Uncovering AI regulation's public values in the EU

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***Abstract*—Aligning artificial intelligence (AI) with human values is essential to ensure that the technology advances the common good. Governance strategies aimed at fostering human-centric AI range from voluntary ethical guidelines to legally enforceable regulation. Recently, the European Union adopted the AI Act as the world's first comprehensive AI law. Despite this progress, AI governance frameworks are often criticized for lacking societal grounding, resulting from missing societal participation and measures to assess the impact of AI and its regulation on broader human values and value. Leveraging psychological, non-normative Public Value theory and tools, this paper addresses this gap by refocusing AI governance on the public, its diverse needs and thus a broader notion of value. Quantitative analysis of online survey results (n = 251) reveals that AI regulation provides significant Public Value for citizens along all Public Value dimensions, established in basic human needs. In contrast, qualitative content analysis demonstrates that the AI Act under-emphasizes the political-social and hedonistic-aesthetic dimensions compared to instrumental-utilitarian and moral-ethical dimensions. While the EU's decision to deviate towards a hard law approach is therefore valuable, actions are recommended to balance out value creation across all basic need dimensions - especially given the identified strong correlation between PV, social trust and intentions to use regulated AI.**

***Index Terms*—AI Act, AI Public Value, AI Value Alignment, Public Sector Management**

I. Introduction

To mitigate AI risks without hindering innovation and economic growth, public institutions around the world have set the goal to align AI with human values through various governance frameworks [1]. The most common of these are soft-law approaches, which are frequently criticized for being biased towards corporate interests and largely ineffective in practice [2], [3]. In response, the European Union (EU) has passed the AI Act (AIA) [4]. As the world's first legally binding AI regulation, it promises to ensure that the technology contributes to social well-being. Yet, first assessments that go beyond economic outcomes [5], [6] question its value [7]. This goes against the ultimate goal and the legal duty of public institutions and policy to provide value to the public [8], [9]. Consequently, research on the values and value content of AI policy is growing [10]–[13]. These studies are increasingly relying on the term and concept of Public Value (PV) and Public Values (PVs). Following a New Public Management perspective, they regard PVs and PV as governmental, focusing on governmental value ideals and assessing AI's contribution to the public sector's bottom line rather than the public sphere. However, PV is neither governmental [14] nor can it simply be delivered, but must be appreciated by the public with its diverse needs and values [15]. To date, few studies have adopted a citizen-centered approach to evaluate the values and value of AI and its regulation [16], [17]. This gap partly stems from a lack of empirical tools to assess public values and value beyond economic utility [18] and leads to two research questions: Does the regulation of AI organizations provide value to the public? Which public values are embedded in the AIA?

We argue that psychological, non-normative PV theory and tools [19], [20] can help address the criticism of AI value alignment and governance. PVs are actually held in society and define the quality of the relationship between an individual and the public. PV is created when basic needs along the moral-ethical (ME), political-social (PS), instrumental-utilitarian (IU), and hedonistic-aesthetical (HA) value dimensions are fulfilled. Following such an understanding can support regulators in pursuing truly human-centric AI that builds on the perceptions and experiences of those most affected by AI technology: the public [21]. To validate this argument, we conducted an online consultation (N = 251) assessing the public value of AI for citizens using the PV scale [15], and analyzed the representation of PVs in the AIA, applying qualitative content analysis with values of the PV landscape as deductive themes [19]. Our results show that the regulation of AI organizations creates value for EU citizens across all PV dimensions, and PV is strongly related to societal trust and intentions to use, purchase and recommend regulated AI. At the same time, the AIA places more emphasis on the IU and ME dimensions compared to the HA and PS dimensions.

