovation good? If we develop one super powerful nuclear bomb, that would be innovation, but was it really, is it really worth it?
	Risks from Innovation		<ul style="list-style-type: none"> ● But I think what's the biggest risk is in the seemingly innocent technologies that we don't think about and how they can slowly erode our society <p>Specific user case: AI is more risky when you consider the possibilities that some chat bots give medical advice online. I think that has more potential to kill people than the idea of AI taking over the world, and actually killing people.</p>
	Algorithmic Bias		<ul style="list-style-type: none"> ● They [AI] did more wrong results and are more prone to mistakes when it comes to people of colour of certain backgrounds ● Systems are not trained well enough for them [diverse datasets and POC]. And they just perpetuate discrimination that we've had.
Responsibility	Who's to blame for high-risk AI?		<p>It's not going to be the AI fault, it is going to be the fault of those people who decide that they can easily substitute human rational reasoning with an algorithm.</p>

EU AI Act - General Overview	Aims	<ul style="list-style-type: none"> • We have stated our priorities...to ensure a good protection of the fundamental rights of the people, of natural persons, to make sure that the AI systems work for them and not against them • How we can make it [the Act] so that on the one side, they can develop AI safely. And on the other side, to make sure that there is no abuse of personal data.
	Priorities	<p>We have priorities to come up with :</p> <ul style="list-style-type: none"> • a coherent and good definition of what an AI system is • what kind of obligations to be set for providers for users of AI systems • what kind of rights we give to the people so that they will be subjected – affected by the AI • What kinds of measures to put in support of companies developing AI systems • how we can make it so that on the one side, they can develop AI safely. And on the other side, to make sure that there is no abuse of personal data.

Interviewee 5

Effects of AI to Wellbeing	Current Benefits	Increased efficiency	So I think some arguments around productivity are just very clear, like some use cases already are present and exist where people are able to just do things much more efficiently. That is very clear. I have examples from my own work. Basically I've been able to reduce the time I have to use for some types of tasks by 50% or more, I'm able to do things much much quicker, some things. So I think that's a very clear benefit that already we have some examples of.
		Lack of use limits harms	My guess is that AI hasn't really entered the picture very much yet.
	Current Risks	Targeting and policing of minorities, and discriminated groups	Say in the Netherlands, some AI systems were used to demand many families to pay back child benefits that they claimed that their AI systems found out were like giving out in some type of fraudulent way, and you can even measure the harm that was caused by that, like, measure how many families were affected, how many like how many families basically shifted into poverty because of that. How many people committed suicide, for example.
	Future Benefits	Discrepancy between Appearance and Reality of Future	I mean, yeah, usually companies are making these very broad and big claims that I earlier mentioned, solving cancer and helping fix climate change and these kinds of things. I think they're kind of more like marketing slogans and possibilities rather than actual things that we know we can do.

