


Job-related technology resistance among public sector employees: A social environment approach

“Alexa, how can I avoid using innovative technology at work?”


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Abstract: The current paper presents a work-in-progress study extending previous research on technology resistance among public sector employees by introducing a social environment approach, providing a more inclusive view of resistance towards technology in the public sector. We argue that technology-resisting behavior at the individual level may be modified by both individual characteristics, such as the susceptibility to the status quo bias, as suggested by previous work, and the particular social environment. We argue that the unique organizational-cultural characteristics of the public sector constitute a special social environment that may induce job-related technology resistance among public sector employees. We expect this effect to be moderated by generational cohorts and the progress in digitalization of the respective employing public administration. To test our hypotheses, we propose an online experiment to explore the relationship between public sector employees’ attitudes towards the use of innovative technologies and the social environment.

Keywords: public sector, technology resistance, intention to use, social environment, social cognitive theory, social identity

1 Introduction

In recent years, the implementation of innovative technologies has become a key element in increasing efficiency and effectiveness in public administrations [see, e.g., Ja15, Li19]. Although the huge potential benefits, resistance to the technology remains a major challenge to its successful application. Previous research examining technology resistance in the public sector predominantly focuses on individual characteristics of the employees such as the susceptibility to status quo bias, and resistance to change [Bu12, MBS13,

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OSN21]. However, a specific organizational culture has been attributed to the public sector as compared to private organizations [BK98, KM16] implicating that public sector employees may operate in a special social setting. Thus, the current work extends previous research by incorporating a social environment approach to better understand resistance towards innovative technology among public sector employees. We argue that public sector employees' resistance to technology is not solely determined by individual characteristics but is also significantly influenced by the particular social environment. The unique organizational-cultural characteristics of public sector institutions may create a distinct social milieu that might be able to modify technology resistance.

The current study explores how the social environment in public administration influences employees' attitudes towards technology adoption. In particular, we investigate whether resistance to technology depends on the particular social environment in which the technology is used, i.e., during work in public administration and for personal purposes in a private setting. By answering this research question, this study aims to provide a more comprehensive understanding of the dynamics driving technology resistance in the public sector by considering both the individual characteristics of the employees and the social setting, which has not been done before.

2 Theory and related work

Previous studies investigating technology resistance in the public sector have primarily concentrated on antecedents of resistance at the individual level such as status quo bias and general resistance to change [Bu12, MBS13, OSN21]. The status quo bias is a systematic mental error of judgment and decision making that has been extensively studied in psychology and behavioral economics. It describes the behavioral phenomenon that individuals often tend to prefer the current state over other alternatives [SZ88]. It has been linked to technology resistance by arguing that people are likely to resist innovations that potentially alter their established routines and practices [KK09, OSN21]. Another individual disposition that has repeatedly been employed by researchers to account for technology resistance [A119, La16, NY08] is the general resistance to change [Co15, Or03]. Resistance to change in the context of technology adoption refers to the reluctance or refusal to accept and implement new technologies within an organization or by individuals. This resistance can stem from various factors, including fear of the unknown, disruption of established routines, lack of perceived benefits, and concerns about competence and job security. In addition, studies investigating technology adoption in more specific settings, brought further constructs of individual differences into play that may modify technology resistance such as the fear of technology (e.g. AI-anxiety), domain specific knowledge, and demographics such as age [e.g., Ve03, WW22, We24, Yo21].

While these individual characteristics have been shown to impact technology resistance, they do not fully represent the complexity of it. Thus, other factors beyond individual

dispositions may additionally play a role, particularly in the context of technology resistance within the domain of public services. For instance, public sector organizations are characterized by unique organizational-cultural attributes, including bureaucratic structures, stability-oriented values, and a high degree of formalization and regulation. These attributes may establish a special social environment that influences employees' attitudes and behaviors towards technological innovations. That is, to achieve a more inclusive view of resistance towards technology in the public sector, researchers need to go beyond the individual level and take the social environment into account.

2.1 Social environment and technology resistance in the public sector

One theory proposing an interrelationship between the social environment, individual behavior and personal factors is the Social Cognitive Theory (SCT) [Ba86]. The SCT describes psychosocial functioning in a triadic, reciprocal causality. It can be understood as a causal model integrating social environmental settings, behavior and individual dispositions such as cognitive and other personal as interdependent entities that mutually influence each other [Ba88].