This study has multiple advantages for research and practice. We provide new evidence in the growing body of research on the values content and public value of AI governance. In contrast to previous studies focused on prescriptive documents, our analysis examines the recently passed AIA. Our approach places the individual at the center of AI governance evaluations. Thereby, we address a central criticism of AI ethics and the EU having lost their focus on citizens [2], [13], [21], [22]. It also accounts for non-economic dimensions of value, and introduces respective assessment tools, which is new to AI studies, but crucial to understand AI's real impact on humans and societies [18]. Thus, practitioners are equipped with theory and tools to gain a more detailed understanding of the value

contribution of their AI-related actions. Results can serve as a yardstick [8] and help to derive improvement strategies [23]. In this regard, our findings on the AIA suggest that, from a citizen perspective, the EU AI governance approach heads in the right direction: the binding regulation of AI organizations creates PV across all PV dimensions. However, additional efforts to strengthen the HA and PS dimensions could promote a more balanced and thus sustainable PV creation, ultimately enhancing trust in AI. Overall, this underscores the value of emerging PV theory for AI governance in achieving AI that serves the common good.

II. Normative AI value alignment

A key obstacle to AI value alignment is finding a set of morally right principles that should govern the technology given that there is no single true moral theory and that we live in a pluralistic world [24]. Global overlapping consensus on principles that humans agree on, irrespective of varying religious and philosophical beliefs offers a solution to this problem [25]. Regarding AI, the most prominent approaches to finding such consensus are universal human rights and convergence studies on ethical AI principles.

A. Human rights

Human rights represent a common ground of rights codified in international law that people hold regardless of the society they live in. These rights are supported across cultures internationally and have proven effective in dealing with a multitude of challenges. An advantage of this approach is that it allows direct alignment with holistic definitions of societal prosperity, compared to one-dimensional economic ones, which should be the overarching goal for systems of data governance [26]. Although some questions remain about the necessary updates to human rights in the digital era, it therefore seems appropriate to aim to align AI with human rights [24]. It is also the most commonly suggested governance regime in AI policy documents [27].

B. AI ethics

In recent years, virtually all actors with a connection to AI have authored or promoted ethical principles. Ethical guidelines share the purpose of providing normative guidance to AI development, deployment, and use but vary in their targeted audiences in terms of geography, player types, scope, and depth. Nevertheless, some studies found a normative core around the principles of transparency, justice and fairness, non-maleficence, responsibility and privacy [2], [27], [28]. However, questions on value prioritization, conflict resolution, and enforcement mechanisms remain unresolved. In addition there are significant differences between stakeholders regarding the promoted principles, their interpretation, and implementation recommendations [28], [29]. This causes a systematic bias, as most documents are published by private and governmental organizations, whereas the public is underrepresented [27], [28]. A true consensus on values that serves to guide AI ethics must represent the preferences of all AI stakeholders and especially the public [13], [24]. Furthermore, values are always socially embedded and do not carry meaning before they are operationalized [30]. Promoted principles and values that initially represent abstract and vague concepts thus allow to cover up potential disagreement with the claim for meaningful consensus [31]. In addition, different streams of research have questioned the effectiveness of AI ethics to safeguard the potential negative influences of AI on society [2]. Ethical guidelines do not seem to impact companies and their products [32], possibly due to procedural weakness resulting from their non-binding nature and missing integration into larger governance ecosystems [28], [31].

C. The EU's AI governance approach

The EU has decided to combat these shortcomings by developing the first comprehensive legal framework on AI grounded in both described normative AI value alignment approaches. In 2018, the European Commission formulated its vision of a cutting-edge AI governed by human-centric rules to ensure that AI systems are committed 'to humanity and the common good' [33]. To support the vision's implementation a High-Level Expert Group (HLEG) developed non-binding ethical guidelines comprising four ethical AI principles, the EU's fundamental rights and common values as well as seven requirements that render trustworthy AI [34]. To solve respective potential trade-offs and dilemmas, the HLEG recommends that AI practitioners apply a reasoned, evidence-based approach rather than intuition. Furthermore, end-users and society should strive for alignment with societal values and control their adherence. Aligned and thus trustworthy AI is assumed to achieve a broader adoption [35]. However, research shows that, in contrast to approaches that factor in citizen experiences and concerns, ethical AI information does not impact citizen trust in AI or acceptance of AI policies [36].