		Promises of AI Technologies	
		Increased efficiency and capacity to tackle Global Challenges	More intelligence, more capability, better tools. Perhaps they are possible.
		Overhyped Implications about Social Interactions	I don't know, that might be more hype than not, that might be something that you kind of hope that could be useful, in an ideal world, AI could be used to somehow facilitate that people actually meet more in real life and kind of have more positive interactions in real life.
	Future Risks	Extrapolation about Possible Future AI Risks Aid in development of lethal chemical and bioweapons	Yeah, yeah, so on the one hand, I think both sides, those who talk about future risks and those who talk about future benefits, both are in some way speculating because if say, somebody is making a case that, oh, in the future we will have more capable systems and these more capable systems could have really bad outcomes like I don't know, having some impact on say, some type of lethal chemical or bio weapon being developed or something like that. They're kind of speculating in the sense that if no such thing has happened, they are speculative and kind of trying to extrapolate from some capabilities that exist in some incidents that have occurred and seeing if those could be more extreme in the future.
		Identified Risky Areas: Increased unemployment and worsened social interactions	So these are the two - the unemployment aspect and maybe the social interaction aspect, that could become worse with AI. Those are probably going to be quite big challenges. I don't know if we are going to be seeing positive outcomes.
Policymaking	EU AI Act		The EU AI Act focus was on regulating specific intended purposes of AI systems, we saw that these kinds of systems don't have a single internal purpose that you can just regulate because they can be used for many different things.
	Response to Corporations	Google Deepmind's Influence over AI Governance Institutions	Oh, absolutely. Right now, for example, yesterday, came out a paper by Google Deepmind, talking about what kind of AI institutions, AI governance institutions, should be developed internationally. That is kind of their effort to try to influence the process toward having, from their perspective, favourable institutions internationally, or if you have a less cynical view, then they want to contribute to make sure that these are good institutions.
		Political Involvement of Tech Companies in Shaping National Legislation	They are involved in all kinds of discussions with the Congress. In the UK, tech CEOs have been invited to meetings with the prime minister and the UK is trying to organise this foundation model task force and the UK AI safety summit, big tech and AI corporations are trying to influence those processes.

		Weight of Potential Benefits of AI in EU Stakeholder Management: Life Improvements and Job Creation	Obviously it's very powerful sometimes to be persuaded by arguments around like, oh, there's so much upside to AI. Like you, you can develop so many great applications that improve the lives of people in the union. You can create all these jobs, and like, you want to compete with other countries and other regions. These kinds of arguments are powerful and they can persuade many, and there are some examples sometimes where you can see that these kinds of arguments persuade and have more power perhaps.
Balancing Stakeholder Interests		EU AI Act Aims to Kill Two Birds with One Stone: Legislative Certainty and Guaranteeing Human Rights	With this legislation, one goal is to increase the uptake of AI and basically create laws and rules that are applicable in the whole digital single market, so to create a lot of legal certainty for companies that are working in the EU digital single market. So that's one goal basically to facilitate business. But another goal is to protect fundamental rights - health, safety of EU citizens. And so that has been the main goal right from the beginning and these 2 goals from the perspective of the EU are quite good to find because if AI systems are trustworthy, safe, controllable, whatnot, then it's easier to have a viable business, longer term.
		Role of EU Policymakers as Stakeholder Managers	EU policymakers from my perspective are very big stakeholder managers and stakeholder coordinators. Oftentimes they are not necessarily creating unique content on their own. They're kind of managing different interests and finding some kind of compromises.
		Role of Civil Society Interests in Framing EU-Level Legislation	There have been many proposals by some civil society organisations that have been accepted, which are quite demanding of companies, like for example banning certain kinds of emotion recognition systems, facial policing systems and stuff like that. These are quite demanding and civil society has been quite strong and vocal on those and their views have been generally getting a lot of uptake and acceptance by policymakers.
		Lack of Quantitative Data in Making Policy Decisions and Deprioritisation of Long-term Existential Risk	My guess is a lot of policymakers do intuitive stakeholder management and kind of weigh different things based on their subjective view. I think you would probably want that to be based on both qualitative or quantitative, evidence and arguments. Part of which can be like expert predictions, forecasts by super forecasters, all kinds of useful information that you can use. I think the higher quality, the better it is. With existential risk or catastrophic risk, these oftentimes don't seem high priorities for policymakers because they are so difficult to estimate, and oftentimes the probabilities can be quite low.
Effectiveness of Policymaking		Narrowmindedness of Policymakers in Predicting Future Technologies and Addressing Potential Future Risks of Current AI Products	Policy makers usually don't regulate systems that are going to emerge or be developed in the future. They focus on systems that are being developed right now and already have some harms visible right now which can be very narrow minded in the sense that some systems like... it's not super difficult to extrapolate that with some systems even if some harms haven't occurred yet, they could occur quite quickly.
		Lack of Regulation for Initial AI Developers and Exacerbation of Risks	And this narrow focus on purposes couldn't capture some of the risks that could be reduced earlier in the value chain.

