

Vogel, Rick; Vogel, Dominik; Liegat, Marlen Christin; Hensel, David

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From social categorization to implicit citizenship theories: Advancing the socio-cognitive foundations of state–citizen interactions

Rick Vogel  | Dominik Vogel  | Marlen Christin Liegat  | David Hensel 

Department of Socioeconomics, Universität Hamburg, Hamburg, Germany

Correspondence

Rick Vogel, Department of Socioeconomics, Universität Hamburg, Von-Melle-Park 9, Hamburg 20146, Germany.
Email: rick.vogel@uni-hamburg.de

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Abstract

Public administration research has recently paid increasing attention to public employees' social categorization of citizens and the consequences thereof for administrative decision-making. We advance this line of scholarship by theorizing the concept of implicit citizenship theories (ICTs) and elaborating it in four sequential empirical studies. ICTs are implicit assumptions about citizens' typical or ideal characteristics that emerge freely and associatively in the minds of public employees and guide cognitive categorization. We investigate the content and structure of these ICTs and extract a taxonomy of six distinctive, yet interrelated, prototypes of citizens that public employees bring to their jobs. As implicit theories influence attitudes and behaviors, ICTs are relevant to the quality of public services delivered to citizens. This is particularly evident where negative prototypes give rise to unequal treatment. Practical interventions to change those prototypes might target their individual beholders or the social context that makes ICTs accessible.

Practitioner points

- Public employees bring cognitive schemas about ideal/typical citizens to their work, organized in a taxonomy of six prototypes of citizens and building implicit, everyday theories about citizens.
- Public managers should be aware of employees' implicit citizenship theories because they might influence behaviors and decisions and, in turn, unintentionally violate the norms of equity and neutrality.
- If negative prototypes of citizens prevail, public managers might “unfreeze” them by exposing employees to contrasting signals, reducing cognitive load, or inducing goals to think of citizens in counter-prototypical ways.
- These interventions are likely to be more effective if implemented repeatedly and immediately before interactions with citizens.
- However, changing implicit citizenship theories might be most effective when managers alter the public service ecosystem, as the accessibility of implicit theories is contingent on contextual cues from the social environment.

INTRODUCTION

"Conceptions of the job imply conceptions of the clientele. One cannot practice without an implicit model of the people on whom one is practicing"
(Lipsky, 2010, p. 152).

Scholarship in public administration (PA) has recently paid increasing attention to public employees' social categorization of citizens. Related research in street-level bureaucracy (e.g., Bisgaard & Pedersen, 2022; Raaphorst & Groeneveld, 2018) and representative bureaucracy (e.g., Bradbury & Kellough, 2007; Gade & Wilkins, 2013)

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shows that employees' attitudes and decisions may differ substantially depending on what characteristics and behaviors citizens exhibit in interactions with the state. Some studies have examined how public employees respond to particular stimuli sent by citizens and drawn inferences pertaining to the salience of specific categories, most frequently gender (Bisgaard & Pedersen, 2022) and ethnic stereotypes (Petersen, 2021; Ratzmann, 2021). Other studies have focused on similarly narrow categories that are predefined upon theoretical considerations or implemented in bureaucratic procedures (Moynihan et al., 2022), such as the deservingness of citizens (Jilke & Tummers, 2018; Ratzmann, 2021; Senghaas, 2021). No prior study, however, has theorized and explored the broader taxonomy of generalized social categories of citizens that emerge freely in the minds of public employees. This is a missing piece in the puzzle of social cognition in state–citizen interactions because the cognitive filters through which public employees perceive and respond to citizens are likely to have a profound impact on their job-related attitudes, behaviors, and decisions (Allport, 1954; Fiske & Taylor, 2021).

What public employees think about citizens is relevant not only from a scholarly point of view but also in practical terms. A key lesson from the field of service management is that the delivery of public services interferes with the whole-life experience of service producers and users (Osborne et al., 2022). Part of the experience that both sides bring to the service process is their assumptions about each other, often held at subconscious levels. On the part of frontline employees, such “implicit customer theories” (Hommelhoff, 2017) foster the perception of users as customers of a particular category, with considerable impact on the process and outcomes of service delivery (Sutikno et al., 2023). Public managers who are in charge of the operational quality of public services and the overall service strategy are challenged to act when employees' images of citizens are negatively charged. Such attitudes may be reciprocated by the service users who, in turn, may withdraw from the co-production of the service. Once this vicious cycle is activated, it is likely to result in a decline of service quality at the expense of public value (Osborne et al., 2022). These consequences are of obvious political and practical concern where negative images of citizens give rise to discriminant behaviors that undermine fair and impartial treatment, often with severe consequences for citizens' professional and private lives (e.g., Senghaas, 2021). Recognizing employees' implicit theories about citizens may help public managers to respond to these adverse conditions of service delivery, for example, in the selection of personnel, in communicative interventions, or in the design of trainings.

The content and structure of the social categories that public employees hold about citizens and bring to their jobs thus deserve more attention in PA scholarship and practice, given the field's enduring interest in state–citizen interactions (Guy, 2021; Jakobsen et al., 2019). We

address this gap both theoretically and empirically. In theoretical terms, we integrate and advance previous research on public employees' social categorization of citizens by further developing the notion of “implicit citizenship theories” (ICTs) (Liegat et al., 2022). By ICTs, we mean people's everyday or lay theories about typical or ideal characteristics of citizens. We argue that ICTs serve as generalized interpretive frames through which public employees process experiential cues from specific interactions with citizens, providing public employees with social categories (i.e., prototypes) for heuristic judgments and decision making. In empirical terms, we conduct a series of qualitative and quantitative, exploratory, and confirmatory studies to extract the content and structure of ICTs in independent samples of public employees in Germany. We apply a rapid response measure (RRM) (Asseburg et al., 2020; Meade et al., 2020), which allows us to account for the “implicit” in ICTs. This is helpful because responses under speeded conditions are more likely to reflect the tacit dimension of what public employees think of citizens than self-reports in traditional questionnaire designs.

Results suggest that public employees indeed have patterned associations with citizens, reflecting their a priori theories about citizens. Our findings confirm six interrelated, yet distinct, prototypes (i.e., *Engagement*, *Kindness*, *Determination*, *Reticence*, *Neediness*, and *Foreignness*) that constitute the overarching structure of ICTs. With this taxonomy, we improve the understanding of state–citizen interactions and their cognitive underpinnings. Given the importance of such interactions for outcomes on both sides of the relationship (Jakobsen et al., 2019), our study contributes to the various literatures that are concerned with state–citizen interactions, including precursors of a social cognition approach in recent PA scholarship (Liegat et al., 2022; Raaphorst & van de Walle, 2018). Practitioners learn from the results that public employees bring preexisting assumptions about citizens to their jobs that might be unrecognized in everyday work. ICTs deserve practical attention because they might translate into intentions and behaviors, thus having an impact on the treatment of citizens and the quality of delivered services. We discuss interventions to “unfreeze” prototypes, targeting both individual beholders and the social context in which ICTs emerge.

THEORY

Social categorization in state–citizen interactions

Social categorization is the process by which people categorize themselves and others into distinct social groups (Turner et al., 1987). While not all previous studies on public employees' social categorization of citizens subscribe to social categorization theory and apply this

terminology, many researchers in this field would support the view that the way in which public employees encounter and respond to citizens may depend on how well the target person (i.e., the citizen) matches broader social categories. Scholarship in social cognition and beyond has demonstrated that categorization is a universal feature of human cognition and enables the processing of otherwise overwhelming amounts of information (Banaji & Greenwald, 2013; Fiske & Taylor, 2021). However, PA scholarship differs considerably in how, if at all, this perceptual and often tacit process of social categorization is reflected in empirical studies.