In addition to ethical guidelines, the EU has conducted studies to evaluate the impact of different forms of AI legislation. Experts judged coordinated approaches of member states' ethical frameworks (soft-law) to be more beneficial than a uniform European legislation (hard-law) [6]. They estimated a potential of €295 billion in additional GDP as well as 4.6 million jobs in 10 years. Impacts of the policy options on qualitative dimensions of social acceptance, legal certainty, projected EU values, facilitated pan-EU datasets, and emphasized EU-niches were assessed as more positive for uniform EU legislation. In another assessment [5] policy options were extended to five and experts evaluated their economic (10 pages), social (1 page), environmental (1 page), human rights (1.5 pages) and safety impacts (0.5 pages). A regulatory framework for high-risk AI applications including ex-ante conformity assessment, ex-post supervision and voluntary codes of conduct for non-high-risk AI solutions was judged as most beneficial.

Based on this preparatory work, the EU decided to develop the AIA for all risky AI applications and types, as well as sectors except the military. Its primary goal is to establish a functioning EU internal market by setting harmonized rules for the development, deployment, and use of AI throughout

all member states. Moreover, it aims to 'enhance governance and effective enforcement of EU law on fundamental rights and safety requirements applicable to AI systems' [4]. Together, this serves to increase user trust. Although many have celebrated pioneering efforts, others have criticized the lack of alignment with societal values also resulting from limited societal participation during policy development [22].

III. AI GOVERNANCE PUBLIC VALUE(S)

A. AI governmental values

Public strategies and policy documents concerning AI turn governmental aspirations about moral values, governance enforcement mechanisms and impacts into explicit action plans. Multiple emerging studies apply content analysis to such documents to distill promoted principles and their constituting, normative values as well as benefits and risks [13], [37]. Increasingly, studies refer to deductively assessed ethical principles [16] or inductively derived values [12] as *Public Values*. Others conceptualize *Public Value* as the impact of AI on the public sector, building on value ideals of public administration traditions [38] in [13], [39]. They find that in their documents governments stress benefits compared to risks of AI [16], [39] invoking that AI systems functioning as intended inevitably enhance public, governmental value by boosting economic growth [40]. AI is promoted as a competitive advantage for governments [10], [41] by increasing instrumental values of efficiency, effectiveness, productivity and quality of public services [12], [39]. Throughout these governmental documents participation strategies for citizens, who are mainly regarded as AI users or workers, and broader PVs are under-emphasized [13].

In general, research on the public value(s) content of governmental documents has focused on promoted governmental ideals and the benefits or risks of AI for the effectiveness and efficiency of public administration, rather than on the representation of societal values or the potential for value creation for the public at large. This is despite acknowledgments that PV is not governmental [14] and that it represents a shortcoming to ignore societal implications of AI [12]. Moreover, a contemplation of citizens as users or economic resource [40], [42] foils AI technology, which already reshapes lives, relationships, and environments of all citizens at least indirectly [43]. Such thinking, typical for the New Public Management paradigm, leads policy analysis to focus on external efficiency, effectiveness, and user satisfaction at the expense of inherent, broader PVs [14], [44]. The resulting restriction of value to financial performance disregards that economic value is only an output acting as a surrogate for broader non-mission-based outcomes [45] like health, happiness, safety and satisfaction ultimately important to people [23]. In the end this could even steer management to weaken PV [46]. Analyses of policy documents that account for broader, non-normative public values and value impacts are lacking [16], [18], [47].

B. Public Value Theory

The criticism of AI value alignment, respective EU policies and AI governance value studies boils down to two root causes: a too narrow, utilitarian definition of value and overlooking humans as the ultimate arbiter of value. A newly emerging PV approach [48] addresses and has the potential to overcome these shortcomings, thus fueling progress in the theory and practice of PV creation through AI and its regulation. It defines PV as the contribution of an organization to the public, just as the shareholder value represents the contribution of a private business to its shareholders, and comprises normative and non-normative research streams. The former focus on: 'i) the rights, benefits, and prerogatives citizens should be entitled to, ii) the obligations of citizens to society, the state, and one another; and (iii) the principles on which governments and policies should be based' [49]. The latter is concerned with values actually held in society and individual need fulfillment as the foundation of the social evaluation of value [19]. In the following we will expand on Meynhardt's non-normative, psychological PV theory.