		Need for Increased Awareness of AI Capabilities and Risks	I think, yeah, partly I think what should be done is just to be able to monitor, understand risks better, understand the capabilities of systems better. Just do a lot of work around that, so that you are better prepared for when you need to take very serious action.
		Lack of Consideration of Catastrophic and Existential Risk by Policymakers	There recently came out a publication report, basically asking from experts, from the public, and from super forecasters what they think the different risks are from these systems, catastrophic and extinction risks, with what the probabilities are. And this is not knowledge that policymakers probably have and they don't refer to that when they make the judgement of how low or high some risk is.
Own Research	Lobbying for Different Ideas	Risto's Advocacy for the EU AI Act	So I have been involved in, yeah, advocating for certain ideas to be put in, yeah, advocating for certain ideas to be put into legislation in the EU AI Act.
		Raised Awareness for the Regulation of General Purpose AI Systems	I think the biggest impact we have had so far is raising awareness of the importance of regulating general purpose AI systems and basically being able to make that from a very minor consideration by a few actors to something that is a high priority in the political policy agenda.
	Predictions for AI Future	Trend Towards More Powerful GPT Systems	Microsoft, for example, has put over 10 billion, I think, at the beginning of this year into openAI and now you have new companies coming up, like Inflection, that I think raised like 1.5 billion and yeah, all kinds of initiatives happening. So I think this will, this will continue. I foresee systems becoming more general purpose and more powerful.
		Investment into Powerful GPTs and Entrance of New Players	Well, I think it's just going to continue in the foreseeable future in the next few years, in the sense that more investment will go to our general purpose AI systems, more actors will want to develop these systems.
		Effects of AI on Job Displacement	I think some aspects that we will see in the foreseeable future are like how many people will lose their jobs and won't be able to move into new jobs.
	Specific Risk Research	Understanding AI Systems and Unleashing Their Economic Value	And so my research has focused quite a lot on how to define, advance AI systems, general purpose AI systems, how to define them for regulatory purposes, what kind of market trends do we see around these types of systems, who are the main providers, how much money is spent on that, how important these systems seem to be economically.
High Stakes of Using AI in Sensitive Use Cases Like Welfare Systems		I think it's not super speculative to take that incident [jobs and livelihoods lost in the Netherlands due to AI making a mistake] and extrapolate slightly further by thinking about things that could have gone even worse.	
Clash in FLI's and EU's Agendas: Policymaker Ignorance of Catastrophic and Existential Risk		I think so. On the other hand, for example, my organisation takes seriously the possibility of catastrophic and extinction risk from AI systems. And sometimes some policymakers doubt the relevance of this by saying something like we don't think that the risk is very high, but then they don't really use or acknowledge research from others who are trying to estimate these kinds of risks.	

Combined Coding Table

Decision-Making - NEED TO ANONYMISE!