Previous research has predominantly established direct links between particular stimuli emanating from individual citizens and the responses of public employees. In this behaviorist view, citizens send various kinds of signals to which public employees respond with differential attitudes, behaviors, and decisions. There are many studies on employee responses to socio-demographic stimuli, such as ethnic cues (Petersen, 2021) or membership in social classes (Raaphorst & Groeneveld, 2018). Some other research examines how stimuli emerging from citizens' competencies and motivations, such as helping intentions (Guul et al., 2021) or administrative literacy (Döring & Jilke, 2022), trigger public employees' responses. Still other studies show that responses may be stimulated by citizens' behaviors, such as hard work (Jilke & Tummers, 2018). At this broad range of citizen characteristics and behaviors, stimuli may also interact when co-occurring in the same person (Bisgaard & Pedersen, 2022). PA scholars have also demonstrated that the context in which public encounters occur matters for the categorization. For instance, conditions of high workload (Andersen & Guul, 2019) and the region of residence (Grissom et al., 2009) can have an impact on how public employees respond to citizen stimuli.

Whereas researchers have theorized cognitive processes to mediate the stimulus-response link (Jilke & Tummers, 2018; Raaphorst & Groeneveld, 2018; Raaphorst & van de Walle, 2018), they have only selectively and mostly indirectly examined the cognitive filters through which public employees perceive and respond to citizens. An example is research on stereotypes, which focuses on the processing of specific signals (such as gender or race) and draws inferences from employees' differential responses to these cues on the presence of underlying social categories that are charged with prejudices (Andersen & Guul, 2019; Bisgaard & Pedersen, 2022; Petersen, 2021). Other research places a similarly narrow focus on specific categories that emerge from bureaucratic procedures, such as the worthiness or deservingness of citizens (Jilke & Tummers, 2018; Ratzmann, 2021). However, scholarship is still particularly incomplete with regard to the a priori categories that feed into this process of social categorization. Since stimuli from citizens are likely to be filtered through the generalized images of citizens that public employees bring to their work in the

first place (Lipsky, 2010), a better understanding of these cognitive structures will help further illuminate the cognitive dimension of social categorization and its attitudinal and behavioral outcomes.

Implicit theories

Scholarship in social cognition suggests that all human cognition and behavior are guided by mental maps, without which it would be impossible to process the massive load of information from the social environment and transform it into actions (Banaji & Greenwald, 2013; Fiske & Taylor, 2021). From this perspective, human cognition is always schematic thinking, as it processes incoming signals through cognitive filters that are stored in long-term memory where those filters have sedimented from past experience and socialization. From this perspective, it follows that the human mind is full of a priori categories and that it therefore largely operates in a mode of categorizing incoming signals from the social environment. As Lipsky (2010) states, when public employees' work involves people as clients, those employees will have an implicit view of the people they process, just like they have a concept of their work.

We refer to the system of interrelated and overlapping categories into which single categories combine as *implicit theories* (Liegat et al., 2022; Vogel & Werkmeister, 2021). Implicit theories are not formal academic theories, but informal everyday theories that laypeople use to make sense of the social world, including other people, situations, objects, events, and the relationships among these people and things. Implicit theories emerge from prior experiences with the members of the social categories they define, but they may also be learned without primary experience, through socialization (E. R. Smith & Zárate, 1990). The long-term formation of implicit theories, their repetitive use, and their storage at preconscious levels of memory make them difficult to "unlearn" (Fiske & Taylor, 2021). Research has shown that implicit attitudes are not easy to correct intentionally, even if counter-evidence is available (Marvel, 2016). Interventions into implicit attitudes thus often have only short-term effects, with these attitudes bouncing back to their default after a short delay (Lai et al., 2016). This can be a particular problem where implicit theories give rise to stereotyping, prejudice, and discrimination.

The "implicit" in implicit theories may suggest that people's theorizing about the social world is beyond any conscious access and control, but scholarship has shown that, upon closer reflection, people have some introspection into their everyday theories (Lord et al., 2020). However, when in use, implicit theories still predominantly operate at preconscious levels, where important parts of human cognition and decision-making reside, and trigger quasi-automatic responses to stimuli (Kahneman, 2011). Hence, scholarship on implicit theories often evokes dual-

process models, which suggest a duality of human information processing (Evans, 2008). In a reflective mode, thinking is slow, rule-governed, and conscious, whereas in a more reflexive mode, it is fast, associative, and unconscious. The latter mode of human cognition comes at the risk of oversimplification and misclassification, but it saves effort, enables fast orientation, and builds strong capacities to act. Implicit theories thus help to optimize the use of limited cognitive resources. The stability of implicit theories contributes further to the principle of cognitive economy (Simon, 1955) because unlearning old and learning new theories itself require cognitive resources. The human brain is therefore inclined to hold on to implicit theories once their benefits in mental processing outweigh the efforts of searching and adopting alternative frames of reference.

When applied to people acting in social roles, implicit theories comprise the actors' typical or ideal characteristics (Junker & van Dick, 2014; Lord et al., 2020; Vogel & Werkmeister, 2021). Typical attributes are those that an average representative of this social category is most commonly supposed to show, whereas ideal characteristics are expected from cases at the extremes of the distribution (Junker & van Dick, 2014). Attributes cluster in fuzzy sets of similar traits that reflect and define a specific facet of the social category. Those clusters of semantically related attributes represent *prototypes* (Operario & Fiske, 2001). Just like the attributes that constitute them, the prototypes themselves are not distinctive, but interdependent. They can be charged with valence, ranging from positive to negative.

Implicit citizenship theories

Arguably, the citizen's role is an important social role in society. In political philosophy, scholars have devoted much thinking to the notion of citizenship (Marshall, 1950), with important extensions to the PA literature. Indeed, "[t]he concept of citizenship is closely tied to the modern field of public administration" (Frederickson, 1991, p. 405). This concept often carries a normatively charged image of the citizen in vivid interactions with a democratic administration. For example, Frederickson (1991), in his pleas for a *New Public Administration*, has coined the notion of the "virtuous citizen," who is an active, committed, informed, and morally responsible participant in the public policy process. Hence, there is no shortage of academic theories on citizenship, although not all of them outline the good citizen's desired traits as explicitly as Frederickson's theory of the public does.

From our elaborations above, it follows that, in contrast to academic theories about citizenship, implicit theories are not the outcome of reflective reasoning on rational grounds, but emerge, to a greater or lesser extent, in the minds of laypeople as a result of everyday

experiences and socialization. As is the case with any social category with high salience, people will hold implicit assumptions about themselves and others acting in the role of citizens. ICTs, then, are implicit assumptions about citizens' typical or ideal characteristics that guide cognitive categorization and influence attitudes and behaviors toward citizens (Liegat et al., 2022). An exploration into the content and structure of ICTs therefore requires an empirical focus on what people actually think of citizens, instead of a normative reasoning in favor of citizens' desired traits in a theoretical conception of citizenship. Of course, and despite their differences, the contents of implicit theories can still be compared to those of academic theories about citizenship. The extent to which normative conceptions are reflected in what people think of citizens may even be of considerable interest. This is because the extent to which the ideal of a virtuous citizen, for instance, becomes reality is likely to depend on how prevalently participants in state–citizen interactions think along these lines.