C. Meynhardt's psychological Public Value Theory

Meynhardt [19] builds on [50], who defines value as the result of a relationship between a valuing subject and the valued object, where value is the quality of the relation expressed as desirability or preference. Hence, PV is defined by the quality of the experienced relationship between an individual and the public. Consequently, PV is both objective and subjective, as it refers to shared values bound to subjects, cannot just be delivered by organizations, but needs to be perceived and valued by individuals considering the public. As such, PV is more than just the mere sum of individual values [15]. It emerges from micro-level interactions, stabilizes, and subsequently serves as a point of reference for social evaluations embedded in basic needs that concern deficits [19]. Value is created when an evaluated object fulfills a subject's basic needs, or is destroyed when it undermines them. According to cognitive-experiential self-theory [51], four coequal, basic needs exist, which Meynhardt translated into basic value dimensions (see Tab. I). The dimensions are an empirically validated basis for social valuing [15]. Several tools exist to assess the content and quality of PV creation, two of which we employ. First, the PV landscape [19], which is a value classification scheme for the public sector in a democratic society. It combines and relates 16 PVs, including eight nodal values of the PV inventory [14], along the four PV dimensions. These also form the PV scale [15], as our second tool, which assesses PV with three items for each dimension.

IV. RESEARCH METHODOLOGY AND RESULTS

To answer our research questions, we use an empirical PV approach. First, we assess the PV of AI regulation by conducting a survey including the PV scale [15]. Second, we analyze which PVs are embedded in the AIA [4] relying on qualitative content analysis and the PV landscape [19].

TABLE I
RELATION BETWEEN BASIC NEEDS AND VALUE DIMENSIONS [19].

Basic need for . . .	Translation into a motivation for . . . (e.g.)	Value dimension
positive self-evaluation	• positive self-concept and self-worth • consistent relationship between self and environment • feeling of high self-esteem (in social comparison)	moral-ethical
maximizing pleasure and avoiding pain	• positive emotions and avoidance of negative feelings • flow-experience • experience of self-efficacy due to action	hedonistic-aesthetical
gaining control and coherence over one's conceptual system	• understanding and controlling environment • predictability of cause and effect relationships • ability to control expectations to cause desired outcomes	utilitarian-instrumental
positive relationships	• relatedness and belongingness • attachment, group identity • optimal balance between intimacy and distance	political-social

A. Study 1: The EU AI Act's Public Value

1) Method: For our survey sample we followed a purposive sampling approach at the country level, which is the most common form of non-probabilistic sampling [52]. The sample was recruited via the platform www.pollfish.com which relies on Random Device Engagement. Our final sample was aged between 19 and 73 (M = 41, SD = 13.08) and included participants from Germany (n = 86), Finland (n = 85) and Portugal (n = 80) after excluding participants with a response time <5 minutes, with a wrong answer in the control question or straight-line responding from the overall sample (n = 296). The countries were selected based on an EU public consultation, which found that actors in Finland were more AI-friendly and less supportive of regulation, while those in Portugal were the opposite. Germany showed moderate views [53]. Participants reported that their understanding of AI is 'none' (2%), 'basic' (40%, n = 101), 'good' (37%, n = 92), 'deep' (12%, n = 29) or 'very deep' (9%, n = 23). Regarding the frequency of using AI most respondents stated dealing with AI almost every workday (26%, n = 66), once a week (25%, n = 63), less than once a week (19%, n = 48), daily (15%, n = 30) or almost never (13%, n = 33).

Answers were collected between April 28, 2024, and May 08, 2024. The online survey started with standard sociodemographic questions (e.g., age, language, education). AI expertise and engagement frequency were assessed applying the scales of [54]. Next, participants were asked to rate the PV impact of AI regulation along the 12 items of the PV scale [15]. Moreover, we included questions to analyze the perceived trustworthiness of the EU in regulating AI organizations [55], and assessed the intention to use, purchase, and recommend regulated AI systems on a Likert scale from 1 ('I totally disagree') to 5 ('I totally agree') [56].