	Lidiya	Axel	Daniel	Asli	Gabriele
Fundamental rights, Security / Safety and Privacy	<p>Primary concern is fundamental rights. Places importance on fighting discrimination and algorithmic biases. Focuses on classifying and defining high-risk AI systems.</p> <p>Advocates for principles that are applicable to all AI systems: fairness and aimed at social good. Against innovation if it threatens safety. It is the responsibility of those creating the AI to make it safe - consumers have a right to complain to them.</p> <p>Seemingly innocent technologies may threaten safety if used inappropriately. Against (ab)use of personal data</p>	<p>If European companies are at the forefront of AI development, this will give European citizens more wellbeing and more safety. AI can be used to make European communities more safe - using AI for criminal (facial or other) recognition can reduce crime (good for wellbeing). For Axel, the benefits of personal data use for safety seem to outweigh the drawbacks from privacy loss.</p> <p>Big tech companies already have all our data anyway, these are not private - so they might as well be used for good. AI could do this, if it were less regulated. Most of these risks can be mitigated by human oversight in the final steps of a decision-making process (e.g., job applications, credit scoring, etc).</p>	<p>AI has the potential to free people of economic oppression, to make our societies safer.</p> <p>AI has the potential to manipulate people's behavior -this may be bad for rights, safety. Seems to think these concerns are legitimate but not the priority. He has other frameworks for analyzing wellbeing risks (see PESTEL) and potential.</p> <p>Justice, freedom, equality and safety are his values and he makes decisions that further human development in these areas</p>	<p>Not many comments on this. Only mentioned that Unilever wants to abide by regulation and ethical rules when it comes to AI. However, these do not seem to be the real priority of Unilever, rather, it's a barrier they must cross to achieve their real aims: growth and efficiency.</p>	<p>(Consider his point on potential discrimination arising from use of AI for decision making)</p> <p>European Commission aims to protect individual rights and safety. Commissioners outline priority of "human-centric AI" (although this is a very vague guideline).</p> <p>Well-being comes into play through direct (security) and correlate factors like rights and privacy.</p> <p>Focus on regulating high risk AI, that has an effect on human decisions and action. This is to ensure human safety.</p>
Trust and Democracy	<p>Bans on predictive policing because it represents an erosion of trust in society and could lead to mass surveillance - breakdown of democracy and freedom of speech.</p>	<p>Pushback on democracy and rule of law caused by misinformation and disinformation from AI is the biggest risk. This could erode our democratic processes and social cohesion. However, excessive protection of data does not entail this risk. If we want to maintain our democracy AI content creation must be monitored.</p>	<p>Trustworthy AI is important "if it's making decisions that affect people's lives materially" → explainable + transparent. If not, this can erode trust in society</p> <p>AI has the potential to manipulate people's behavior -this may be bad for democracy an free elections.</p> <p>In a positive scenario, AI could increase trust and social cohesion in future by allowing people more time to spend on meaningful activity instead of work.</p>	<p>Same as comment above.</p>	<p>Pushes for trustworthy AI, justifies it with arguments that it will prevent erosion of the fabric and dynamic of our society.</p> <p>Like Daniel, focus on regulating for trustworthy AI when it materially affects people's lives; for other factors more AI testing, development, innovation should be allowed.</p>
Innovation 1: quantity		<p>The risk of consumerism has a counterweight due to potential savings stemming from AI applications.</p>	<p>1.Competition enabling access to digital goods, such as the formation of open-source platforms for</p>	<p>Unilever's purpose is to provide increased accessibility of their goods (Daniel specifically</p>	<p>The EU facilitates researchers' access to technological equipment.</p>