It also follows from this reasoning that the notion of "citizen" itself is subject to people's social constructions. From this perspective, the definition of who is a citizen, and who is not, is in the eye of the beholder. The categorization of a target person as a citizen might resonate well with formal criteria of citizenship as defined in academic theories or legal regulations but people might also apply their own criteria, if at all the categorization is a process guided by clear criteria upon which people can reflect. For example, frontline employees might think of all their clients when asked for citizens, notwithstanding that some of them do not conform to formal criteria of citizenship because they are tourists or migrants. ICTs, including the overarching category of "citizen" itself, emerge bottom-up from people's everyday viewpoints and experiences, rather than top-down from academic theories or legal systems.

All people are likely to hold some ICTs, at least in a rudimentary form. This is because it is almost impossible for residents of developed countries not to be exposed to their citizenship, together with the associated rights and duties. However, public employees' ICTs are particularly relevant and interesting. Interactions with citizens are essential to many public service jobs (Guy, 2021; Jakobsen et al., 2019), making this role particularly salient to those working in such jobs. Following research on implicit theories in other fields of social life (e.g., Lord et al., 2020), we assume that the emergence and development of employee–citizen interactions and the outcomes they yield on both sides will, to some extent, depend on the ICTs that public employees bring to their jobs.

The potential significance of public employees' ICTs in state–citizen interactions results from comparisons between an observed target's characteristics and behaviors and the assumptions and expectations that are organized in prototypes (Fiske & Neuberg, 1990; Operario & Fiske, 2001). The degree to which the target (i.e., the

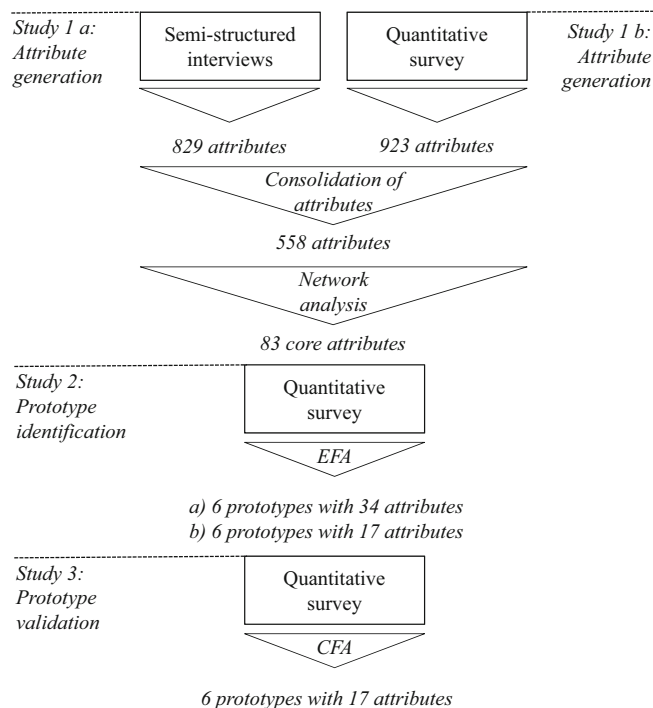


FIGURE 1 Overview of studies.

citizen) matches with a prototype will impact not only the further attributions that the beholder (i.e., the public employee) assigns to the target person, but also the attitudes the beholder develops and the behaviors he/she shows toward the target. The better the match between the target and the prototype, the less cognitive efforts the beholder will need to define the situation and the relationship, and the easier will routinized responses be activated. ICTs therefore help reduce cognitive effort and enable rapid decision making where the role of the citizen is involved and salient in human interactions.

DATA, METHODS, AND RESULTS

To identify the content and structure of ICTs, we conducted four sequential studies (Figure 1). Studies 1a and 1b shared the goal of generating an initial pool of attributes that public employees associate with citizens. The goal of Study 2 was to examine how these attributes cluster into distinct prototypes of citizens. Finally, Study 3 was confirmatory and evaluated the previously identified structure of prototypes. All four samples were broadly surveyed across a variety of subfields of the public sector in Germany. Since participants could not take part in more than one study, all samples are independent of each other. We provide socio-demographic information in Table 1 and more detailed information on the sampling procedure in Supporting Information A. Through all four studies, public sector employees were asked about their associations with citizens in the context of their daily work in their jobs.

Given that ICTs are likely to be contingent on broader traditions of statehood and citizenship, the focus on any empirical setting makes the transferability of the results to other national settings an interesting question for further research. The German political context is characterized by a strong separation of powers, a multi-level federalism, and high levels of professionalism in the public service (O'Toole & Meier, 2017). In the continental European rule-of-law tradition, of which Germany is a prime example, a stronger separation between state and society imbues the relationship between the state and its citizens with more hierarchy than in the Anglo-Saxon tradition (Kuhlmann & Wollmann, 2019; Peters, 2021). However, like many other countries, Germany has made considerable efforts to improve the quality of public services at the frontline (Pollitt & Bouckaert, 2017), with increasing integration of citizens into collaborations with public employees (Grohs, 2021). Such traditions and changes are likely to affect how public employees think of citizens, making ICTs interesting for comparisons across temporal and geographical settings.

Studies 1a and 1b: Attribute generation

Study 1a

We conducted 28 face-to-face interviews with frontline employees in the German public sector (Table 1, Supporting Information B). Interviewees were recruited from all subfields of the public sector and regularly interacted with citizens during their daily work. The interviews were semi-structured and followed the critical incident technique (Flanagan, 1954). We focused on how frontline employees describe citizens in job-related situations, starting from more common situations and moving to particularly positive and negative experiences (for the interview guideline, see Supporting Information C). We asked how interviewees experienced citizens in such situations and what attitudes and behaviors they showed. Given that the interviews were conducted during the COVID-19 pandemic, we asked participants to think of their jobs up until the pandemic to prevent results from being contaminated with influences from extraordinary circumstances. It should be noted, however, that this strategy comes at the expense of potential episodic recall biases, which might occur when participants report about events in the past (Resh et al., 2020). In the analysis of the interview transcripts, we generated codes for every citizens' attribute that was either directly mentioned by the interviewees or apparent from their narrations. This procedure resulted in a total of 829 attributes. Since many attributes were synonyms (e.g., "smart" and "intelligent"), we further consolidated the coding system and ultimately arrived at 389 distinct codes (i.e., attributes).

TABLE 1 Descriptive statistics of samples.