2) Results: First, we verified the reliability of the four subscales, which was $\alpha > 0.77$ and thus acceptable [57]. Across the four PV dimensions, the value impact of a regulation of organizations developing, deploying or using AI was rated closer towards the maximum (6) than to the minimum (1) with IU (M = 4.591, SD = 0.832), ME (M = 4.523, SD = 1.059), HA (M = 4.451, SD = 0.972) and PS (M = 4.396, SD = 0.875). The same pattern was found for the 12 items (see Tab. II).

TABLE II
DESCRIPTIVE RESULTS OF ALL PV ITEMS PER BASIC VALUE DIMENSION.

Dim	Regulation of AI orgs. is contributing to	Mean	STD
HA	Quality of life in the EU	4.63	1.11
IU	Orgs. being professionally recognized	4.62	1.03
IU	Orgs. performing well in core business	4.61	0.94
ME	Orgs. acting ethically correct	4.59	1.22
ME	Orgs. behaving fair	4.54	1.12
IU	Orgs. being economically viable	4.54	1.05
ME	Orgs. behaving decently	4.44	1.24
PS	Positive social relationships in the EU	4.43	1.01
HA	Orgs. being enjoyable for people in the EU	4.41	1.09
PS	Orgs. creating a community in the EU	4.40	1.06
PS	Social cohesion in the EU	4.36	1.10
HA	Orgs. being pleasant for people in the EU	4.34	1.12

Univariate ANOVAs with repeated measures are applied for cumulated value ratings of the PV dimensions and single items. The Huynh-Feldt Epsilon (sphericity rejected: Mauchly-W(5) = 0.862, $p < 0.001$, = 0.918) indicates a significant relation between the perceived value and the PV dimension (F(3,738) = 4.482, p = 0.004, p2 = 0.018, n = 247), as well as PV single items (sphericity rejected: Mauchly-W(65) = 0.253, $p < 0.001$, Huynh-Feldt = 0.810; F(11,2519) = 3.847, $p < 0.001$, p2 = 0.017, n = 230). However, Dunn Bonferroni post-hoc tests for pairwise dimension comparisons show that only the IU dimension is rated significantly higher than the PS dimension ($p < 0.001$), with a weak effect size (r = 0.135). Thus no relevant difference can be implied [58]. At the item level, the contributions of the regulation of AI organizations to the "quality of life" and "organizations acting ethically correct" were rated significantly higher ($p < 0.05$) than to "social cohesion" and "organizations being pleasant for people".

TABLE III
REGRESSION RESULTS, SE IN PARENTHESES. ***P<.01, **P<.05, N=228

	Beh. intent reg. AI	Use of reg. AI	Purchase of reg. AI	Recomm. of reg. AI
PV	.345*** (.079)	.251*** (.093)	.417*** (.103)	.368*** (.092)
EU trust	.180** (.086)	.117 (.090)	.249** (.124)	.345*** (.103)
AI eng.	.135** (.056)	.203*** (.042)	.152*** (.057)	.174*** (.047)
Reg. AI att.	.087 (.063)			
AI exp.	.109 (.070)			
Anal. work	-.047 (.091)			
Higher ed.	.123 (.094)			
Finland	-.021 (.102)			
Constant	.686** (.237)	1.924*** (.342)	.420 (.311)	.292 (.303)

Multivariate regression results ($F(4, 244) = 37.868$, $p < 0.001$, $n = 248$) show a significant correlation of PV and trust, and reveal that the perceived PV of AI regulation, trust in the EU and engagement frequency with AI significantly explain 38.7% of the variance of a positive behavioral intention towards AI, which is a strong effect according to Cohen [58]. Robustness tests verified the regression results (see Tab. III). Since behavioral intention towards regulated AI, PV and trust were aggregated items, we also conducted regressions for single items showing a significant correlation ($p < 0.01$) between the intended use, purchase, and recommendation of regulated AI and the perceived PV of AI, as well as a significant correlation between trust and the intended purchase ($p < 0.05$) and recommendation of regulated AI ($p < 0.01$).