		<p>Perhaps the most striking example is the development of COVID vaccines, facilitated by AI use. This shows that often the involvement of AI in product development is implicit. (There must be greater transparency to ensure that AI does not generate problems behind the doors.)</p>	<p>attracting talent and data inflows. 2.He envisions a world of abundance that could develop following AI deployment: 'people don't have to work for things'. This unlocks access to greater time to be put to use for social impact.</p>	<p>mentioned access to clean water). Unilever's innovation will likely lead to over-consumerism and behavioural consumption choices, which are inefficient and welfare deteriorating. Although when pressed about this issue, the interviewee refuses to acknowledge it - citing the following reasoning: Impact of AI on consumption levels depends on many factors: country, affordability, pricing, economic situation, and mood. Unilever aims to foster AI innovations that increase the quantity of products they can sell. This is their GROWTH objective. This includes making better targeted ads (more personalized) and testing "consumer winning" solutions.</p>	<p>Better regulation ensures trustworthy AI and, thus, greater adoption of AI products especially by businesses and public administration.</p>
<p>Innovation 2: quality</p>	<p>EU initiatives to ensure responsible innovation that addresses risks effectively: Obligation for member states to participate in at least one sandbox where new products are tested in a regulated way.</p> <p>Appreciation that not all innovation is good e.g. development of a super nuclear bomb is a harmful invention.</p> <p>Innocent technologies, such as medical chat bots, pose the greatest risk given their higher probability of happening than superintelligence.</p>	<p>Focus on enabling European industry to develop and innovate. Self-driving cars, farming, green tech, AI to solve climate change.</p> <p>Acknowledges that overregulation could risk losing out innovators (e.g., Google) in the EU market.</p> <p>Guidelines help steer innovations in the good side but this assumes that there are good intentions in the first place. A governance structure on top of this would help with enforcement of controls on innovations.</p> <p>More data collection and processing as a response to more inclusive and less discriminatory innovations.</p>	<p>Efficiency and effectiveness may contradict at times but they are the main benefits of AI. Effectiveness is about making sure the solution suits the problem at hand. This may be ensured through greater data transparency and collective enforcement mechanisms.</p>	<p>Using AI to create better products: smell better, lower cost, using local ingredients</p>	<p>Greater efficiencies require costs to be born and it becomes a question of opportunity costs of funds used for driving such efficiencies.</p> <p>Effective AI applications may require less regulatory intervention. He gives examples, such as predictive maintenance applications and weather forecast applications. Such effective user cases do not pose a great problem if they malfunction. He seems to interpret effective technologies as low risk technologies.</p> <p>Effectiveness is linked with making decision making processes inclusive and synthesizing stakeholder opinion in shaping its direction. Extensive consultations ensure effective policymaking and effective implementation of</p>

					AI technologies.
Purpose in life, Role of humans:		<p>1. 'Very future oriented education': understanding of programming & digitisation but also training ourselves for jobs that cannot be automated concerning human relationships or creativity. Vision for jobs that are 'service oriented and informatic'.</p> <p>2. Implicit inclination towards development and making livelihoods easier for people e.g., AI caters for his need to drive when old</p> <p>Existential risk is not prioritized</p>	<p>1. Consumers and employees are playing an increasing role in directing businesses as decision makers: 'I actually think that consumers, that employees are decisionmakers.'</p> <p>2. People are not homo economicus anymore. Freed from economic constraints, people have time to 'contribute positively to humanity in some way, in the other people's lives, or animals or the environment.'</p> <p>Also, there is a self-reinforcing cycle, whereby increasing innovations of the freed people free up more people.</p> <p>3. People have the discretion to work for companies with which their values align.</p>	<p>1. People have time to engage in higher added value tasks concerning the future of business and maybe more meaningful CSR initiatives: 'So when you unlock the capacity in your organization and when you enable your people to be faster and simpler by using the technologies like AI, , so that you unlock capacity for your people to think about other things.'</p> <p>2. Constant need to develop oneself to stay ahead of the market: importance of 'staying relevant' whilst job openings are likely to remain constant or increase.</p>	<p>1. Implications for human lives are a part of the legislative process. He referenced von der Leyen's commitment towards 'human centric AI'.</p>

Decision-Making - NEED TO ANONYMISE!