	Study 1a (n = 28)		Study 1b (n = 204)		Study 2 (n = 611)		Study 3 (n = 860)	
	n (%)	Mean (SD)	n (%)	Mean (SD)	n (%)	Mean (SD)	n (%)	Mean (SD)
Age		n/a		45.6 (12.3)		45.7 (12.6)		44.2 (12.4)
Gender								
Male	15 (46.4)		91 (44.6)		296 (48.5)		382 (44.4)	
Female	13 (53.6)		113 (55.4)		313 (51.2)		477 (55.5)	
Others	0 (0.0)		0 (.0)		2 (0.3)		1 (0.1)	
Tenure (in years)		n/a		19 (13.2)		18.7 (13.3)		17.5 (12.9)
Pay group								
E1-E4 or A2-A4	n/a		13 (6.4)		37 (6.0)		79 (9.2)	
E5-E8 or A5-A9	n/a		79 (38.7)		248 (40.6)		322 (37.4)	
E9-E12 or A9-A13	n/a		74 (36.3)		232 (38.0)		306 (35.6)	
E13-E15 or A13-A16	n/a		32 (15.7)		59 (9.7)		105 (12.2)	
Non-tariff or B-grade salary	n/a		6 (2.9)		35 (5.7)		48 (5.6)	
Administrative level								
Federal government	n/a		34 (16.7)		94 (15.4)		161 (18.7)	
State government	n/a		77 (37.7)		235 (38.5)		321 (37.3)	
Local government	n/a		73 (35.8)		209 (34.2)		271 (31.5)	
Social security administration	n/a		20 (9.8)		47 (7.7)		66 (7.7)	
Others	n/a		0 (.0)		26 (4.2)		41 (4.8)	
Administrative subfields								
General public services	5 (17.9)		45 (22.1)		91 (14.9)		106 (12.3)	
Education	4 (14.3)		45 (22.1)		123 (20.1)		206 (24.0)	
Recreation, culture, and religion	2 (7.1)		4 (2.0)		14 (2.3)		29 (3.4)	
Public health services	2 (7.1)		40 (19.6)		101 (16.5)		150 (17.4)	
Public order and security	6 (21.4)		26 (12.7)		108 (17.7)		110 (12.8)	
Environmental protection and nature conservation or waste management	1 (3.6)		5 (2.4)		16 (2.6)		29 (3.4)	
Defense	1 (3.6)		3 (1.5)		21 (3.4)		30 (3.5)	
Economic affairs	2 (7.1)		15 (7.3)		40 (6.6)		69 (8.0)	
Housing	1 (3.6)		7 (3.4)		27 (4.4)		24 (2.8)	
Social security	4 (14.3)		11 (5.4)		58 (9.5)		100 (11.6)	
Others	0 (0.0)		3 (1.5)		12 (2.0)		7 (0.8)	
Type of work ^a		n/a		5.3 (3.1)		5.1 (3.1)		4.9 (3.0)
Citizen contact ^b		n/a		49.2 (33.9)		42.9 (35.6)		40.5 (34.8)

^a0 = exclusively imposing obligations, 10 = exclusively granting benefits.

^bIn percentage of working time.

Study 1b

To balance the depth of our qualitative study with the breadth of a more large-scale study, and in line with comparable studies (e.g., House et al., 1999), we launched a complementary survey among 204 public employees in Germany (Table 1, Supporting Information A). After responding to some demographic questions, participants were requested to state at least five attributes that immediately come to their mind when thinking of citizens (i.e., "Please think carefully about your current work. From

this perspective, what are the immediate associations that come to your mind when you think of citizens?"). A total of 923 attributes were provided as open-text responses and coded into 291 unique attributes.

We subsequently combined the results of Studies 1a and 1b and compiled a list of core attributes by which public employees characterize citizens. The number of non-redundant attributes in the combined list, as aggregated from both studies, was 558. From this input data, we compiled associative networks (separately and combined for the attributes resulting from both studies) by

analyzing co-occurrences of attributes in responses from the same interviewees or survey participants, respectively (for a similar procedure, see Asseburg et al., 2020). To reduce the number of items, we applied a core/periphery partition to the networks (Borgatti & Everett, 2000) and removed all peripheral attributes, which resulted in a list of 85 non-redundant attributes in the network cores. We removed two items from this list, as they were difficult to interpret unambiguously. The final pool of attributes that resulted from Studies 1a and 1b therefore comprised 83 items (Appendix A).

Study 2: Prototype identification

The purpose of Study 2 was to explore how the attributes cluster in prototypes of citizens and, hence, to detect structures in ICTs. This was achieved in an online survey using an RRM (Asseburg et al., 2020; Meade et al., 2020). Like other speeded categorization tasks (e.g., Damansky et al., 2023; Galdi et al., 2008), an RRM exposes participants to stimuli and asks participants to provide fast responses. The idea behind these methods is that participants reveal more intuitive and associative attitudes toward the object of evaluation when they respond quickly and spontaneously (Galdi et al., 2008). Time pressure limits the possibilities of reflecting more explicitly on the task or question and providing more controlled answers (Komar et al., 2010), which should also reduce the risk of social desirability. Methods that increase time pressure for participants have successfully been transferred to PA scholarship, including the Implicit Association Test (Marvel, 2016) and the RRM itself (Asseburg et al., 2020). The RRM also offers the practical advantage that, due to the speeded condition, it allows for an evaluation of a large number of items in a reasonable amount of time.

Participants were exposed to the 83 attributes resulting from Studies 1a and 1b and categorized each of these attributes under speeded conditions. The attributes appeared on the screen sequentially and in random order, together with the term “citizens” (Supporting Information D). The task was to categorize the attributes into one of two options: “match” or “no match” with citizens. The participants were instructed as follows: “Please think carefully about your working life and the professional contact you have with citizens. [...] In the following, we will show you different terms. Please decide spontaneously whether the term fits citizens or not” (for the complete instructions, see Supporting Information E).

Before analyzing the data, we excluded observations from subjects who constantly pressed only one button ($n = 17$) or whose answers to screening questions made no sense ($n = 33$). In addition, we only considered responses within a time of 300 to 10,000 milliseconds (ms). These cut-off criteria ensured that the observations conformed to what is widely accepted in the literature as

quasi-automatic and largely implicit responses to perceptual stimuli (Greenwald et al., 2003). Furthermore, we identified response times exceeding the mean by more than two standard deviations (SDs) as outliers and removed them (Asseburg et al., 2020; Greenwald et al., 2003). We followed common procedures and imputed these missing values by the mean of valid answers for each attribute (Lin & Tsai, 2020). We also conducted the analyses without this adjustment and did not find meaningful differences. In sum, we imputed 2708 outliers, which resulted in a final sample containing 50,713 responses from 611 participants (Table 1 for descriptive statistics). The average speed of valid responses was 1380.1 ms with an SD of 448.3 ms.

Data were analyzed using R version 4.1 (R Core Team, 2023) and the lavaan package 0.6–10 (Rosseel, 2012). Except for the imputed values, the ratings of the attributes were binary (i.e., “match” or “no match”). Due to the data structure, we calculated a tetrachoric correlation matrix which, in turn, fed into an EFA with maximum likelihood estimation (Finney & DiStefano, 2013) and oblimin rotation. Before analyzing the factor structure, we checked whether the data were suitable for the EFA. The sample of 611 participants reflected an appropriate size for the factor analysis (Fabrigar et al., 1999). The Kaiser-Meyer-Olkin measure of sampling adequacy indicated strong relationships among variables ($KMO = .900$).

We performed several rounds of the analysis, and in each round, we removed attributes with a loading below .40 from further analysis. The number of factors to be extracted was guided by parallel analysis (Horn, 1965) and the Kaiser-Guttman criterion (i.e., eigenvalues above 1). These criteria indicated that five or six factors emerged from the data. We decided in favor of the six-factors solution, which contains 34 attributes, because it explained more variance than the five-factors solution (54.4 vs. 50.9 percent). After a content validation, we labeled the resulting factors *Engagement*, *Kindness*, *Determination*, *Reticence*, *Neediness*, and *Foreignness* (Table 2). As an alternative to this solution with 34 attributes, we followed Sy's (2010) strategy to limit the number of attributes further, which increases practicality in future studies (Epitropaki & Martin, 2004; Vogel & Werkmeister, 2021). For each factor, we only considered the three attributes with the highest loadings. *Foreignness* consisted of only two attributes, which were kept. This solution contains 17 attributes (Table 2, in italics).

Study 3: Prototype validation

The goal of Study 3 was to cross-validate the factor structure derived from Study 2 in an independent sample and to decide which of the two alternative solutions (i.e., 34 vs. 17 items) to retain. Accordingly, we followed the same procedure as in Study 2 but limited the item set to the

TABLE 2 Factor matrix (Study 2).