B. Study 2: Public Values in the EU AI Act

1) Method: We analyze the values that constitute the AIA, applying qualitative content analysis [59]. As a traditional approach to textual analysis, it has been recommended to understand values, their meaning and relations conveyed in texts [60]. Following Mayring and Fenzl [59], descriptive semantic coding was conducted independently by two researchers in two steps using the program Atlas.ti and compared to AI-generated results of the program MINQDA. We used the four PV dimensions and 16 nested PVs of the PV landscape [19] as a theory-deductive theme system. As a holistic concept, the PV dimensions [15] encompass all basic human needs and thus provide a comprehensive framework for capturing the values of the AIA. For the coding process, we considered PV dimensions as deductive themes, PVs as deductive codes, the definitions of the selection criteria as words and the level of abstraction of the category system and the units of analysis each on the sentence level. In three phases of coding, sentences of the AIA were analyzed for their PVs content by assigning the predefined PVs codes, if applicable. Based on the selected sentences, we inductively derived interpretations of the PVs by the EU as stated in the AIA. The frequency of each code was counted and summed up per value dimension, indicating their relative importance.

2) Results: The qualitative analysis resulted in a complete, hierarchical category system comprised of four PV dimensions and 16 entailed PVs as theory-derived themes, including the associated frequencies of codes indicated in brackets (see Fig. 1; a detailed overview can be found in the appendix). The AIA places the strongest emphasis on the IU dimension (602) and specifically the robustness of AI solutions (340), which mostly deals with product liability and mitigation of unintended harmful consequences as well as openness (159). Most prevalent robustness codes include compliance (48), control (43), conformity assessment (33), and systemic risk reduction (32), whereas openness mainly concerns transparency (88) and traceability (19). This emphasizes the focus on structured risk mitigation safeguards and clear liability structures in the event of harm, while sustainability (19) remains marginal. The ME dimension follows with 363, reflecting the grounding of the Act in fundamental rights. Codes in integrity (156) and human dignity (138) emphasize justice, legality, protection from manipulation, and non-maleficence. Privacy (62) also plays a central role, reinforcing the prohibitions against surveillance and profiling. However, the low attention to diversity (7) reveals a gap in inclusiveness beyond rights-based protections. The PS (300) and HA (243) dimensions are only moderately represented. Political-social value is driven by compromise (128), equality (76), and innovation (64) and less by citizen involvement (32). These highlight institutional flexibility in the EU, fairness, and support for SMEs, for example, by establishing testing environments. Hedonistic-aesthetical value is constituted by service quality (104) and reliability (90), emphasizing effectiveness and efficiency of the EU AI Act's execution and AI stakeholder capabilities. Elements of common good (34), such as trust and public interest, reflecting aspirations for social well-being and cultural heritage (15) are less represented.

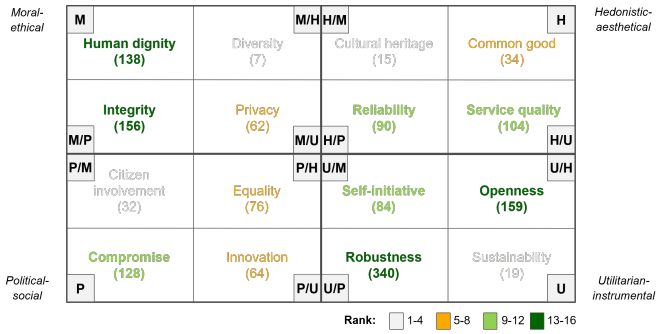

Fig. 1. PV landscape [19], mentions per value dimension in brackets; color intensity reflects ranking

V. Discussion

The EU is the first global actor to adopt a hard law approach towards AI. Based on the EU Charter of Fundamental Rights and HLEG ethical guidelines, the AIA [4] establishes harmonized rules for AI development, deployment and use across all EU countries, business sectors and types of AI systems. The regulation is promoted as a crucial step to ensure human-centric AI: aligned with societal values and serving the common good. Studies assessing the operationalization of such governance goals so far have leveraged qualitative and quantitative content analysis techniques to analyze the public value(s) content of governmental strategy and policy documents. However, they define public values as ethical or public management ideals instead of societal values, and public value as value for public administrations instead of citizens. Applying Meynhardt's [15], [19] psychological PV theory and tools, we have therefore reverted the focus back to citizens by assessing the value of binding AI regulation in the EU for the public and the PVs content - as values that are actually held by society and defining the quality of the relationship between individuals and society, of the AIA. Our results help to advance theory and practice of AI ethics, governance and PV itself.