	Interviewee 2	Interviewee 4	Interviewee 3	Interviewee 1	Interviewee 6
Intuition vs Evidence :	<p>MEP "by definition" represents citizens. So they defend citizen well-being intuitively; they don't gather evidence about affectation of policies on citizen wellbeing. The parliamentarians' views may not necessarily be accurate.</p> <p>NOT EVIDENCE BASED.</p>	<p>Lobbyism is essential - gives legislators evidence of the AI landscape is and what stakeholders' priorities are. Evidence-based approach. However it is limited to groups that have capacity to organize to lobby (might be bad for wellbeing).</p> <p>Tradeoffs and prioritization of lobbyist/ stakeholder perspectives made intuitively.</p> <p>Uses evidence of the current benefits of AI to see AI's potential and advocate for this.</p> <p>SOME EVIDENCE, LOTS OF INTUITIVE BALANCING</p>	<p>Daniel argues his approach is intuitive, but from outside we can discern its structure. His reasoning is evidence-based since he tries to "absorb" all information and talk to many people.</p> <p>Utilizes frameworks to understand and navigate complexity.</p> <p>He has certain values or principles (agreeable, human values: justice, freedom, equality, safety) - these entail a world view. He then gathers evidence on what steps he can take to advance these</p> <p>MOSTLY EVIDENCE BASED</p>	<p>Her thinking is based on specific and measurable targets, although she mentions that her targets have become 'more enabling and influencing' over time.</p> <p>She seems to utilize her past experience and intuition is seeing the big picture and industry trends; nevertheless, she uses business tools, such as quarterly business reviews and agile methodologies, for a crisp prioritization process.</p> <p>Her and Unilever's decision-making regarding AI is highly quantitative, linking nicely with either growth or efficiency</p>	<p>Relatively strong evidential backing: consultations with all interest groups, academic + think tanks consulted, engages in personal research. Inevitably there is some intuitive balance of priorities when he is conducting stakeholder analysis.</p> <p>VERY WEAK evidence after policy is implemented - not much modification.</p>

				<p>implications. Even experimentation of new tech are roadmap based (i.e. highly structured and info-based), yet they seem to drive forward new innovations based on their vision (and collective intuitions) for the company.</p> <p>- VERY EVIDENCE BASED</p>	
Specificity and measurability	<p>“Well, we don't have for example, we don't have such a concept of [wellbeing] such a definition in the AI act.”</p> <p>→ unspecific legislation and decisions.</p> <p>Unspecific: prefers to legislate on principles.</p>	<p>Employs a more realist framework rather than abstract principles. What is AI actually doing to people?</p> <p>He mentions his respect for nuances and appreciating divergent features of different kinds of AI: <i>“As a lawyer I'm a fan of differentiating everything, because we then might have different cases and use cases and blah, blah blah that we can find solutions for.”</i> Given his lack of specific details in explaining his vision of AI development I am not sure to the extent which he pays attention to specificities.</p> <p>His philosophy seems to be less adhering to specific targets and more going with the flow of discussion and trying to balance opposing interests. He has to sometimes play the extreme side (i.e. adopt a more extreme and less nuanced position) to counterbalance the extremes on the other side.</p>	<p>Aims to distill the specificity into frameworks which helps him navigate his way through problems and find targeted solutions.</p> <p>He is more guided by core principles and ideologies (religious, political, and philosophical). Measurements are not the end for him; he uses them more as ends towards his aims and carefully tailors them according to his main motivations and aims for a given project.</p> <p>Supports specificity in business targets but champions for diversity in who they are trying to benefit beyond shareholder interests.</p>	<p>Utilizes very specific and measurable targets mostly focused on profit growth and efficiency gains.</p> <p>Specific definitions and guidelines vary by geography so this inherently generates complexities across the business.</p> <p>Specificity of the product to the market and nature of consumers has been emphasized several times.</p> <p>Adapting the advertising to specific channels and audiences. Specificity is important in appealing to the end customer for such a large multinational company.</p>	<p>Mentioned that public wellbeing is relative and could involve many conflicting considerations, including financial burden on citizens and environmental impact.</p> <p>Not sure whether there are specific evaluations processes in member states in place. It could be that the Commission checks that the regulation is implemented effectively across the Member States without specific procedures.</p> <p>LOW MEASURABILITY, not monitoring effectiveness of legislation to achieve goals</p> <p>The highly methodological impact assessment ensures that the legislation is specific and coherent enough by ensuring that it takes into account the impact on SMEs, workforce, businesses etc.</p>
Appearance vs reality:	<p>Appears to be defensive when questioned about the roots of her prioritization (party interest)</p>	<p>Policymakers must appear to take a harder stance than what they actually want to achieve (“aim high, hit low”). This is part of the balancing act.</p> <p>There is a false dichotomy between data protection and AI development. This hinders effective legislation, with opposition parties employing one-</p>	<p>Decision-making appears obscure (to the interviewee), but can be conceptualized by the interviewer.</p>	<p>On the surface, Unilever puts ‘sustainability’ in the forefront for all customers but in reality Unilever does not effectively consider the implications of their product innovations on overconsumption (social sustainability) and aims to maximize growth. Their success in meeting this highly idealized ambition</p>	<p>The role of protecting the public interest and wellbeing (a relative concept) vs the reality of policymakers trying to push for private interests or interests of their parties.</p> <p>He stressed the independent role of a EU commissioner as a</p>