Factor label	Attribute	Factor loading	Communality	M	SD
Engagement (15.6%) ^a	<i>Motivated</i>	.76	.70	.51	.49
	<i>Goal-driven</i>	.75	.54	.52	.48
	<i>Conscientious</i>	.74	.64	.47	.49
	<i>Dedicated</i>	.70	.58	.52	.49
	<i>Informed</i>	.67	.50	.54	.49
	<i>Inquisitive</i>	.65	.48	.54	.49
	<i>Supportive</i>	.65	.51	.46	.48
	<i>Hardworking</i>	.60	.43	.52	.49
	<i>Interested</i>	.53	.64	.72	.44
	<i>Fierce</i>	.46	.21	.40	.48
Kindness (10.1%) ^a	<i>Friendly</i>	.87	.73	.79	.39
	<i>Nice</i>	.77	.64	.78	.41
	<i>Polite</i>	.67	.65	.70	.45
	<i>Disturbing</i>	-.55	.56	.32	.45
	<i>Unpleasant</i>	-.47	.63	.40	.48
Determination (8.7%) ^a	<i>Egoistic</i>	.85	.78	.49	.49
	<i>Assertive</i>	.59	.49	.46	.49
	<i>Demanding</i>	.55	.43	.75	.42
	<i>Unreasonable</i>	.53	.75	.56	.48
	<i>Bossy</i>	.52	.53	.51	.48
	<i>Discerning</i>	.47	.20	.70	.45
Reticence (8.0%) ^a	<i>Introvert</i>	.77	.70	.28	.43
	<i>Reserved</i>	.76	.60	.36	.46
	<i>Shy</i>	.69	.63	.30	.45
	<i>Closed</i>	.58	.52	.31	.45
	<i>Passive</i>	.53	.35	.38	.47
Neediness (7.4%) ^a	<i>Anxious</i>	.78	.69	.48	.49
	<i>Desperate</i>	.64	.58	.52	.49
	<i>Worried</i>	.60	.40	.70	.44
	<i>Burdened</i>	.53	.41	.57	.48
	<i>In need (of help)</i>	.51	.30	.71	.44
	<i>Insecure</i>	.50	.37	.67	.46
Foreignness (4.5%) ^a	<i>Foreign-language</i>	.86	.76	.56	.49
	<i>Non-native</i>	.73	.56	.57	.48

Note: $n = 611$; items from the 17-attributes solution in italics.

^aProportion of variance explained.

34 attributes of the six-factors solution from Study 2. Again, observations were deleted if participants consistently pressed only one button ($n = 27$) or responded nonsense to screening questions ($n = 5$). 1432 outliers were imputed by the mean of valid answers per attribute, such that the final sample contained 29,240 responses from 860 participants (response time: $M = 1489.8$ ms, $SD = 445.3$ ms; Table 1).

We used robust diagonally weighted least squares (DWLS) CFA to examine the validity of the six factors extracted in Study 2. This method is suggested by the attributes' binary and non-normal data structure, in line

with recommendations in the literature (e.g., Finney & DiStefano, 2013). We first tested the six-factor model containing 34 attributes. Results indicated that this model provided a suboptimal fit to the data ($\chi^2/df = 4.526$; robust CFI = 0.866; robust TLI = 0.853; robust RMSEA = 0.082; SRMR = 0.103) (Hu & Bentler, 1999). By contrast, alternative model specifications containing 17 attributes showed a substantially better fit (Supporting Information F). Results indicate that a first-order six-factors model provides the best fit with the data ($\chi^2/df = 3.076$; robust CFI = 0.960; robust TLI = 0.948; robust RMSEA = 0.049; SRMR = 0.067). Figure 2 illustrates the

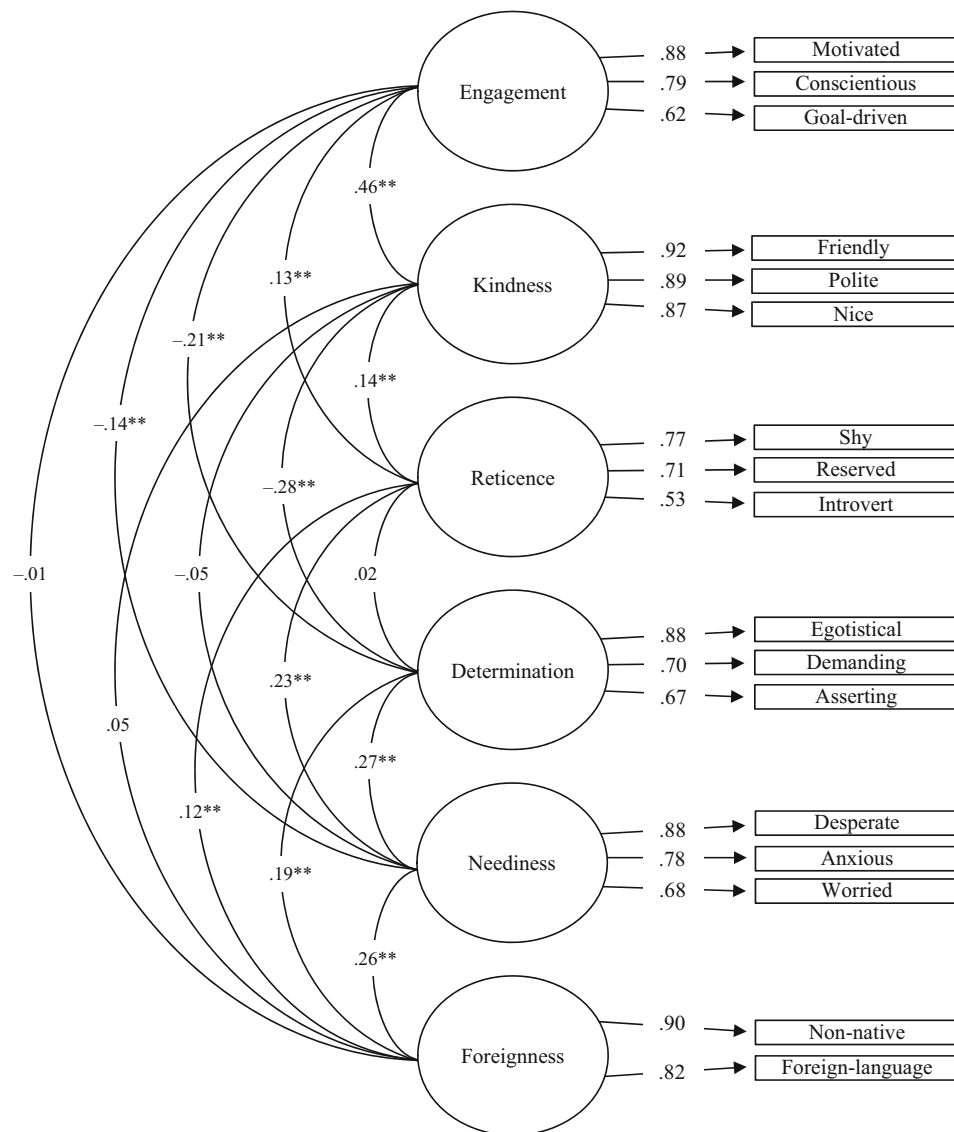


FIGURE 2 Factor loadings and correlations from CFA. $n = 860$; all factor loadings are significant at $p < .001$; correlations: ** $p < .01$.

final model, while Appendix B shows the model coefficients.