A. Implications

AI technology has rapidly spread towards most areas of life and impacts all members of society. AI ethics has gained popularity to provide moral standards that ensure to govern these impacts. However, ethical guidelines have been criticized for being opaque, expert-led and biased towards private company interests [2], [3]. Moreover, corresponding discussions tend to focus on AI technology itself rather than humans and the broader systems it operates in [61]. Meynhardt's psychological, non-normative PV approach allows us to shift the focus to the individual with its diverse needs and values. It states that PV is not delivered or defined by producers, in this case experts and regulators, but appreciated by individuals in their relationship to society. Technology and ethics experts can therefore help to guide value judgments, yet ultimately, value must be perceived and experienced by citizens. So far, tools that allow the elicitation of public opinions and value judgments are scarce [62], especially when broader notions of value including societal and political dimensions are to be considered [18]. PV measures help address this shortcoming. As demonstrated, the PV scale can gather public opinions grounded in individual evaluations against basic psychological needs that include but go beyond economic utility and are not only driven by self-interest but involve public goals, aspirations and principles [63]. Thereby, calls to account for broader notions of value when assessing the benefits and risks of AI are answered [18], [61]. Moreover, assessments are not bound to Western ideals of morality but allow to account for local value systems and value plurality, which is essential for AI technology. Overall, PV can add a non-normative, holistic perspective to the AI ethics discussions dominated by private businesses and experts representing the AI elite [3].

Besides AI ethics, PV benefits public and private organizations taking decisions concerning AI. These players require tools to validly predict and audit the value of their choices for the public as the result of satisfied needs. Needs function as a central influence on human attitudes, motivation and volition [19]. Moreover, the extent to which AI technology and respective policies align with societal values and preferences as well as the perceived benefits and risks will determine their acceptance [64]. Results of PV evaluations therefore provide the missing external perspective of citizens, who ultimately fund and direct resources to governments through democratic processes [19] or purchase products. They furthermore enable AI stakeholders to engage with the public. Overall, they can thus understand 'what they should stop doing, what they should continue doing, and what they might start doing' [9]. Our results allow us to derive detailed recommendations for the EU in its quest to ensure human-centric AI technology. The fact that the EU should closely observe the PV impact of its AI-related actions is underlined by the strong correlation found between PV judgments and attitudes towards AI regulation, as well as the intention to use, purchase and recommend regulated AI. In short, citizens have positive behavioral intentions for regulated products and services when they perceive the regulation to add value. We found an equally strong relation of AI regulation's PV to social trust and perceived trustworthiness of the EU concerning the regulation of AI organizations. It seems obvious that actions that contribute to positive self-evaluations, pleasure, control over one's conceptual system, and positive relationships increase trust. If a central objective of the regulation of AI is to gain the trust of the citizens in AI technology and therefore increase its adoption, PV seems to be a good predictor and can counteract the current conflation of risk acceptance with trust and technology adoption [35]. We expect that this relation is not exclusive to AI regulation but could also be transferred to other AI applications and actions. Our study has demonstrated how two of Meynhardt's tools can be leveraged to assess and steer the PVs content and PV impact of AI governance.

First, perceptions of individuals for the public can be measured and analyzed by asking people what they think and feel using the PV scale. Frequent checks of the perceived reality of AI, and the effects of its regulation in comparison to the intended and expected impact will allow the EU to gain a detailed understanding of the relation between its actions and value creation. In turn, AI-related activities can be steered into meaningful directions for societal members. In addition, measuring whether AI-related actions create realities that satisfy citizen needs and expectations over time ensures that changing citizen preferences are considered and that laws, services and products flexibly adapt to the needs of the environments they operate in. Ultimately, this equips EU politicians and regulators with richer, up-to-date data on values and value impacts instead of relying mostly on expert recommendations for their decisions. Our results show that, currently, regulation of AI organizations creates PV for citizens in Germany, Portugal and Finland consistent across all PV and thus basic need dimensions and items. The recently announced decision to loosen up regulation of AI with an AI Continent Action Plan can therefore be questioned.