The social environment in public sector organizations is characterized by unique attributes, including specific bureaucratic structures, stability-oriented values, and a high degree of formalization and regulation [CB12]. These characteristics can create a distinct organizational culture that might impact employees' attitudes towards technology adoption. For example, bureaucratic structures often emphasize adherence to established procedures and protocols, which can foster a resistance to change and innovation [De20].

These characteristics create a special social milieu that may influence the resistance to technology in a different way than other social settings such as private life. In a public sector setting, the established norms, values, and practices potentially modify employees' attitudes towards technology and their intention to use. The bureaucratic and hierarchical nature of public institutions often fosters a conservative approach to change, making employees more resistant to innovations that could disrupt established routines [RG14], which is evident from the forced risk aversion handling public funds [CB12]. Furthermore, SCT emphasizes that individuals learn by observing the behaviors of others. If influential personalities such as team leaders or managers within a social environment exhibit resistance to technology, others are likely to model this behavior. For instance, if senior executives tend to generally resist adopting a new software system, junior employees might also resist, mirroring the attitudes and actions of their role models.

Another concept that is interconnected with the social environment is social identity. The social identity theory [TT86], suggests that individuals derive a sense of identity and self-esteem from their membership in social groups. In the workplace, employees' social identity is often related to their professional roles and the organizational culture. However,

within a private social environment, they may identify with other social groups (e.g., family, friends) and may exhibit a different technology resistance than in a public sector social environment.

As mentioned above, previous studies investigated several individual personality traits that play a crucial role in technology resistance. For example, individual dispositions such as the susceptibility to cognitive biases, resistance to change, and fear of being replaced by a technology (e.g., AI-anxiety) have been identified as determinants of technology resistance [e.g., Bu12, MBS13, OSN21, Ve03, WW22, We24, Yo21]. It was also shown that younger people are less resistant to technology than older people. This effect should be given particular consideration in the study of public administration, as it is struggling with an ageing workforce in several countries [Ni11, De20].

Based on the related work and theoretical considerations described above, we derive the following hypotheses:

H1: Public sector employees show a stronger technology resistance in the social environment of their job than in a private setting.

H2: Individual technology resistance increases with increasing individual susceptibility to biases, such as the status quo bias

H3: The Individual technology resistance of public sector employees increases with increasing individual susceptibility to biases, such as the status quo bias, replicating findings of previous work

H4: The Individual technology resistance of public sector employees increases with increasing individual resistance to change.

H5: The effect of the social environment on technology resistance is stronger for older than for younger public sector employees

3 Proposed empirical study

To test our hypotheses, we propose an online experiment that will be conducted before the RVI conference 2024. At the current stage of work, we develop two versions of a survey including measures of technology resistance embedded in particular scenarios representing the corresponding social environment. Furthermore, we include selected personality measures.

3.1 Sample

We plan to recruit participants via Prolific which offers the possibility to screen participants according to their profession and origin. We will invite employees from public administrations in all countries of the European Union (EU) to participate. We will first calculate the sample size via a power analysis.

3.2 Planned design and materials

The planned study has a between subject design. That is, we divide our sample into two groups. Each participant will respond to social environment scenarios that are either described in the context of their work as employees in public administration, or in the private context. To measure technology resistance and status quo bias we use the adopted measures of Kim & Kankanhalli and Oschinsky et al. [KK09, OSN21]. Moreover, we include several personality scales to measure resistance to change [Or03], the fear of being replaced by an innovative technology [WW22], and the Heuristics-and-Biases Inventory [Be21]. Finally, we will ask participants to provide demographic data age.

4 Conclusion and further progress

This work-in-progress study revolves around the dynamics of technology resistance among public sector employees, expanding on previous research by integrating a social environment approach. Our current research suggests that resistance to innovative technology in public sector settings is not solely dictated by individual traits such as susceptibility to status quo bias and resistance to change but is significantly shaped by the distinctive organizational culture and social milieu prevalent in public administrations. By employing an online experiment targeting public sector employees across the European Union, we aim to investigate how these unique social environments influence technology resistance and whether this effect varies across different generational cohorts and levels of digitalization within public administrations.

As we move forward with our study, our immediate goal is to finalize the proposed online experiment and collect initial data. We aim to present first results at the upcoming RVI conference 2024. The preliminary results will form the basis for engaging discussions with experts, providing valuable insights and feedback to refine our approach. Post-conference, we plan to incorporate this feedback to further improve the study. Our ultimate objective is to complete the study by conducting a comprehensive analysis of the data, leading to a detailed understanding of how social environments influence technology resistance among public sector employees. This will not only contribute to academic literature but also offer practical recommendations for public administration to mitigate or eliminate negative impacts of technology resistance.

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