		sided arguments and being closed to dialogue.		will inherently depend on the countervailing balance between greater efficiency and higher growth.	civil servant and mentioned that they are not 'supposed to pursue particular interests, but more collective interests.'
Prioritization and autonomy vs plurality	Commission holds consultations to incorporate a plurality of views. Petar prioritizes acting along party (S&D) lines - LACK OF AUTONOMY in decision making. Plurality of documents (parliament, commission, council) combined into final piece of legislation	Plurality of perspectives incorporated by policymaker: lobbyists and stakeholders. Prioritization of compromise - of balancing perspectives rather than pursuing the "right" one. Autonomy in terms of which perspective to prioritize, yet still bound by the "balancing" nature of a parliament role. Prioritization of AI applications that are visible to the electorate (congruent with literature on flaws of democratic systems) Prioritizes not over regulating, most likely due to the power of industry's lobby over him.	Values company and employee autonomy very highly: never took VC funding, no hierarchy. He is not tied to other interests. Prefers people to be self-directed and autonomous. Face some regulatory hurdles (cites Brexit as example) that limit activity - not entirely autonomous and free to make decisions. Daniel creates products that achieve his client's aims, while not harming or even improving other factors he considers important e.g., wellbeing/envmt.	Prioritization is conducted at the high managerial level. In previous roles she had no say over prioritization. Current role allows for more autonomy. Does not need to incorporate a plurality of views, she can stick to her targets. Overall, these targets do converge to the company's goals as a whole (plurality within the company, but not outside).	Prioritization occurs amongst stakeholders. There is plurality in the decision-making: obligation to meet anyone interested in legislation being drafted. However, they have more autonomy than the parliament in deciding what to prioritize. Policy officers must construct arguments behind work to enable "buy-in" from middle managers, other DGs and at the political level, this limits autonomy. Gabriele argues in a good way, because it may "kill" bad ideas; but it also may make legislation less wellbeing focused.
Agenda setting power:	Parliament has very limited agenda-setting power. They're constrained by Parliament's mandate: "you cannot invent now new things that are not in Parliament mandate or in Congress mandated" and commission's text.	Agenda set by the interest groups - politicians have more of a mediator role. Focused on compromise.	Full agenda setting power - can take his products in whatever direction he wants. E.g., product delivered an outcome that was bad for worker/customer wellbeing. He changed priorities to accommodate his values. He has an ideal view of the world and makes decisions so that his business contributes to this ideal state (human flourishing, economic abundance,) Innate desire to make the world better - autonomy allows him to pursue this. Decision-making should be linked to company purpose - this should determine the agenda.	Unilever has full agenda-setting power. Asli has a moderate amount of power here, being in a managerial role. Although she does not decide the priorities. Unilever's agenda (growth, sales, business development) seems to be ingrained in her worldview, she does not even question it. Whether her or upper managers are setting the agenda is not too relevant since they hold similar beliefs about what is important. Some constraints imposed by regulation in some countries	The Commission has 'a so-called exclusive right of initiative' i.e. there is no higher authority who tells them what they can put on the table. Highest agenda-setting power in the policy landscape.