Second, PVs of public administration can be distilled from policy documents like AI regulation and strategies and compared to those of citizens. This enables regulators and other players conducting internal or external assessments of the quality of regulations to identify blind spots or areas where promoted or protected values are under- or overemphasized. Our findings demonstrate that the AIA has an unbalanced value orientation. It focuses on IU as well as ME values, following a predominantly technocratic logic emphasizing control for risks to human rights and privacy, compliance and product liability. PS PVs like citizen involvement, equality and innovation as well as HA values like cultural heritage and the common good are underrepresented. These values are related to empowerment, democratic participation and pluralism, which serve positive emotions and are critical for long-term societal legitimacy, technology uptake and broader societal well-being like societal cohesion and peace. Neglecting them could lead to future unfulfilled needs, which will negatively impact citizen satisfaction and in turn trust and AI acceptance. Therefore, the EU should strive for more

balance between PV dimensions. Moreover, by comparing and discussing results of PVs of citizens and public policies, a process of deliberation and mutual understanding could be started to find true consensus on values which rapidly evolving AI should be aligned with [29]. Eliciting human evaluations will likely also lead to a better understanding of underlying values that shape evaluation of AI. Besides, it could allow the EU to deliver on the stated goal of making public participation an essential pillar of AI governance [33].

Lastly, this research has advantages for PV theory itself. Research applying the PV scale and landscape has so far focused on the PV impact of private businesses. We provide first insights on the applicability of the PV scale for public administration and the PV landscape in the legal realm. Thereby, we also test the more general usability of content analysis and broad PV taxonomies to distill meaning from legal texts, which has been promoted to make legal analysis more consistent with the epistemological underpinnings of social science research. Our multi-method approach also adds empirical evidence to the theory- and case-study-dominated PV domain [15].

B. Limitations

Despite its grounding in rigorous theory, we note several shortcomings that could restrict our results. Methodological limitations may compromise the results of the qualitative content analysis of the AIA. In general, the value subscription of the PV landscape [19] does not emerge from empirics. Since values are per se subjective and can always be valued from other perspectives, it can therefore be disputed. Furthermore, values are dependent on the subject-object relationship, and are therefore only valid for the relation of citizens and regulation in a democratic society. Coding was conducted by two independent researchers and discussed if needed. Nevertheless, the replicability of coding could be limited, and reliability problems could occur, stemming from the context-sensitive meanings of values as codes, and a possible influence of the knowledge and history of the coder. In addition, our structured, quantitative assessment assumes that topics mentioned more frequently are more important for the regulators of AI systems. Even though it seems likely that important values require more holistic and thorough safeguards, this could always be biased. Additional research and validation are therefore promoted to confirm the reliability and validity of this approach. For Study 2, we collected empirical data with a non-probabilistic online survey. Prone to self-selection bias and limited in its generalizability and validity, this approach limits the external validity of our results. Therefore, we motivate future research to validate our findings with representative samples and a distribution of the survey across other platforms.

VI. Conclusion

The objective of this paper was to assess the public values and value of the AIA using the PV landscape and scale. We demonstrated how Meynhardt's psychological PV approach and tools can complement AI ethics and New Public Management approaches by refocusing AI governance on the individual with its diverse needs as the ultimate arbiter of value. Results of an online survey showed the potential of binding regulation of AI organizations to provide value across all PV dimensions to EU citizens. In contrast, the AIA is evaluated as an unbalanced legal framework that emphasizes IU and ME value dimensions compared to PS and HA ones. While the regulation is therefore as a step in the right direction it could further be improved by balancing value creation across dimensions. This should result in better need satisfaction that is appreciated by individuals and shows high correlations to trust and intentions to use AI.

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