After the completion of the RRM, we additionally asked participants for the valence of the attributes, as prototypes may differ in whether they have positive, negative, or neutral connotations (Junker & van Dick, 2014). In these terms, positive prototypes represent desirable attributes of citizens, while negative prototypes (i.e., antiprototypes) represent undesirable attributes. For a closer examination of this valence structure of ICTs, we asked participants for their ratings of the desirability of attributes (i.e., "If citizens were described with the following characteristics—would you consider these characteristics as (very) negative, neutral, or (very) positive?"). Similar procedures have been used for assessing the connotation of stereotypes (Bertram et al., 2022; Willems, 2020). The valence scores are presented in Supporting Information G and the plotted results in Figure 3.

Post-hoc analyses

As ICTs are likely to differ across contexts, we conducted two post-hoc analyses. First, we analyzed if the overall structure of ICTs is stable across different work contexts. For this purpose, we conducted two analyses of measurement invariance (MI) between subgroups in our sample (Jilke et al., 2015; Supporting Information H). For the first analysis, we split the sample into participants according to the type of public service, with one subsample including participants who predominantly grant benefits to citizens and the other subsample including employees who tend to impose obligations on citizens. We consider this difference a relevant contextual dimension because citizens act in different roles when they either apply for benefits on their own initiative (such as for those in means-tested programs) or involuntarily receive sanctions (such as a speeding ticket).

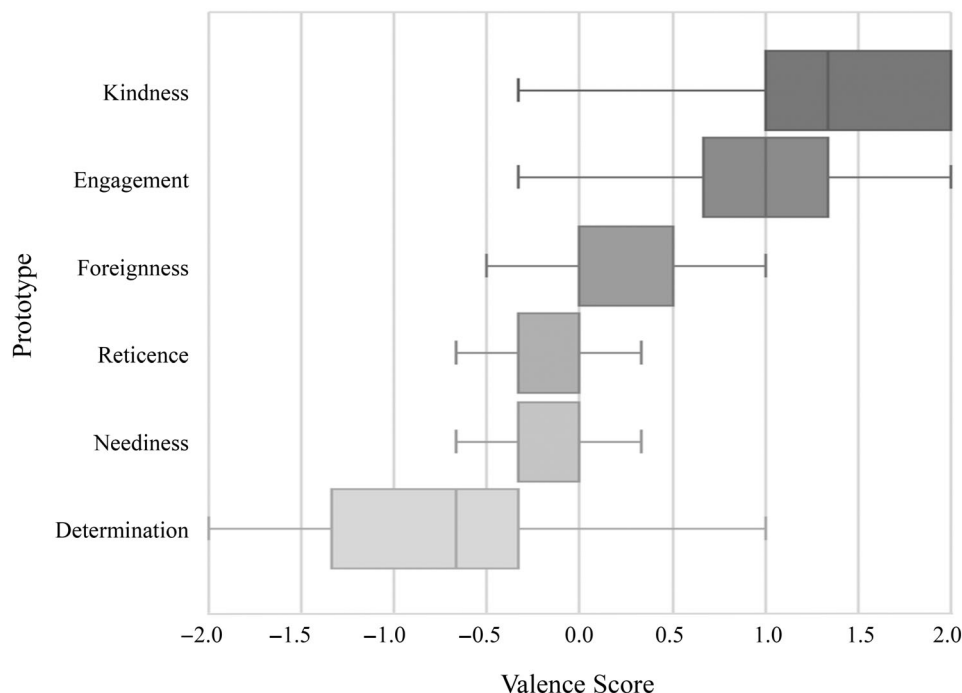


FIGURE 3 Valence score box plots. $n = 860$.

This contrast corresponds to different policy types, with (re-)distributive policies at the benefits-granting end of the continuum and regulative policies at the obligations-imposing end (Lowi, 1972). In the second analysis of MI, we split the sample according to the extent to which public employees have contact with citizens. Again, this contextual dimension is theoretically relevant because the contact hypothesis in psychology (Allport, 1954) states that people think less stereotypically about social groups the more contact they have with representatives of those groups. The results of both analyses show no measurement variance between the subgroups in statistically significant magnitudes, suggesting that the structure of ICTs is stable across these contexts.

Second, we analyzed how the salience and valence of particular prototypes are contingent on the socio-demographic characteristics of public employees. The full results of multiple regression analyses are presented in Supporting Information I. The findings indeed show some interpersonal variation of ICTs. For example, gender has a significant effect on the salience of *Foreignness* and *Kindness*: Female employees associate citizens significantly more strongly with being foreign and kind than non-female employees. Moreover, the higher the pay group, the more positive the perceived valence of *Engagement* and *Kindness*, whereas *Neediness* is more negatively charged the higher the employees' pay group is. To conclude, despite the stable structure of ICTs across different work contexts, there are interpersonal differences in the salience and valence of particular prototypes.

DISCUSSION AND CONCLUSION

Scholarship in PA has continuous interest in state–citizen interactions (Guul et al., 2021; Jakobsen et al., 2019), and a vivid stream within this body of literature has put forward the idea that social categorization is important for the emergence, development, and consequences of such interactions (Bisgaard & Pedersen, 2022; Jilke & Tummers, 2018; Raaphorst & Groeneveld, 2018; Raaphorst & van de Walle, 2018). Our study has further delved into the social categories public employees bring into these interactions. We suggest that these categories are organized in a larger system of interrelated attributes and prototypes, which we refer to as ICTs. Our series of explorative and confirmatory studies reveal that trait attributions to citizens cluster in six prototypes (i.e., *Engagement*, *Kindness*, *Determination*, *Reticence*, *Neediness*, and *Foreignness*). Accordingly, public employees indeed bring generalized assumptions about prototypical citizens to their jobs, as the attributes that they implicitly associate with citizens do not co-occur randomly, but in recurrent patterns that prove to be stable across different settings of public sector work. While some of the extracted prototypes are new to the literature, others are related to social categories that have previously been discussed in PA scholarship.

The prototype of *Engagement* (i.e., motivated, conscientious, goal-driven) emerges in the literature on street-level bureaucracy, although behavioral cues from citizens have been researched much less than demographic signals (Bisgaard & Pedersen, 2022; Guul et al., 2021;

Jilke & Tummers, 2018). The study by Guul et al. (2021) shows that caseworkers are more willing to spend extra time and effort if clients are motivated. In a similar vein, Döring and Jilke (2022) demonstrate that citizens receive extra effort from employees when they (i.e., the citizens) are well-prepared for the administrative encounter. Our empirical findings confirm that public employees appreciate citizen engagement, as it is among the prototypes with clearly positive valence. The prototype also relates to normative theories of citizenship because it strongly reminds of the “virtuous citizen” with similar attributes (Frederickson, 1991). Accordingly, our results suggest that this ideal type is to a considerable extent reflected in what employees actually think of citizens, which is good news for the proponents of a responsive administration that interacts vividly with the citizenry.

The prototype of *Neediness* (i.e., desperate, anxious, worried) is associated with worthiness or deservingness, which have frequently been researched as social categories applied by street-level bureaucrats (Jilke & Tummers, 2018; Ratzmann, 2021; Senghaas, 2021). For example, Jilke and Tummers (2018) define “the needy client” as a subtype of deservingness, characterized by a strong need for help resulting from weak performance. In this and other studies, bureaucratic procedures—be they observed in the field or mimicked in experiments—trigger the categorization, as they require participants to make forced choices with regard to a target person’s deservingness. Our findings show that, also without such procedural triggers and in the absence of an observed target, public employees think of citizens in terms of neediness. Although needy citizens may cause extra work for public employees (Döring & Jilke, 2022; Jilke & Tummers, 2018), the prototype is not particularly negatively charged. This observation possibly reflects that the motivation to help others is among the reasons why people decide to work in the public sector (Perry & Wise, 1990).

Although the prototype of *Foreignness* (i.e., non-native, foreign-language) has the least explanatory power in our factor analysis, it deserves particular attention because it relates to scholarship on racial and ethnic stereotypes in administrative decision-making (e.g., Andersen & Guul, 2019; Pérez, 2010). The emergence of this factor suggests that the racial or ethnic background of citizens matters to bureaucrats, to an extent that it figures in their prototypical representations of citizens. However, we find that this prototype has no particular valence (i.e., neither positive nor negative; Figure 2). This finding seems to contradict accumulated evidence that public employees have negative attitudes toward minorities and make decisions to minorities’ disadvantage (Andersen & Guul, 2019; Oberfield & Incantalupo, 2021; Pérez, 2010). Instead, our results suggest that this bias is less clear than often assumed, thus echoing the findings of recent studies (Jilke & Tummers, 2018; Petersen, 2021; Van Dooren & Jilke, 2022). However, this is a conclusion that should be drawn carefully. Other than in the association task, we

gathered valence scores for attributes from a traditional survey instrument, which may make our findings prone to social desirability issues.

The other prototypes in our taxonomy are largely new to the study of social categorization in state–citizen interactions. *Kindness* (i.e., friendly, polite, nice) is the most positively charged prototype and is therefore a finding that is consistent with previous studies in other fields. For example, police officers tend to be more lenient if they perceive someone as pleasant and polite (Oberfield, 2014). This finding also speaks to the literature on workplace incivility (e.g., Smith et al., 2021; Young et al., 2021). Unkind, uncivil behavior by citizens is a clear violation of the expectations conveyed in the prototype. Our theory suggests that a perceived mismatch between the prototype and a target person’s observed behaviors will elicit negative responses on the part of the observer.

Determination (i.e., egoistic, demanding, assertive) is the only prototype whose valence is clearly negative. Such prototypes have been referred to as antiprototypes (Junker & van Dick, 2014), as they are cognitive representations of undesirable characteristics. Given that negative experiences tend to be memorized for a longer time and tend to evoke stronger reactions than positive events (e.g., Baumeister et al., 2001), this prototype deserves more attention than before. Among the few studies that touch upon citizens’ *Determination* is the book by Maynard-Moody and Musheno (2003), who show that street-level workers often have little patience with demanding clients and might stick rigorously to rules in order to constrain and punish them.

Finally, the prototype of *Reticence* (i.e., shy, reserved, introvert) has even fewer points of reference in previous scholarship. From the perspective of normative theories of citizenship, the prototype is almost the antiprototype of *Engagement*, although, in more empirical terms, we find no evidence that the two factors are intercorrelated, nor that *Reticence* has a particularly negative valence. However, passive citizens who are disengaged and difficult to motivate for participation in administrative procedures and public policy contrast sharply with the notion of citizenship in normative conceptions of public administration (Frederickson, 1991) as well as with their role as co-creators of value in public service ecosystems (Osborne et al., 2022). The salience of this prototype in public employees’ thinking indicates that ideal and real types of citizens still differ substantially.

Across all prototypes, the extracted content of ICTs suggests that public employees think of citizens largely in neutral or positive terms. In the reverse perspective, scholarship has shown that citizens often (yet not consistently) have a negative image of the public service and its professions (Bertram et al., 2022; Marvel, 2016; Willems, 2020). It seems that public employees do not reciprocate this negativity. Instead, our results suggest that the motivation to help others and to benefit society (Perry & Wise, 1990) is reflected in employees’ neutral or

positive thinking about citizens, despite the negatively charged prototype of *Determination*. This is worth noting, as media reports about public employees mistreating citizens may convey a different picture. While such incidences are, of course, serious issues and deserve high attention, they should not obscure the fact that public employees more generally tend to approach citizens with neutral and positive attitudes.

Practical implications

While our theoretical framework suggests that ICTs, like any implicit theories, are difficult to change intentionally, it does not imply that change is impossible. This is important to know for public managers who are in charge of service quality at the frontline, given that implicit attitudes translate into intentions and behaviors and might interfere with public administration's aim for neutrality and equality. Whereas we do not find evidence that negative prototypes (i.e., antiprototypes) of citizens are widespread and prevalent among public employees, they may, of course, occur in particular settings and subgroups of the workforce. In this case, public managers might consider interventions to “unfreeze” these ICTs and to debias employees' thinking about citizens.

A meta-analysis has found that three kinds of procedures are most effective in attempts to change implicit attitudes (Forscher et al., 2019): First, negative associations might be weakened by exposure to stimuli that run counter to preexisting antiprototypes. For example, public managers might convey a positively charged image of exemplary citizens in their internal communication, or they might encourage employees to change perspectives and to put themselves into the shoes of citizens to create overlap in self-concepts. Second, making more cognitive resources available to individuals is effective in reducing negative associations because the depletion of resources fosters stereotypical thinking. Public managers should thus care for a work design that reduces the risk of cognitive overload, and they should be particularly attentive to cases in which the workload is extraordinarily high (e.g., due to vacancies). Third, the goal of responding to a stimulus in a way that is opposed to preexisting associations can change the expression of these associations. For instance, public managers can directly instruct employees to suspend antiprototypical associations with citizens and to act upon positive assumptions instead, or they can more indirectly communicate general norms of how to approach and interact with citizens. All these measures will be more effective the closer encounters with citizens are and the more often managers repeat them, given the transient nature of the effects of such interventions (Lai et al., 2016; Marvel, 2016).

Psychological research also suggests that the persistence of implicit theories does not result primarily from their temporal stability within individuals, but more so

from stable social environments in which individuals act (Vuletic & Payne, 2019). Following this line of reasoning, the mental accessibility of ICTs is largely contingent on environmental factors. Efforts to reduce the salience of antiprototypes and to activate prototypes thus might not only be targeted at individual employees but rather address the context in which they work and interact with citizens. PA scholarship has recently pushed toward a “public service-dominant logic” (Alford, 2016) and framed state–citizen interactions in broader terms of “public service ecosystems” (Osborne et al., 2022). Public managers might cultivate such ecosystems, encouraging employees to think along these lines and to recognize citizens as co-creators of public value. This holistic system and culture of public services are likely to make other, and more favorable, ICTs accessible than in the case of a more episodic and transactional understanding of service delivery, which fosters decontextualized trait attributions to citizens without acknowledgement of the whole-life experience they bring to the encounter and their role in the value co-creation process. Public managers might not only select and promote employees who hold favorable citizen prototypes but also create a cultural environment that makes these ICTs accessible and salient. For example, trainings raising employees' awareness of citizens' role in the public service ecosystem might be an easy first step in this direction.

Limitations and further research

Our study has some limitations, which should be considered in future research. First, context is likely to matter for the structure and content of ICTs, but our samples cover only limited contextual variation. The sampling across many subfields of the public sector allowed us to account for variation in terms of citizen contact and policy types, with the structure of ICTs showing no measurement variance across these contexts. However, ICTs might be contingent on other contextual variables, such as environmental complexity or goal clarity and consistency (O'Toole & Meier, 2017). Future research could take these and further contingencies into account. Part of this agenda could be to explore domain-specific prototypes of citizens. The public service is diverse, and “citizen” can mean different things to public employees working in different domains of the public sector. It is left to future studies to explore how ICTs differ between levels of abstraction, service domains, and professional groups, and what their interdependencies across these units are.

Second, our samples have no variation on another important contextual variable, that is, the country setting. State–citizen relations are, however, likely to be contingent on administrative traditions and national cultures of statehood and citizenship (Kuhlmann & Wollmann, 2019), such that it remains an open issue if the extracted ICTs emerge in other countries as well. Cross-cultural

validations and comparisons of ICTs thus offer a rich field for further research. To contrast well with the case of Germany, future studies could focus on countries with other administrative traditions and with a more unitary and centralized government (O'Toole & Meier, 2017), as this administrative and political context might shape how state–citizen interactions evolve.

Third, the RRM—like other speeded categorization tasks—uses a binary response scale (Galdi et al., 2008; Meade et al., 2020), as this scale enables faster decision making than interval scales, which engage participants in more conscious and reflective thinking. Hence, our choice was predominantly driven by theoretical considerations to account for the “implicit” in ICTs. Future research could go further in this direction and utilize the repertoire of implicit methods that has recently been expanded in PA scholarship (Hesmer et al., 2021; Marvel, 2016). By contrast, other studies might use more traditional survey instruments with interval scales, asking participants for the extent to which they think an attribute applies to citizens. Comparing the results of traditional, explicit survey instruments with those of more innovative, implicit methods would be intriguing.

Fourth, experimenting with implicit methods is worthwhile for another reason: Implicit theories might be implicit to an extent that we missed them even with the RRM. In particular, we could not control for subtle attributions of socio-demographic characteristics to typical citizens which might co-occur, and interact, with more overt attributions of other characteristics. For example, it might be possible that participants had a particular socio-demographic category in mind (e.g., “male”) when we asked them to further think of citizens, and this categorization might have influenced attributions of other traits. While our explorative studies provide no evidence that socio-demographic associations emerge upon the trigger “citizen” (except for *Foreignness*), we encourage future studies using implicit methods to explore simultaneous attributions of multiple characteristics to citizens.

CONCLUDING REMARKS

Social categorization is ubiquitous in human cognition and, hence, in public employees' interactions with citizens. Our study suggests that public employees perceive citizens through the multiple lenses of ICTs and build their attitudes and behaviors depending on the extent to which observations resonate with prototypes and antiprototypes (Osborne et al., 2022). This perspective responds to calls for more research on implicit processes of attitude formation toward clients (Jilke & Tummers, 2018; Keulemans & van de Walle, 2020) and advances scholarship on social categorization in state–citizen interactions (Raaphorst & van de Walle, 2018). More precisely, it contributes to the theorizing of variables and processes that intervene in this categorization. We suggest that prototypes deriving from the general

category of citizen do so. Our study has explored the structure and content of such prototypes more directly and more comprehensively than previous research. An implication of the extracted taxonomy is that citizen prototypes are highly interdependent, combining into a larger system of implicit theories and operating in concert. Our study, however, exceeds the capacities of what an initial study can elaborate on, leaving a rich agenda for theoretical advancement and empirical substantiation in future studies. The results of these endeavors will speak to literatures that are concerned with social categorization in PA and relate to important societal issues, such as social justice and inclusiveness.

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DATA AVAILABILITY STATEMENT

The quantitative data as well as the information extracted from the qualitative data underlying this article is available at <https://zenodo.org/records/12732523>. [Correction added on 24 July 2024, after first online publication: the Data Availability Statement section has been updated.]

ORCID

Rick Vogel  <https://orcid.org/0000-0002-1361-5085>

Dominik Vogel  <https://orcid.org/0000-0002-0145-7956>

Marlen Christin Liegat  <https://orcid.org/0000-0001-6517-1116>

David Hensel  <https://orcid.org/0000-0001-8369-1377>

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AUTHOR BIOGRAPHIES

Rick Vogel is Full Professor of Public Management at Universität Hamburg (Germany). His current research interests are public sector leadership, cross-sector partnerships, state–citizen interactions, and institutional change in the public sector. Email: rick.vogel@uni-hamburg.de

Dominik Vogel is an Assistant Professor of Public Management at Universität Hamburg (Germany). His research is focused on leadership in the public sector, motivation of public employees, interaction of citizens and administration, and behavioral public administration. Email: dominik.vogel-2@uni-hamburg.de

Marlen Christin Liegat is a Research Assistant and PhD candidate at the Junior Professorship of Public Management at Universität Hamburg (Germany). Her research interests are how psychological mechanisms affect public sector workers in state–citizen interactions. Email: marlen.liegat@uni-hamburg.de

David Hensel is a Postdoctoral Researcher at the Chair of Public Management at the Universität Hamburg

(Germany) and at the Chair of Marketing at the Helmut-Schmidt-University (Germany). His current research interests are implicit measurement methods and implicit citizenship theories. Email: david.hensel@uni-hamburg.de

SUPPORTING INFORMATION

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APPENDIX A: ATTRIBUTE LIST

Affable	Empathetic	Open
Agitated	Expectant	<i>Passive^a</i>
Aggressive	Extrovert	Pleasant
Annoying ^b	<i>Fierce</i>	<i>Polite</i>
<i>Anxious</i>	<i>Foreign-language</i>	Preloaded
Appreciative	<i>Friendly</i>	Reproachful
Ashamed	Furious ^c	<i>Reserved</i>
<i>Assertive</i>	<i>Goal-driven</i>	Satisfied
Assisting	Grateful	Seeking help
Attention-seeking	Greedy ^b	Sensitive
<i>Bossy</i>	<i>Hardworking</i>	<i>Shy</i>
Burdened ^{a,c}	Impatient	<i>Supportive</i>
Calm	<i>In need (of help)</i>	Sympathetic
<i>Closed</i>	<i>Informed</i>	Tiring
<i>Conscientious</i>	<i>Inquisitive</i>	Trusting
Conspicuous	<i>Insecure</i>	Uncomprehending ^c
Control-addicted	Insistent	Uneducated
Cooperative	<i>Interested</i>	Unfriendly
<i>Dedicated</i>	<i>Introvert</i>	Uninformed
<i>Demanding</i>	Irritated	Uninterested
<i>Desperate^a</i>	Lazy	Unknowing
Difficult	Likeable	Unnerving
Disadvantaged	Loud	<i>Unpleasant</i>
<i>Discerning</i>	Lying	<i>Unreasonable</i>
Dismissive	<i>Motivated</i>	Unsatisfied
Disorganized	Nagging	Vulnerable
<i>Disturbing</i>	<i>Nice</i>	Worried ^{a,c}
<i>Egoistic^{a,c}</i>	<i>Non-native</i>	
Emotional	Obstinate	

Note: Attributes from Studies 2 and 3 (attributes from Study 3 in italics); ^aAlso training attribute in Study 3. ^bDeleted because of ambiguous interpretability. ^cAlso training attribute in Study 2.

APPENDIX B: MODEL COEFFICIENTS OF CFA FOR THE ICT MODEL

Prototype	Attribute	β	SE	z
Engagement	Motivated	.882***	.031	28.912
	Conscientious	.786***	.032	24.320
	Goal-driven	.619***	.039	15.859
Kindness	Friendly	.916***	.021	43.563
	Polite	.894***	.021	42.572
	Nice	.874***	.023	38.501
Determination	Egoistic	.883***	.039	22.868
	Demanding	.696***	.045	15.344
	Assertive	.668***	.039	16.988
Reticence	Shy	.765***	.048	15.905
	Reserved	.710***	.045	15.762
	Introvert	.530***	.050	10.674
Neediness	Desperate	.875***	.031	28.512
	Anxious	.783***	.032	24.119
	Worried	.678***	.039	17.429
Foreignness	Non-native	.901***	.052	17.464
	Foreign-language	.817***	.049	16.739

Note: $n = 860$. *** $p < .001$.